

CHAPTER OUTLINE

MODULE 5: WHAT IS THE SCIENTIFIC METHOD?

Defining the Problem
Reviewing the Literature
Formulating the Hypothesis
Collecting and Analyzing Data
Developing the Conclusion
In Summary: The Scientific Method

MODULE 6: MAJOR RESEARCH DESIGNS

Surveys
Ethnography
Experiments
Use of Existing Sources

MODULE 7: ETHICS OF RESEARCH

Confidentiality
Conflict of Interest
Value Neutrality

MODULE 8: DEVELOPMENTS OF METHODOLOGY

Feminist Methodology
Queer Theory and Methodology
The Data-Rich Future
Reviewing the Literature

SOCIAL POLICY AND SOCIOLOGICAL RESEARCH: STUDYING HUMAN SEXUALITY

Boxes

Our Wired World: Surveying Cell Phone Users
Research Today: Visual Sociology
Taking Sociology to Work: Dave Eberbach, Associate Director, Iowa Institute for Community Alliances

APPENDIX I: USING STATISTICS AND GRAPHS

APPENDIX II: WRITING A RESEARCH REPORT

LEARNING OBJECTIVES

- Outline and describe the steps in the scientific method.
- Give an example of an operational definition.
- Explain the relationship between hypotheses and variables.
- Distinguish correlation from cause.
- Summarize the characteristics, advantages, and limitations of the major research designs.
- List the basic principles of the American Sociological Association's code of ethics.
- Apply ethical principles to the challenges researchers encounter in conducting research.
- Describe the impact of feminist theory on sociological research practices.
- Summarize the benefits and challenges of conducting research online.
- Analyze through a sociological lens the challenges in conducting research on human sexual behavior and the potential impact of such research on social policy.

WHAT'S NEW IN CHAPTER 2

- Updated figures “Educational Level and Household Income in the United States,” “Impact of a College Education on Income,” “Women More Sexualized Than Men in Top Films of 2016,” “Changing Attitudes Toward the Legalization of Marijuana,” and “People Who Favor Legalization of Marijuana by Political Affiliation and Age.”
- Updated data in Box 2-1: Surveying Cell Phone Users.
- Added discussion on Big Brothers Big Sisters program and Fractured Family national survey to section on Data-Rich Future.
- Updated Thinking Critically questions in “In Summary: The Scientific Method,” “Value Neutrality,” and “The Data-Rich Future” sections.

CHAPTER SUMMARY

Sociologists have a commitment to the use of the **scientific method** in their research. The basic steps in the scientific method are defining the problem, reviewing the literature, formulating the hypothesis, selecting the research design, and collecting and analyzing the data. Finally, the researcher develops a conclusion based on the findings of the research.

An **operational definition** is an explanation of an abstract concept that allows a researcher to assess or measure the concept. For example, a sociologist interested in status might use membership in exclusive social clubs as an operational definition of status.

A review of the relevant literature helps to refine the problem, consider previous attempts to investigate it, and reduce avoidable mistakes.

A **hypothesis** is a speculative statement about the relationship between two or more variables. **Variables** are measurable traits or characteristics that are subject to change under certain conditions. The variable hypothesized to cause or influence another variable is called the **independent variable**.

The variable that is changed or dependent on the independent variable is called the **dependent variable**. **Causal logic** involves the relationship between a condition or variable and a particular consequence, with one leading to the other. A **correlation** exists when a change in one variable coincides with a change in the other. A correlational relationship does not necessarily indicate a causal relationship, however. **Control variables** are those factors that are held constant to test the strength of a relationship between the independent and dependent variables.

In most studies, social scientists carefully select a sample. A **sample** is a selection from a larger population that is statistically representative of the population. In a **random sample**, every member of the population being studied has the same chance of being selected for the study.

The scientific method requires both validity and reliability. **Validity** refers to the degree to which a measure or scale truly reflects the phenomenon under study. **Reliability** refers to the extent to which a measure produces consistent results.

In formulating a conclusion, sociological studies sometime fail to support the original hypothesis, and researchers must reformulate their conclusions.

A **research design** is a detailed plan or method for obtaining or collecting data. **Surveys** are a common method of **quantitative research** used by researchers to collect data. A quantitative method is one in which data are represented as numbers or statistics. Surveys may consist of oral **interviews** or written **questionnaires**. **Ethnography** is a **qualitative research** method that allows researchers to collect data through everyday interaction with a group or community under study. Observation is the basic technique of ethnography. Qualitative research involves smaller samples and different research methodologies. **Experiments** are artificially created situations in which researchers can manipulate variables. Typically, an experimental group is exposed to the independent variable (or “stimulus”) and the **control group** is not. Sometimes experiments can suffer from the **Hawthorne effect**, a term sociologists have used to refer to the unintended influence that observers of experiments can have on their subjects.

Analyzing existing data that have been previously collected is called **secondary analysis**. **Content analysis** involves the systematic coding and objective recording of data, such as using newspapers, periodicals, and other common documents or venues to interpret and test the significance of data.

All researchers must abide by a **code of ethics** to ensure that researchers are not causing harm or violating a person’s privacy. The American Sociological Association (ASA) is responsible for publishing a code of ethics for researchers in the field of sociology. Most researchers strive for **value neutrality** when interpreting their research results; however, some have suggested neutrality may be impossible to attain.

As the feminist perspective gains influence among sociological researchers, feminist methodology is changing both how issues are defined and how data are collected. Queer theory is also exposing some of the inherent sexuality bias in sociology that can lead to underreporting of gay and lesbian groups in a research process. Finally, computers and the massive increases in available data in today’s world have allowed sociologists to take on research that was nearly impossible a decade ago.

LECTURE OUTLINE

Introduction

- Excerpt from *The Tender Cut: Inside the Hidden World of Self-Injury* by Patricia A. Adler and Peter Adler.

I. Module 5: What Is the Scientific Method?

- A systematic, organized series of steps that ensures maximum objectivity and consistency in researching a problem.
- It is important to be able to distinguish between scientific and popular sources, as we are constantly bombarded with information and so-called “facts.”

A. Defining the Problem

- An operational definition is necessary to assess or measure a concept.
Example: A sociologist may use membership in exclusive social clubs as an operational definition of “status.”

B. Reviewing the Literature

- This process serves to refine the problem under study, clarify data collection techniques, and reduce avoidable mistakes.

C. Formulating the Hypothesis

- Hypothesis: a speculative statement about the relationship between two or more variables (a variable being a measurable trait or characteristic).
- Independent variables cause or influence change in dependent variables.
- Dependent variables are changed by the independent variables or are dependent on them.
- *Causal logic* refers to the relationship between a condition or variable and a particular consequence, with one event leading to the other. *Example:* Time spent studying may result in a higher grade on an exam.
- Correlation is only an indication that causality *may* be present. Other factors are necessary to determine causation.

D. Collecting and Analyzing Data

- Research designs guide researchers in collecting data.

1. Selecting the Sample

- Sample: a statistically representative selection from a larger population.
- Researchers collect samples because the population is too large to be studied.
- A random sample occurs when every member of an entire population has the same chance of being selected for the study.

2. Ensuring Validity and Reliability

- *Validity* refers to the degree to which a measure or scale accurately reflects the phenomenon under study.
- *Reliability* refers to the extent to which a measure produces consistent results.

E. Developing the Conclusion

- The conclusion represents both an end and a beginning in research.

1. Supporting Hypotheses

- Some studies refute a hypothesis, which leads to reformulations about a conclusion and adjustments in research designs.

2. Controlling for Other Factors

- A control variable is a factor held constant to test the relative impact of the independent variable. **Example:** If researchers wanted to know how adults in the United States feel about restrictions on smoking in public places, they would probably attempt to use a respondent's smoking behavior as a control variable.

F. In Summary: The Scientific Method

II. Module 6: Major Research Designs

- A detailed plan or method for obtaining data scientifically.

A. Surveys

- Surveys are generally in the form of an interview or questionnaire, providing researchers with information about how people think or act.
- The survey is an example of quantitative research, which collects and reports data primarily in numerical form. For a survey to be accurate, the researcher must develop a representative sample.
- With an interview, a researcher obtains information through face-to-face, telephone, or online questioning. With a questionnaire, the researcher uses a printed or written form to obtain information from a respondent.
- Survey questionnaires have the advantage over most other methods of being cheaper to administer. This is particularly true of web-based surveys, which can be quite valid.

B. Ethnography

- Qualitative research offers more depth and detail than quantitative analysis. This type of research relies on what is seen in field and naturalistic settings, and often focuses on small groups and communities. Ethnography is the most common form.
- Observation, or direct participation in closely watching a group or organization, is the basic technique of ethnography. **Example:** A researcher might observe gang life or homeless persons through a close study that may include personal interviews and research into the history of these groups.
- William F. Whyte's 1930s study, in which he moved into a low-income Italian neighborhood in Boston, is a classic example of participant observation research.

C. Experiments

- An experiment is an artificially created situation that allows a researcher to manipulate variables. In the classic method of conducting an experiment, an experimental group is exposed to an independent variable, and a control group is not.
- The *Hawthorne effect* refers to the tendency for subjects of research to deviate from typical behavior because they are under observation.

D. Use of Existing Sources

- *Secondary analysis* refers to making use of previously collected or publicly accessible information and data. **Example:** census data.

- Secondary analysis is nonreactive, since it does not influence people's behavior; thus, researchers can avoid the Hawthorne effect by using secondary analysis.

Example: Durkheim's research on suicide

- Content analysis is the systematic coding and objective recording of data.

Example: To assess children's awareness of the environment, sociologists conducted a content analysis of award-winning picture books over the past seventy years.

III. Module 7: Ethics of Research

- The American Sociological Association's *Code of Ethics* for sociologists was first published in 1971. It was most recently reviewed in 1997. Its principles include objectivity and integrity; privacy; protection from harm for subjects; confidentiality; informed consent; acknowledgement of collaboration and assistance; and disclosure of sources of financial support.

A. Confidentiality

- Rik Scarce was jailed for refusing to divulge what he knew about a 1991 raid on a university lab by animal rights activists.
- The Supreme Court has failed to clarify the rights of scholars preserving the confidentiality of research subjects.

B. Conflict of Interest

- When accepting funding for their research, sociologists must be careful that the funding source does not taint the objectivity of the research. **Example:** Exxon funded research on jury deliberations after the *Valdez* disaster.

C. Value Neutrality

- Weber argued that value neutrality must be employed in research. Some sociologists argue that true value neutrality in research may be impossible, but it should not be ignored.

IV. Module 8: Developments of Methodology

A. Feminist Methodology

- The feminist perspective has had an impact on sociological research, both in terms of methodology and in terms of substantive content. **Example:** Research is now being conducted on the integration of work and family, rather than viewing the two topics as unrelated.
- Recent feminist scholars have shown substantive interest in female self-injury and in drawing links between the role of women in developed and developing nations.
- Feminist theorists have called for more research into the issues surrounding women and immigration; domestic workers in less developed and industrial nations; and global sex trafficking.
- Feminist scholarship often employs a multidisciplinary approach to the research itself and its application.

B. Queer Theory and Methodology

- Queer theorists draw attention to the underreporting of gays and lesbians in the collection of research, often due to the nature in which the questions are asked (“veiled reporting”).
- Because it is a sensitive topic, researchers who want to generalize about *both* heterosexuals and homosexuals should be extremely careful in wording questions about respondents’ sexual orientation.

C. The Data-Rich Future

- Impact of computers and the massive increases in available data in today’s world
- United States’ prison population offers many avenues for research. **Example:** Big Brothers Big Sisters mentoring program and the Fractured Family national survey.

V. (Box) Social Policy and Sociological Research: Studying Human Sexuality

A. Looking at the Issue

- Human sexuality is a difficult topic to research due to privacy concerns as well as the myths, beliefs, and preconceptions people attach to the subject.

B. Applying Sociology

- There have been few reliable studies of patterns of sexual behavior in the United States. The sensitive nature of the subject makes it difficult to obtain accurate information, and until the AIDS crisis, there was little scientific demand for data on sexual behavior.
- Government funding for studies of sexual behavior is controversial.

C. Initiating Policy

- In 1987, the federal government’s National Institute of Child Health and Human Development sought research proposals for a national survey of sexual behavior. In 1991, however, the U.S. Senate voted to forbid funding any survey on adult sexual practices.
- Researchers secured private funding for the research to go forth with the National Health and Social Life Survey (NHSLS).
- Authors of the study contend their data will allow sociologists and policymakers to better address such issues as AIDS, sexual harassment, welfare reform, sex discrimination, abortion, teenage pregnancy, and family planning.
- The research findings countered conventional notions about abortion and birth control. **Example:** Researchers found that women do not regularly use abortion for birth control and that affluent women are more likely to have abortions than poor teens. Both of these findings challenge conventional wisdom and common sense about abortion.

KEY TERMS

- Applied sociology** The use of the discipline of sociology to yield practical applications for human behavior and organizations.
- Causal logic** The relationship between a condition or variable and a particular consequence, with one leading to the other.
- Code of ethics** The standards of acceptable behavior developed by and for members of a profession.
- Content analysis** The systematic coding and objective recording of data, guided by some rationale.
- Control group** The subjects in an experiment who are not introduced to the independent variable by the researcher.
- Control variable** A factor that is held constant to test the relative impact of an independent variable.
- Correlation** A relationship between two variables in which a change in one coincides with a change in the other.
- Cross-tabulation** A table or matrix that shows the relationship between two or more variables.
- Dependent variable** The variable in a causal relationship that is subject to the influence of another variable.
- Ethnography** The study of an entire social setting through extended systematic observation.
- Experiment** An artificially created situation that allows a researcher to manipulate variables.
- Experimental group** The subjects in an experiment who are exposed to an independent variable introduced by a researcher.
- Hawthorne effect** The unintended influence that observers or experiments can have on their subjects.
- Hypothesis** A speculative statement about the relationship between two or more variables.
- Independent variable** The variable in a causal relationship that causes or influences a change in a second variable.
- Interview** A face-to-face, phone, or online questioning of a respondent to obtain desired information.
- Mean** A number calculated by adding a series of values and then dividing by the number of values.
- Median** The midpoint or number that divides a series of values into two groups of equal numbers of values.
- Mode** The single most common value in a series of scores.
- Observation** A research technique in which an investigator collects information through direct participation, by closely watching a group or community.
- Operational definition** An explanation of an abstract concept that is specific enough to allow a researcher to assess the concept.
- Percentage** A portion of 100.
- Qualitative research** Research that relies on what is seen in field or naturalistic settings more than on statistical data.
- Quantitative research** Research that collects and reports data primarily in numerical form.
- Questionnaire** A printed or written form used to obtain information from a respondent.
- Random sample** A sample for which every member of an entire population has the same chance of being selected.
- Reliability** The extent to which a measure produces consistent results.
- Research design** A detailed plan or method for obtaining data scientifically.

Sample A selection from a larger population that is statistically representative of that population.

Scientific method A systematic, organized series of steps that ensures maximum objectivity and consistency in researching a problem.

Secondary analysis A variety of research techniques that make use of previously collected and publicly accessible information and data.

Survey A study, generally in the form of an interview or questionnaire, that provides researchers with information about how people think and act.

Validity The degree to which a measure or scale truly reflects the phenomenon under study.

Value neutrality Max Weber's term for objectivity of sociologists in the interpretation of data.

Variable A measurable trait or characteristic that is subject to change under different conditions.

Visual sociology The use of photographs, film, and video to study society.

ESSAY QUESTIONS

1. Identify and briefly explain the five basic steps in the scientific method.
2. Discuss the differences in qualitative and quantitative research processes.
3. Describe what is meant by the need to ensure that research results are both valid and reliable.
4. Provide the students with a research question and ask them to identify which research method would be best suited to studying it and to discuss why.
5. How is a sociological analysis of whether it pays to go to college different from a study of the same question conducted by a television station or magazine?
6. Distinguish among independent variables, dependent variables, causal logic, and correlations.
7. Explain why it is important to develop a representative sample when doing survey research and why some survey methods will not produce this kind of sample.
8. Why are control variables important in testing hypotheses?
9. Explain how sociological research methods would be useful in conducting a poll in Baghdad.
10. Identify and briefly describe the four different types of research designs for collecting data presented in the text.
11. Why is the wording of survey questions an important issue?
12. What are the advantages of interviews and questionnaires as forms of survey research?
13. What are the strengths and difficulties of the ethnographic method of research?
14. Which type of sociological research is considered to be more effective—qualitative or quantitative?
15. What conclusions can be drawn from William F. Whyte's participant observation research in a low-income neighborhood?
16. Explain the origin of the Hawthorne effect and its significance for researchers.
17. In what types of situations do researchers find secondary analysis useful?
18. What are the principles put forth by the American Sociological Association in its *Code of Ethics*?

19. How does the case of Rik Scarce show the importance of maintaining the confidentiality of sources in observation research?
20. Describe the ideal of *value neutrality* as developed by Max Weber.
21. Summarize the views of Joyce Ladner and Shulamit Reinharz with respect to value neutrality.
22. What impact has the feminist perspective had on global sociological research?
23. How has queer theory attempted to address the generalizations that may be inherent in research?
24. What are the ethical concerns of receiving funding from corporate sources?
25. What has been the impact of technology on sociological research?
26. Why is it important for sociologists to do studies of human sexuality?

CRITICAL THINKING QUESTIONS

1. Discuss why it is so difficult for sociologists to achieve true **value neutrality** in their research. Consider what kinds of research and experiments might impact researchers' capacity for value neutrality more than others.
2. Consider various ways in which you might try to disguise your identity in performing a participant observation study of street gangs, and whether or not it would be ethical to do so. Discuss the value of obtaining qualitative data compared to obtaining quantitative data.
3. Provide examples of any societal dangers that might occur when the results of poor research are publicized. Can you recall any recent instances of this?
4. Discuss how social research could provide assistance in fighting the war on terrorism. What type of research design would one employ to research terrorism?
5. Describe how social research could aid in the passage of laws or potentially prevent the enactment of poor laws.