# CHAPTER 2 SOCIOLOGICAL RESEARCH

## CHAPTER OUTLINE

***STEPS IN THE RESEARCH PROCESS***
*Defining the Problem*
*Reviewing the Literature*
*Formulating the Hypothesis*
*Collecting and Analyzing Data*
*Developing the Conclusion*
*In Summary: The Research Process*
***MAJOR RESEARCH DESIGNS***
*Surveys*
*Observation*
*Experiments*
*Use of Existing Sources*
***RESEARCH ETHICS***
*Confidentiality*
*Research Funding*
*Value Neutrality*
*Feminist Methodology*

## LEARNING OBJECTIVES

1. Outline and describe the steps in the scientific method.
2. Give an example of an operational definition.
3. Explain the relationship between hypotheses and variables.
4. Distinguish correlation from cause.
5. Summarize the characteristics, advantages, and limitations of the major research designs.
6. List the basic principles of the American Sociological Association's code of ethics.
7. Apply ethical principles to the challenges researchers encounter in conducting research.

8. Describe the impact of feminist theory on sociological research practices.

## CHAPTER SUMMARY

Sociologists are committed to the use of the ***scientific method*** in their research. The basic steps in the scientific method are: (1) defining the problem, (2) reviewing the literature, (3) formulating the hypothesis, (4) selecting the research design and then collecting and analyzing the data, and (5) developing a conclusion based on the findings of the research.

When defining the problem, an ***operational definition*** transforms an abstract concept into indicators that are observable and measurable, allowing researchers to assess the concept. A review of the literature concerning the problem under study helps refine the problem under study, clarify possible techniques for collecting data, and eliminate or reduce avoidable mistakes. A ***hypothesis*** is a testable statement about the relationship between two or more factors known as variables. ***Variables*** are measurable traits or characteristics that are subject to change under different conditions. ***Causal logic*** is the relationship between a variable and a particular event. The variable that brings about change is called the ***independent variable***. The variable that is affected is called the ***dependent variable***. A ***correlation*** is a relationship between two variables in which a change in one coincides with a change in the other. Just because variables change in a way that appears related does not mean that the relationship is necessarily causal.

To assess a hypothesis, sociologists must collect data. 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. The key when assessing results is to ensure that the conclusions are supported by the data. If a sociological study fails to support the original hypothesis, researchers must reformulate their conclusions. ***Control variables*** are factors that are held constant to test the relative impact of an independent variable.

A ***research design*** is a detailed plan or method for obtaining data scientifically. ***Surveys*** are a common method of ***quantitative research*** (research collected primarily in numerical form) used by researchers to collect data. Surveys may consist of oral ***interviews*** or written ***questionnaires***. ***Observation*** is a ***qualitative research*** method, meaning it relies on what is seen in the field in natural setting rather than statistical data. It allows researchers to collect data through direct participation and/or by closely watching a group or community. ***Ethnography***, the study of an entire social setting through extended systematic observation, is an increasingly popular form of qualitative research. ***Experiments*** are artificially created situations that allow researchers to manipulate variables. Typically, an ***experimental group*** is exposed to the independent variable and the ***control group*** is not. When conducting an experiment one must be aware of the ***Hawthorne effect***—the possibility that observers of experiments will have unintended influence on their subjects. Analyzing existing data that has been previously collected is called ***secondary***

***analysis***. ***Content analysis*** involves the systematic coding and objective recording of data, such as newspapers, periodicals, the Internet, scripts, diaries, songs, and folklore, to interpret and test the significance of data.

Sociologists must abide by certain specific standards in conducting research, called a ***code of ethics***. The core principles of the American Sociological Association's code of ethics are: professional competence, integrity, professional and scientific responsibility, respect for people's rights, and social responsibility. It is also important that sociologists protect the confidentiality of those they study, and that they disclose the sources of all their funding. Max Weber argued that researchers should use ***value neutrality*** in their research and be objective in the interpretation of data. Sociologists using the feminist perspective have had perhaps the greatest impact on the current generation of social researchers. Feminist theorists reject the notion that work and family are separate spheres, and have drawn attention to researchers' tendency to overlook women in sociological studies.

| FOCUS QUESTIONS | KEY TERMS |
|---|---|
| 1. What is the scientific method? | scientific method, operational definition, hypothesis, variable, causal logic, independent variable, dependent variable, correlation, sample, random sample, validity, reliability, control variable |
| 2. What are the major research designs in sociological research? | research design, survey, interview, questionnaire, quantitative research, mean, median, mode, qualitative research, observation, ethnography, experiment, experimental group, control group, Hawthorne effect, secondary analysis, content analysis |
| 3. What are the key ethical issues in sociological research? | code of ethics, value neutrality |

## LECTURE OUTLINE

### I. Steps in the Research Process

• The ***scientific method*** is a systematic, organized series of steps that ensures maximum objectivity and consistency in researching a problem.
• Conducting sociological research in the spirit of the scientific method requires adherence to a series of steps designed to ensure the accuracy of the results.

#### A. Defining the Problem

• The first step is to state as clearly as possible what you hope to investigate.

#### B. Reviewing the Literature

• Refines the problem under study, clarifies data collection techniques, and eliminates or reduces avoidable mistakes.

## C. Formulating the Hypothesis

• After defining and refining the problem, the next step is to identify the specific ***variables*** to be studied—measurable traits or characteristics that are subject to change under different conditions.
• This often involves creating an ***operational definition***, which means finding observable and measurable indicators of the abstract concepts to be studied.
***Example:*** Using income as an operational definition of social inequality.
• After the variables have been operationalized, you can form a ***hypothesis***, a testable statement about the relationship between two or more variables.
• A hypothesis should display ***causal logic***, indicating that a relationship exists between the variables such that a change in one brings about change in the other.
***Example:*** Durkheim hypothesized that a cause-and-effect relationship existed between religious affiliation and suicide rates.
• ***Independent variables*** are the variables in a causal relationship that influence a change in a second variable.
• ***Dependent variables*** are changed by the independent variables or are dependent on them.
• ***Correlation*** is a relationship between two variables in which a change in one coincides with a change in the other. Correlation does not equal causation. Sociologists seek to identify the causal link between variables; the suspected causal link is generally described in the hypothesis.

## D. Collecting and Analyzing Data

• Like other scientists, sociologists are committed to gathering empirical data that can be observed and measured. Regardless of their research design, they all face certain issues.

### 1. Selecting the Sample

• A ***sample*** is a statistically representative selection from a larger population.
• A ***random sample*** is a sample for which every member of an entire population has the same chance of being selected.

### 2. Ensuring 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.

## E. Developing the Conclusion

• After conducting research, sociologists assess the results. The key is to ensure that their conclusions are fully supported by their data.

### 1. Supporting Hypotheses

• Some studies refute a hypothesis, and researchers must reformulate their conclusions and adjust their research designs.

#### 2. Controlling for Other Factors

• When studying human behavior, it is seldom sufficient to study only one independent and dependent variable.
• A ***control variable*** is a factor held constant to test the relative impact of the independent variable. ***Example:*** When studying the effect education (independent variable) has on income (dependent variable), including family background as a control variable.

### F. In Summary: The Research Process

• Research is cyclical: the studies researchers produce become part of the literature review for the next project.

## II. Major Research Designs

• A ***research design*** is a detailed plan or method for obtaining data scientifically.
• The choice of design directly influences the cost of the project and the time needed to collect the data.
• Four types of designs are commonly used by sociologists.

### A. Surveys

• Studies, generally in the form of an interview or questionnaire, that provide researchers with information about how people think and act. ***Example:*** Gallup polls.

#### 1. Issues in Designing Surveys

• A survey must be based on precise, representative sampling to genuinely reflect a broad range of the population.
• Questions must be worded carefully.
• The characteristics of the interviewer (e.g., gender and race) have an impact on survey data.

#### 2. Types of Surveys

• There are two main forms of the survey.
• In an ***interview*** the researcher obtains information through face-to-face or telephone questioning.
• In a ***questionnaire*** the researcher uses a printed, written, or computerized form to obtain information.
• Skillful interviewers can go beyond written questions and probe a subject's underlying feelings; questionnaires have the advantage of being cheaper to administer.

#### 3. Quantitative and Qualitative Research

• Most surveys are examples of ***quantitative research***, which collects and reports data primarily in numerical form. Analysis of these data depends upon statistics.
• For example, the ***mean*** is the arithmetical average of a set of numbers. The ***median*** is the number that divides a set of values into two groups of equal numbers of values, and is useful in situations where there are extreme scores that distort the mean. The ***mode*** is the single most common value in a series of scores; it is seldom used in sociological research.
• In ***qualitative research***, researchers rely on what they see in the field and naturalistic settings more than on statistical data, often focusing on small groups and communities. Observation is the most common form of qualitative research.

**B. Observation**

• Investigators collect information by participating directly and/or by closely watching a group or community.
• ***Ethnography*** is the study of an entire social setting through extended systematic observation. ***Example:*** Alice Goffman spent years living in a poor, predominantly African American neighborhood and observed how young African American males were treated by authorities.
• Challenges are: gaining acceptance and maintaining some degree of detachment.

**C. Experiments**

• Artificially created situations that allow researchers to manipulate variables. Typically involve use of an ***experimental group*** exposed to an independent variable, and a ***control group***, which is not exposed to the independent variable.
• A disadvantage of experiments is known as the ***Hawthorne effect***, which refers to the unintended influence that observers of experiments can have on their subjects.
• Sociologists sometimes try to approximate experimental conditions in the field. ***Example:*** Devah Pager's experiment to assess the impact of a criminal background on individuals' employment opportunities.

**D. Use of Existing Sources**

• ***Secondary analysis*** refers to a variety of research techniques that make use of previously collected and publicly accessible information and data. ***Example:*** Census data.
• Existing data is nonreactive, studying 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, guided by some rationale. ***Example:*** Jeanne Kilbourne's content analysis of ads demonstrating that women are commonly portrayed as objects.

## III. Research Ethics

• A ***code of ethics*** is a set of standards of acceptable behavior developed by and for members of a profession.
• The general principles of the American Sociological Association's *Code of Ethics* are: (1) Use appropriate research techniques, (2) Be honest, respectful, and fair, (3) Adhere to the highest scientific and professional standards, (4) Be unbiased and non-discriminatory, respecting the dignity and worth of all people, (5) Contribute to the public good.

### A. Confidentiality

• Protecting the confidentiality of research subjects is a key aspect of research ethics.
• 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 to preserve the confidentiality of research subjects.

### B. Research Funding

• When accepting funding for their research, sociologists must be careful that the funding source does not influence research findings. ***Example:*** Exxon funded research on jury deliberations after the *Valdez* disaster.
• Researchers must disclose the sources of their funding.

### C. Value Neutrality

• Max Weber argued that researchers should not allow their personal feelings to influence the interpretation of data.
• Investigators have an ethical obligation to accept research findings even when the data run counter to their own personal views, to theoretically based explanations, or to widely accepted beliefs.
• Sociologists must work to overcome any biases, however unintentional, that they may bring to their analysis of research.

### D. Feminist Methodology

• Sociologists using the feminist perspective have had perhaps the greatest impact on the current generation of social researchers.
• Feminist theorists reject the notion that work and family are separate spheres, have drawn attention to researchers' tendency to overlook women in sociological studies, and have contributed to a greater global awareness within sociology.
• Feminist researchers tend to involve and consult their subjects more than other researchers, thus contributing to a significant increase in more qualitative and participatory research.
• They are also more oriented toward seeking change, raising the public consciousness, and influencing policy, representing a return to sociology's roots.

## KEY TERMS

**Causal logic** A relationship exists between variables in which change in one brings about change in 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.
**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 of experiments can have on their subjects.
**Hypothesis** A testable 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 or telephone 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 and/or by closely watching a group or community.
**Operational definition** Transformation of an abstract concept into indicators that are observable and measurable.
**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, written, or computerized 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.

## ADDITIONAL LECTURE IDEAS

### *2-1: How Would You Obtain a Representative Sample?*

Students and their instructors have typically been saturated with telephone and shopping mall surveys. But do students know why they have been selected, and whether their selection is part of a representative sample? Suggest to the class that they have been given the responsibility of developing a representative sample in their school's county that will be asking questions about a controversial subject (e.g., abortion rights, capital punishment, or gun control). How would they go about selecting a representative sample of county residents for this study? Student responses will tend to gravitate toward the following: shopping malls, telephone interviews, birth certificates, tax reports, grocery stores, bus depots, their college, and other suggestions that will not generate a representative sample. Each response should be met with an explanation of why the suggestion is not representative.

Students will generally suggest that members of the sample population should be selected based on their characteristics, which is a good place to introduce a discussion of variables and quota samples and the weaknesses of this type of sample. Finally, the students should be asked, "If I were trying to select a random sample of this class, a sample in which every member of the class has the same chance of being selected, how could I do this?" Almost immediately, students will suggest placing names into a hat and pulling out one or more names at random. At that point, students can be led through a discussion of how the "hat selection" process can be used for a large population in order that everyone in the county has a chance to have their names "pulled out of a hat."

See Earl Babbie. *The Practice of Social Research*, 10th ed. Belmont, CA: Wadsworth, 2003. See also Peter Rossi et al. *Handbook of Survey Research*. New York: Basic Books, 1983; and Morton M. Hunt. *Profiles of Social Research: The Scientific Study of Human Interactions*. New York: Russell Sage, 1986.

### *2-2: Asking the Correct Questions*

Sociologists try to phrase questions carefully so that there will be no misunderstanding on the part of the respondents. If a question is improperly worded (or biased), the results are useless for the researchers.

| Poor Question | Problem | Better Question |
|---|---|---|
| Do you favor urban homesteading? | People may not understand the question. | Do you favor a government program that encourages families to improve inner city housing? |
| Did your mother ever work? | Misleading. | Did your mother ever work for pay outside the home? |
| Should it be possible for a | Too general. | Should it be possible for a |

| | | |
|---|---|---|
| woman to obtain a legal abortion? | | woman to obtain a legal abortion if there is a strong chance of serious defect in her baby? If she became pregnant as a result of rape? |
| Do you favor making it legal for 18-year-olds to drink liquor and smoke marijuana? | Double-barreled (two questions in one). | Do you favor making it legal for 18-year-olds to drink liquor? Do you favor making it legal for 18-year-olds to smoke marijuana? |
| Don't you think that the press is slanted and that we should distrust whatever it says? | Biased question; leads people toward a particular response. | Would you say that you have a great deal of confidence, some, or very little confidence in the press? |

### *2-3: Framing Survey Questions about Interracial Relationships*

Do White people really have close Black friends, and vice versa? Many surveys have attempted to gauge the amount of White–Black interaction. But unless the questions are phrased carefully, it is possible to overestimate just how much "racial togetherness" is taking place.

Sociologist Tom Smith, who heads up the respected General Social Survey, noticed that a high proportion of Whites and African Americans indicate they have close friends of the other race. But is this, in fact, true? When Smith and his fellow researchers analyzed data from the 1998 General Social Survey they found that response rates varied according to how the question was phrased.

For example, when asked whether any of their friends that they feel close to was Black, 42.1 percent of Whites said "yes." Yet when asked to give the names of friends they feel close to, only 6 percent of Whites listed a close friend of a different race or ethnicity.

### *2-4: The Personal Implications of Ethnographic Research*

Ethnography is one of the most fascinating methods of data collection open to social scientists—so much so that it is worthy of sociological analysis itself. For one, ethnography requires an unusually long and intense period of observation, interviewing, and participation. It is also a method of study that involves an inherent dialogue between researcher and subject. In contrast to a survey or an experiment, those under observation in an ethnographic study can always "talk back" in ways that are unexpected for the researcher, thereby changing the scope and content of the research project as it moves along. For most practitioners, an ethnographic study also requires a long period in which the ethnographer is removed from familiar social settings, and is immersed in a very different culture or subculture. Often, one unintended consequence is that the ethnographer finds himself or herself personally changed by the research process. In contemporary ethnographies, it is now common for one or more chapters to reflect upon these personal implications of ethnographic work.

*Crafting Selves* is Dorinne K. Kondo's ethnography of a Tokyo confectionary. Kondo, a Japanese-American with native fluency in Japanese, was often able to pass as Japanese. Because of her ethnicity and language abilities, she also found that her research subjects increasingly held

her to the behavioral expectations of a young Japanese woman, rather than an American ethnographer. As a result, Kondo gradually found herself possessing two distinct "selves": the "American self" and the "Japanese self," with the Japanese self becoming increasingly dominant. This process came to a head one day when Kondo unexpectedly saw her reflection in a mirrored surface, but failed for a moment to realize that she was seeing herself rather than an unknown Japanese woman. In this moment, Kondo felt that her American identity had collapsed completely, and that her Japanese identity had taken over in its absence. Shaken, she realized that it would be necessary in the coming months to extricate herself somewhat from the environment into which she had so fully immersed herself (Kondo 1990).

In many cases, the ethnographer not only reports on the personal impact of ethnographic fieldwork, but also uses the experience to better analyze the social context under study. One of the most well known examples is in the work of Renato Rosaldo. While Rosaldo and his wife were studying the Ilongot people of the Philippines, Rosaldo's wife, Michelle Zimbalist Rosaldo, accidentally fell from a cliff to her death. In his essay "Grief and a Headhunter's Rage," Rosaldo describes how the immense grief he experienced gave him new insight into the emotional motivations for headhunting among the Ilongot (Rosaldo 1989).

Such "vulnerable writing"—in which the ethnographer explicitly incorporates personal experiences into his or her work—can also lead to a new level of understanding for the reader of that ethnography, according to Ruth Behar (1996). When Behar wrote a book in which she compared the life of a Mexican peddler to her own experience in the academic tenure process, several readers wrote to tell her that they found the comparison to be a vital element of the book. It had allowed them to identify better with the peddler's experiences.

Not surprisingly, there is growing interest among ethnographers—especially anthropologists—in a type of ethnography called autoethnography. While this term has been defined in a number of different ways, *autoethnography* can refer to a type of ethnographic text in which the writer explicitly addresses his or her own personal identity and history, and how it is linked to his or her work as an ethnographer (Reed-Danahay 1997).

Sources used for this essay and additional reading ideas include: Ruth Behar. *The Vulnerable Observer*. Boston: Beacon Press, 1996; Dorinne K. Kondo. *Crafting Selves: Power, Gender, and Discourses of Identity in a Japanese Workplace*. Chicago: University of Chicago Press, 1990; Annette Lareau and Jeffrey Schultz. *Journeys through Ethnography*. Boulder: Westview, 1996; Deborah E. Reed-Danahay (ed.). *Auto/Ethnography: Rewriting the Self and the Social*. New York: Berg, 1997; Renato Rosaldo, "Grief and a Headhunter's Rage" in *Culture and Truth: The Remaking of Social Analysis*. Boston: Beacon Press, 1989, pp. 1–21.

### *2-5: Content Analysis of Coverage of the Rodney King Beating*

Sociologist Ronald N. Jacobs examined media coverage following the severe beating of an African-American motorist, Rodney King, by members of the California Highway Patrol and the Los Angeles Police Department (LAPD) on March 3, 1991. Unknown to the police officers, the event was videotaped by an amateur cameraman who subsequently sold the tape to a local television station. Interest in the incident diminished about a month after the release of the Christopher Commission report on July 9, 1991, but exploded again in April 1992 with the return of not-guilty verdicts for the four police officers who were indicted for the beating. By the end of the crisis, Police Chief Daryl Gates had resigned, Mayor Tom Bradley had decided not to run for

reelection (for the first time in 23 years), and the city of Los Angeles had experienced the most costly civil disturbance, or riot, in the nation's history.

In order to analyze the discourse concerning the Rodney King case, Jacobs examined all articles appearing between March and September 1991 in the daily *Los Angles Times* (357 articles) and the weekly *Los Angeles Sentinel* (137 articles). The *Sentinel* is the largest African-American newspaper in terms of circulation in Los Angeles, while the *Times* has by far the largest circulation of any newspaper in the region. Both papers presented a similar narrative or construction of the events. They showed a "drama of redemption," pitting the heroic acts of local government (the mayor and the city council) against the antiheroic ones (Gates and the LAPD). The *Sentinel*, however, typically posited members of the Black community as heroic actors, while championing democratic ideals. Employing a style common to the African-American press, the newspaper invoked the ideals of American society while criticizing that society as it actually exists.

The Christopher Commission was very critical of the LAPD and particularly critical of Police Chief Gates. Both newspapers spoke in positive terms of the Commission's work and its conclusions. The *Los Angeles Times* saw the commission as giving the community and various government units an opportunity to come together and learn from the tragic events. The *Sentinel* expressed similar sentiments, but did not construct its version as a bridge toward legitimization of local government leaders. The *Sentinel* saw the concerns over police brutality as a justification for the long-standing criticisms of law enforcement made by the African-American community.

Émile Durkheim has spoken of the "collective conscious" of a society. However, analysis of the discourse concerning the 1991 King beating reveals that the incident was socially constructed as several different problems in several different public spheres. On the basis of content analysis of the *Los Angeles Times* coverage, the *Times* constructed the issue as a problem of police brutality, of factionalism, and of political divisiveness. In the *Los Angeles Sentinel*, the incident was constructed as a problem of police brutality, of insincerity on the part of Whites, and of the need for African-American empowerment. The *Times* saw the beating as the beginning of a crisis, while the *Sentinel* saw it as part of an ongoing narrative about civil rights and police brutality. This content analysis of the two newspapers' perspectives appears to support Stephen Hilgartner and Charles Bosk's "public arenas" model of social problems, which argues that problems can be viewed differently and recognizes multiple public spheres for debating such issues.

See Stephen Hilgartner and Charles Bosk, "The Rise and Fall of Social Problems: A Public Arenas Model," *American Journal of Sociology* 94 (July 1988): 53–78; Ronald N. Jacobs, "Civil Society and Crisis: Culture, Discourse, and the Rodney King Beating," *American Journal of Sociology* 101(March 1996):1,238–1,272.

### *2-6: Useful Statistics*

In their effort to understand social behavior better, sociologists rely heavily on numbers and statistics. How large is the typical household today compared with the typical household of 1970? If a community were to introduce drug education into its elementary schools, what would be the cost per pupil? What proportion of Baptists, compared to that of Roman Catholics, contributes to their local churches? Such questions, and many others, are most easily answered in numerical terms that summarize the actions or attitudes of many persons.

The most common summary measures used by sociologists are percentages, means, modes, and medians. A *percentage* shows the portion of 100. Use of percentages allows us to compare groups of different sizes. For example, if we were comparing contributors to a town's Baptist and Roman Catholic churches, the absolute numbers of contributors from each group could be misleading if there were many more Baptists than Catholics living in the town. However, percentages would give us a more meaningful comparison, showing the proportion of persons in each group who contribute to churches.

The *mean*, or *average*, is a number calculated by adding a series of values and then dividing by the number of values. For example, to find the mean of the numbers 5, 19, and 27, we add them together for a total of 51. We then divide by the number of values (3), and discover that the mean is 17.

The *mode* is the single most common value in a series of scores. Suppose we are looking at the following scores on a 10-point quiz:

10 10 9 9 8 8 7 7 7 6 6

The *mode*—the most frequent score on the quiz—is 7. While the mode is easier to identify than other summary measures, it tells sociologists little about all the other values. Therefore, we use it much less frequently in this book than we do the mean and median.

The *median* is the midpoint, or number that divides a series of values into two groups of equal numbers of values. For the quiz discussed above, the median, or central value, is 8. The mean would be 86 (the sum of all scores) divided by 11 (the total number of scores), or 7.8.

According to the Census Bureau, the U.S. median family income for the year 2012 was $51,017; this indicates that half of all families had incomes above $51,017, while the other half had lower incomes. In many respects, the median is the most characteristic value. Although it may not reflect the full range of scores, it does approximate the value in a set of scores. Also, it is not affected by extreme scores.

Some of these statistics may seem confusing at first. But think about how difficult it is to study an endless list of numbers in order to identify a pattern or central tendency. Percentages, means, modes, and medians are essential time savers in sociological research and analysis.

## TOPICS FOR STUDENT RESEARCH AND CLASSROOM DISCUSSION

1. Ask students to provide an operational definition of an abstract notion, such as the influence of poverty on crime. Students can also provide a hypothesis statement concerning the nature of any relationship.

2. Ask students to bring a mail-back survey (from a product recently purchased) into class, and have students discuss what the researchers may be trying to measure or ascertain from the survey.

3. Ask students to examine a mail-back survey form for any indications of misleading, double-barreled, or biased questions, and discuss how the questions could be revised to avoid these problems.

4. Ask students to replicate a small-scale study similar to that of Erving Goffman in which students explore newspapers and magazines for evidence of women being portrayed as subservient to men. Discuss the impact of such research on social policy.

5. Ask students to discuss why policy makers and corporations may intentionally refute some research findings revealed by sociologists, or attempt to cover up research findings.

## REEL TALK

*Super Size Me* (IDP Distribution, 2004, 96m). For 30 days, Morgan Spurlock ate only at McDonald's three times a day. The film documents the drastic effects this had on his physical and mental health. It also shows how the fast-food industry encourages poor nutrition for its own profit. Director: Morgan Spurlock.
Topic: Sociological research.

**Discussion Questions**

1. Discuss how this movie follows the steps in the research process detailed in the text.
2. Discuss how Spurlock's method of using himself as the main character—and main research subject—could violate some of the research ethics discussed in the text. Do you agree or disagree with his approach? Why or why not?

**Multiple-Choice Questions**

1. Which of the following occurred after the movie was released?
   a. It took 14 months for Spurlock to lose the weight he gained.
   b. McDonald's discontinued the Super Size option.
   c. McDonald's added healthier items, like salads, to its restaurant menus.
   *d. all of the above

2. Which of the following did Spurlock use in his documentary?
   a. interviews
   b. questionnaires
   c. experiments
   *d. both a and c

3. Which of the following types of research did Spurlock use?
   a. quantitative
   b. qualitative
   c. observation
   *d. both b and c

## ESSAY QUESTIONS

1. Identify and briefly explain the five basic steps in the scientific method.
2. How is a sociological analysis of whether it pays to go to college different from a study conducted by a television station or magazine?
3. Distinguish among independent variables, dependent variables, causal logic, and correlations.
4. Explain why surveys conducted by radio and television stations, in which viewers and listeners are encouraged to call or text to give their views, do not use a representative sample.
5. Explain the difference between validity and reliability.
6. Why are control variables useful in testing hypotheses?
7. Identify and briefly describe the four different types of research designs for collecting data presented in the text.
8. Why is the framing of survey questions an important issue?
9. What are the advantages of interviews and questionnaires as forms of survey research?
10. What are the strengths and difficulties of the observation method of research?
11. Which type of sociological research is considered to be better, qualitative or quantitative?
12. What conclusions can be drawn from Alice Goffman's participant observation research in a low-income, African American neighborhood?
13. Explain the origin of the Hawthorne effect and its significance for researchers.
14. In what types of situations do researchers find secondary analysis useful?
15. What are the principles put forth by the American Sociological Association in its *Code of Ethics*?
16. How does the research by Rik Scarce show the importance of maintaining the confidentiality of sources in observation research?
17. Describe the ideal of *value neutrality* as developed by Max Weber.
18. Summarize the views of Joyce Ladner and Shulamit Reinharz with respect to value neutrality.
19. What are the ethical concerns of receiving funding from corporate sources?

## CRITICAL THINKING QUESTIONS

1. Discuss how social research may affect the quality of human life. Include an explanation of how dispelling social myths could be considered by some critics as a threat to social order.

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 and potentially prevent the enactment of poor laws.

# Chapter 2—Sociological Research

# SOC 2016

Jon Witt

# What's to Come?

- Steps in the Research Process
- Major Research Designs
- Research Ethics

# As You Read >>

- What steps do sociologists take when seeking to answer why people think and act the way they do?
- What techniques do sociologists use to collect data?
- What ethical concerns must sociologists consider while conducting research?

- **Scientific method** Systematic, organized series of steps that ensures maximum objectivity and consistency in researching a problem
  - Requires adherence to series of steps designed to ensure accurate results
    - Defining the problem
    - Reviewing the literature
    - Formulating the hypothesis
    - Selecting the research design and collecting and analyzing data
    - Developing the conclusion

# The Scientific Method

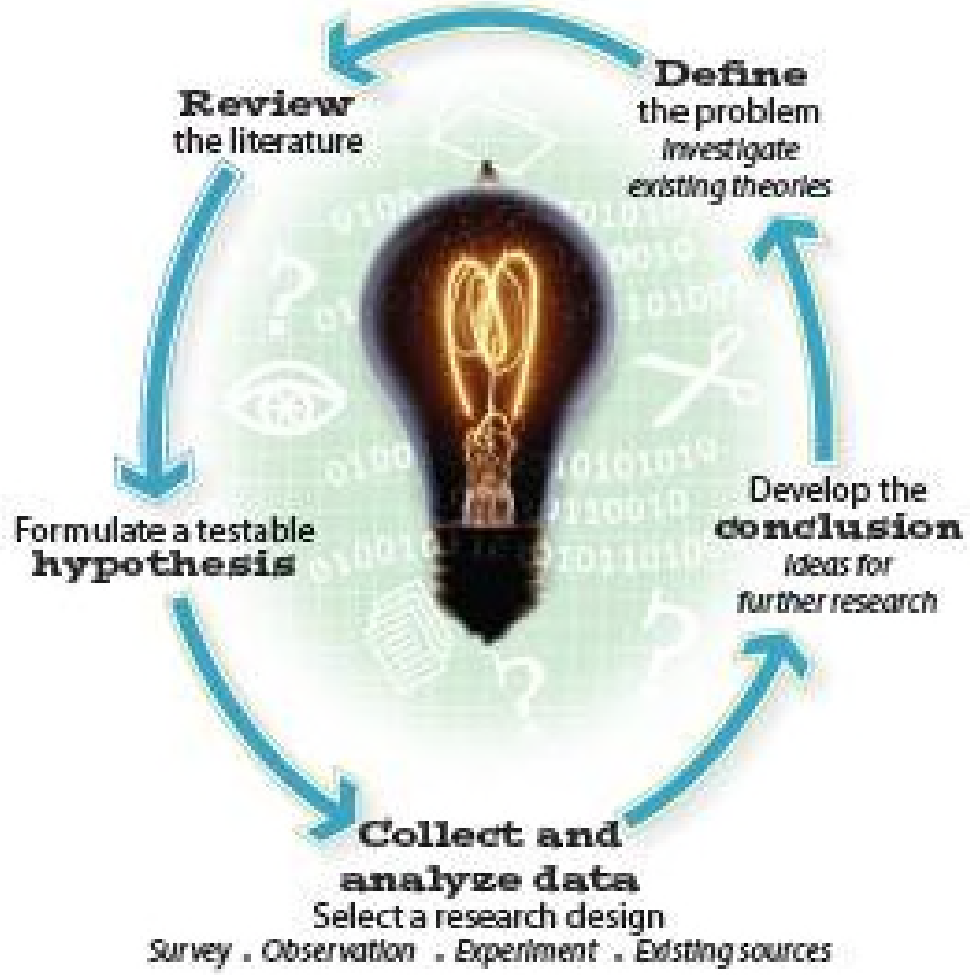



*Photo: © Photodisc/Getty RF*

## Steps in the Research Process

- Defining the Problem
  - Explicitly identifying the concepts one is interested in learning more about and nature of relationship that one feels might exist between them
- Reviewing the Literature
  - Refines the problem under study, clarifies data collection techniques, eliminates or reduces avoidable mistakes

# Finding Information

**Begin** with material you already have, including this text and others.

**Beware** of using online sources such as Wikipedia; they can be a helpful place to start, but always double-check claims with a reputable source or organization.

**Use** books, newspapers, magazines, and journals.

**Search** using the library catalog and computerized periodical indexes to find related academic journal articles.

**Examine** government documents (including the U.S. Census).

**Contact** people, organizations, and agencies related to your topic.

**Consult** with your instructor, teaching assistant, or reference librarian.

*Photo:* © Jose Luis Pelaez Inc/Blend Images RF.

# Formulating the Hypothesis

- **Variable** Measurable trait or characteristic that is subject to change under different conditions
- **Operational Definition** Transformation of an abstract concept into indicators that are observable and measurable
- **Hypothesis** Testable statement about the relationship between two or more variables

# Formulating the Hypothesis

- **Causal Logic** Relationship between variables exists such that change in one leads to change in the other
- **Independent Variable** Variable in a causal relationship that causes or influences a change in a second variable
- **Dependent Variable** Variable in a causal relationship that is subject to the influence of another variable

# Causal Logic

| Independent variable $x$ | | Dependent variable $y$ |
|---|---|---|
| Level of educational degree | → | Level of income |
| Degree of integration into society | → | Likelihood of suicide |
| Availability of affordable housing | → | Level of homelessness |
| Parents' church attendance | → | Children's church attendance |
| Time spent preparing for quiz | → | Performance on quiz |
| Parents' income | → | Likelihood of children's enrolling in college |

*Photo:* © Image Source/Getty Images RF.

# Formulating the Hypothesis

- **Correlation** Relationship between two variables in which a change in one coincides with a change in the other
  - Correlation does not necessarily indicate causation.

# Collecting and Analyzing the Data

## Selecting the Sample

- **Sample** Selection from larger population that is statistically representative of that population
- **Random Sample** Sample for which every member of an entire population has the same chance of being selected
- It is easy to confuse the careful scientific techniques used in representative sampling with the many nonscientific polls that receive media attention.

# Collecting and Analyzing the Data

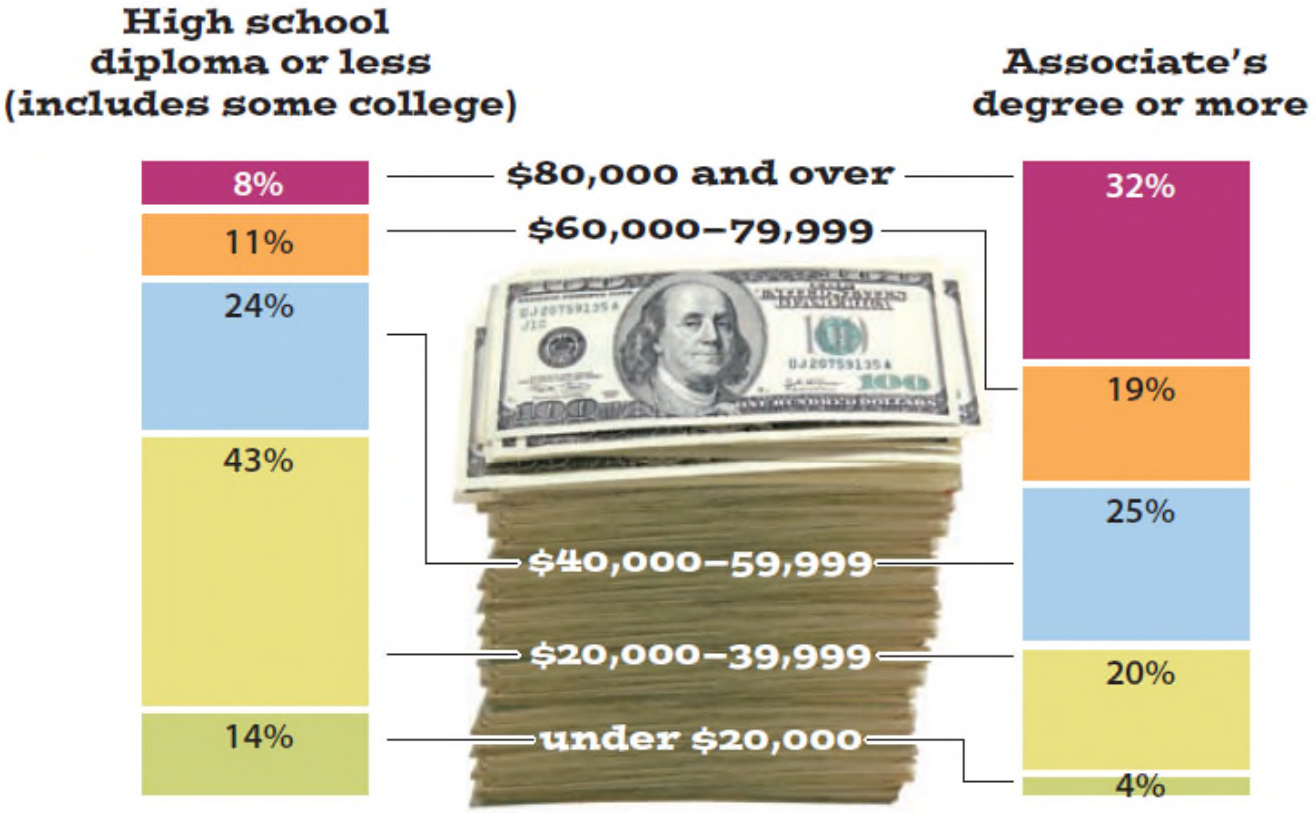
## Ensuring Validity and Reliability

- **Validity** Degree to which a measure or scale truly reflects the phenomenon under study
- **Reliability** Extent to which a measure produces consistent results

# Developing the Conclusion

- Supporting Hypotheses
  - Sociological studies do not always generate data that support original hypothesis.
  - When results are somewhat like a hypothesis predicts, but not entirely, it can help to consider the effects of other variables.
- Controlling for Other Factors
  - **Control Variable** Factor held constant to test the relative impact of an independent variable

# Impact of a College Degree on Income

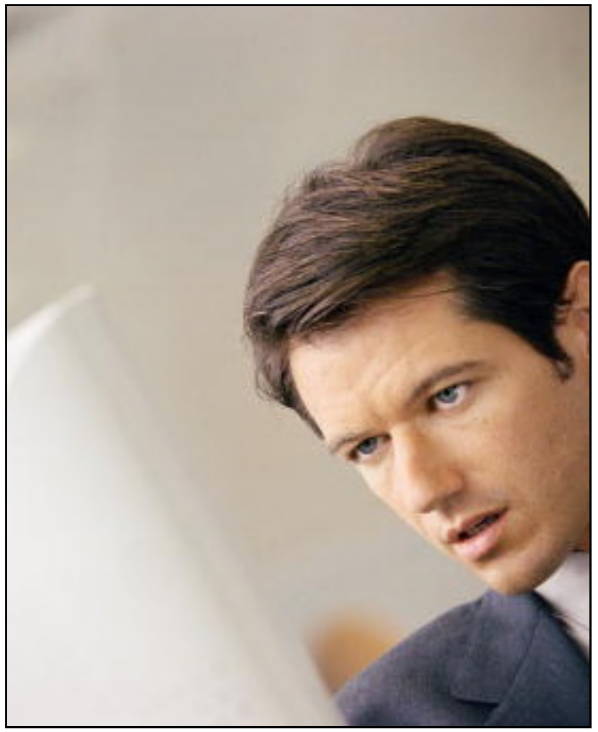



*Note:* Data are from 2013 and include those aged 25–64 working full-time, year-round. High school category includes those with some college but no degree.

*Source:* U.S. Census Bureau 2014a:Table PINC-03.

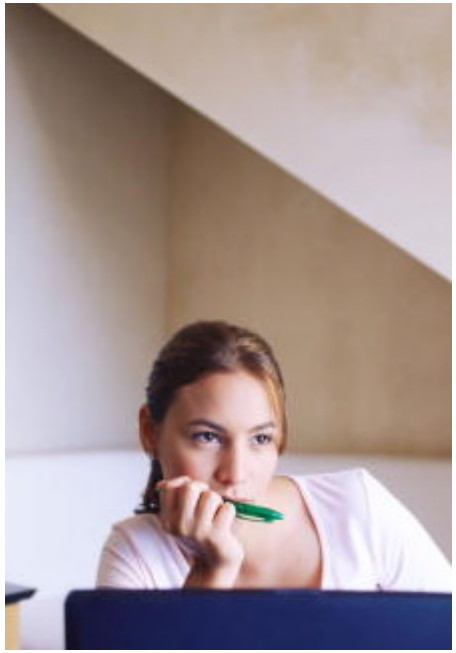
# In Summary: The Research Process

- Sociologists share their findings so others can learn from them and spot errors.
- Research is cyclical in nature.
- Studies researchers produce become part of the literature reviewed for new projects.



# Research Design

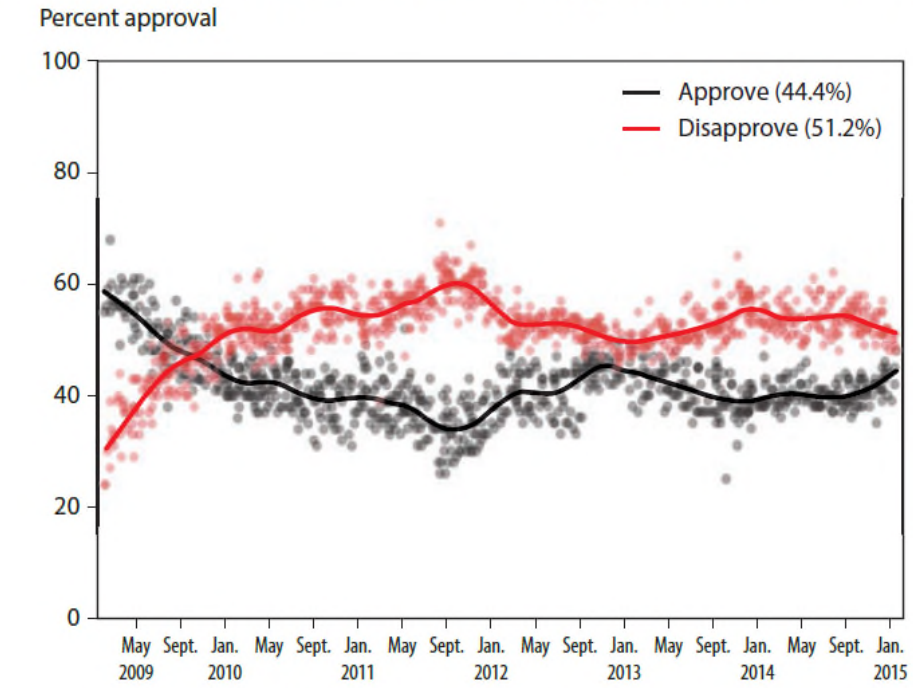
Detailed plan or method
for obtaining data scientifically



- Surveys
- Observation
- Experiments
- Existing sources

- **Survey** A study, generally in the form of an interview or questionnaire, that provides researchers with information about how people think and act
- Issues in Designing Surveys
  - Researchers must develop representative samples.
  - Researchers must exercise great care in wording of questions
  - The characteristics of the interviewer impact survey data

# President Obama's Approval Ratings



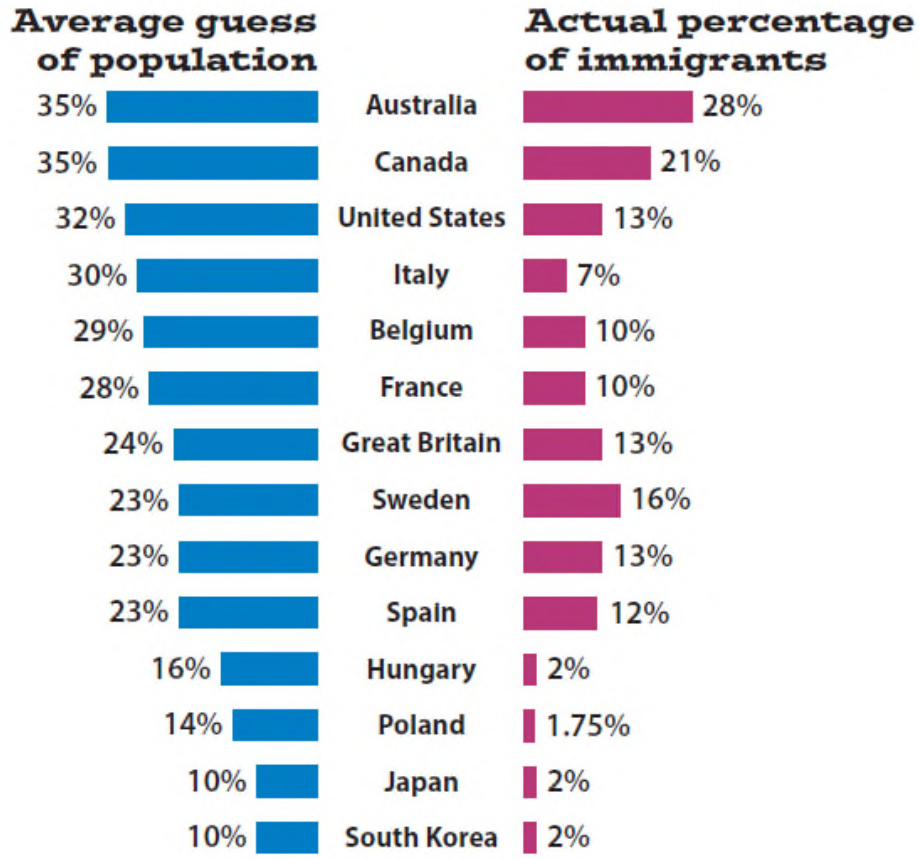

*Note:* Each point represents a single poll conducted by a major polling organization.

*Source:* www.pollster.com.

# Types of Surveys

- **Interview** Face-to-face or telephone questioning of respondent to obtain desired information
- **Questionnaire** Printed, written, or computerized form used to obtain information from a respondent

# Immigration Rates: Perception vs. Reality




*Source:* Ipsos MORI 2014.

# Quantitative and Qualitative Research

- **Quantitative Research** Collects and reports data primarily in numerical form
  - **Mean** Calculated by adding series of values and dividing by number of values
  - **Median** Midpoint, number that divides series of values into two groups of equal values
  - **Mode** Most common value in series
- **Qualitative research** Relies on what is seen in field or naturalistic settings more than on statistical data

- **Observation** Research technique in which an investigator collects information through direct participation and/or by closely watching a group or community
  - **Ethnography** Study of an entire social setting through extended systematic observation
  - Observation can lead to closeness with some research subjects that yields insights, but it also risks a loss of objectivity and/or failing to study other subjects in depth.

- **Experiment** Artificially created situation that allows a researcher to manipulate variables
  - **Experimental group** Subjects in an experiment who are exposed to an independent variable introduced by a researcher
  - **Control group** Subjects in an experiment who are not introduced to independent variable by researcher
  - **Hawthorne effect** Unintended influence observers of experiments can have on their subjects

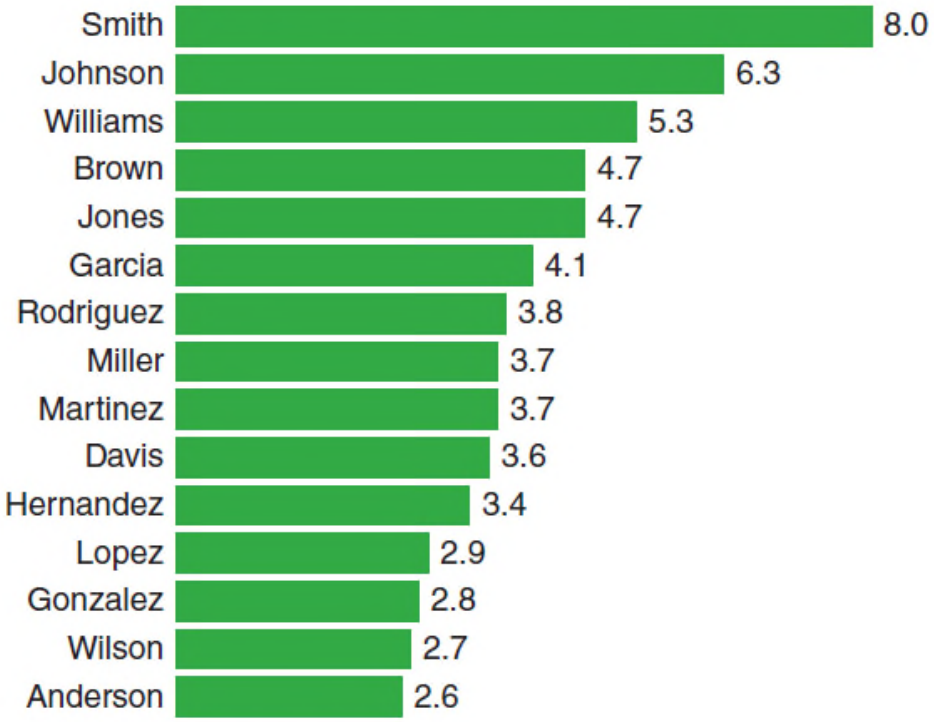
# White Privilege in Job Seeking


*Source:* Pager 2003:958. *Photo:* © Dolas/Getty Images RF.

# Use of Existing Sources

- **Secondary Analysis** Variety of research techniques that make use of previously collected and publicly accessible information and data
  - Data is nonreactive, not influenced by the research process
- **Content Analysis** Systematic coding and objective recording of data, guided by some rationale

# Most Common U.S. Surnames




Note: Numbers are per 1,000 people in the population.

*Source:* Chalabi and Flowers 2014.

# Major Research Designs

| Method | Examples | Advantages | Limitations |
|---|---|---|---|
| Survey | Questionnaires<br>Interviews | Yields information about specific issues | Can be expensive and time-consuming |
| Observation | Ethnography | Yields detailed information about specific groups or organizations | Involves months if not years of labor-intensive data collection |
| Experiment | Deliberate manipulation of people's social behavior | Yields direct measures of people's behavior | Has ethical limitations on the degree to which subjects' behavior can be manipulated |
| Existing sources/ Secondary analysis | Analysis of census or health data<br>Analysis of films or TV commercials | Cost-efficiency; nonreactive | Limited to data collected for some other purpose |

# Primary Themes in Children's Television Food Commercials


*Source:* Stitt and Kunkel 2008. *Photo:* © RubberBall Productions RF.

**Code of ethics** The standards of acceptable behavior developed by and for members of a profession

# *Code of Ethics*: published by ASA

1. Use appropriate research techniques in proper ways.
2. Be honest, respectful, and fair.
3. Adhere to the highest scientific and professional standards.
   - Secure informed consent when possible.
4. Be unbiased and non-discriminatory, respecting the dignity and worth of all people.
5. Contribute to the public good.

## Research Ethics

- Confidentiality
  - Sociologists generally promise confidentiality to those they study.
  - The Supreme Court has failed to clarify the rights of scholars to protect their sources.
- Research Funding
  - Funding sources must be disclosed and should not taint objectivity.
- **Value neutrality** Max Weber's term for the objectivity of sociologists in the interpretation of data

# Feminist Methodology

Sociologists using feminist methodology have had great influence on current researchers.

- Reject notion of work and family as separate spheres
- Have drawn attention to researchers' tendency to overlook women in sociological studies
- Have contributed to greater global awareness within sociology
- Involve their subjects more
- More oriented toward seeking change


## 5 Movies on SOCIOLOGICAL RESEARCH

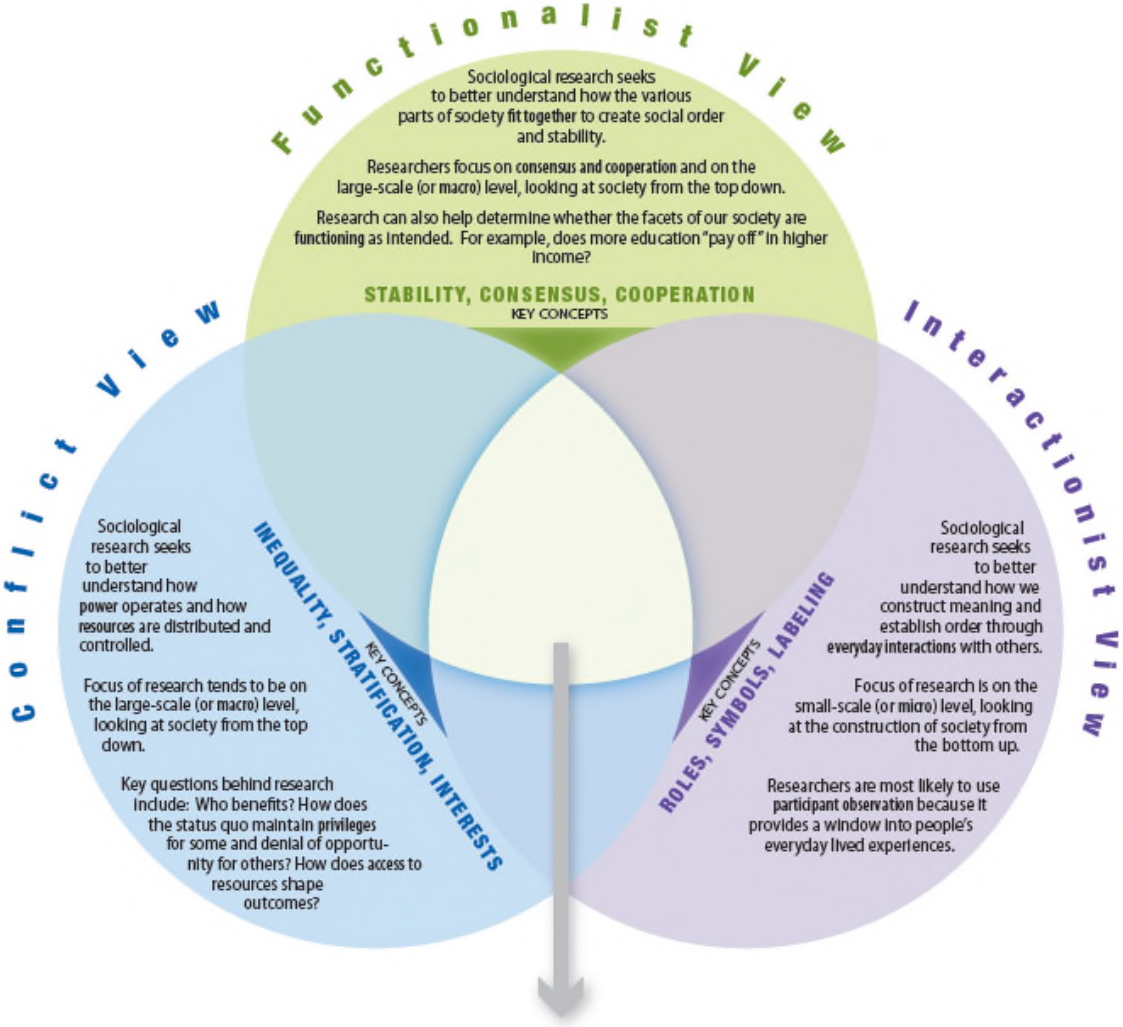
**Kinsey**
*The father of modern sexual research employs individual case studies.*

**Thank You for Smoking**
*A satire about the tobacco industry, showing how statistics can lie.*

**Supersize Me**
*A reporter investigates the American fast-food industry by eating at McDonald's for one month.*

**56 Up**
*Documentary following 14 children as their lives progress from age 7 to 56.*

**Devil's Playground**
*Amish teens experiment with drinking, drugs, and sex before committing to a lifetime within the Amish community.*




## MAKE THE CONNECTION

*After reviewing the chapter, answer the following questions:*

1. Which perspective did Alice Goffman use in her research? Why?
2. How might a researcher's perspective influence the research design he or she picks? Give an example for each perspective.
3. How might each perspective interpret Devah Pager's findings in her experiment about race and job seeking?
4. How might each perspective study the relationship between education and income in a slightly different way?