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As the recent spate of disaster movies such as *Earthquake* and *The Towering Inferno* underscore, we are fascinated with disasters. Social scientists and laymen alike, we always have been. And we have always been fascinated by questions that relate to our functioning in the midst of and in the aftermath of disasters. Do we panic? Run aimlessly? Help each other? Do we have the inner resources to cope with the disaster? Do outside resources

(agencies) function adequately on our behalf? Is the cataclysmic event apt to scar us emotionally?

Since 1917, when Samuel H. Prince of Columbia University first applied social science methodology to the study of a mass calamity—a munitions ship explosion in Halifax Harbor, Nova Scotia, a horror that killed 1,600—a substantive body of disaster research that helps answer such questions has been accumulated. None-

theless, because of problems inherent in disaster research—funding, reaching the impact area quickly, being accepted by the community and more—the picture of how we behave during and after disaster cannot even now be presented in completely satisfying detail.

(Myron Brenton,
"Studies in the Aftermath,"
Human Behavior,
May 1975, p. 56.)

Few scientists study more different things in more different ways than do sociologists. The sociologist may be digging through obscure census reports to see where the American people are moving, or studying a new social movement as a participant observer, or conducting an evaluation study to see whether an action program is working. Almost any kind of social phenomena is a fit subject for sociological research, providing proper scientific procedures are followed. How this is done is the subject of this chapter.

THE FIELD OF SOCIOLOGY

First of all, forget whatever you have read about sociology in the popular magazines and newspapers, for much of it is inaccurate. A magazine writer who wishes to make some offhand guesswork sound more impressive may preface it with the phrase, "Sociologists fear that . . .," "Sociologists are alarmed by . . .," or "Sociologists are wringing their hands over . . ." This journalistic device helps a writer to speak authoritatively without knowing very much about the subject. Some papers, such as *The New York Times*, or the *Wall Street Journal*, quote sociologists accurately most of the time. But as a general rule, any undocu-

mented newspaper or magazine statements about what "sociologists think" should be dismissed as unreliable.

Careless use of the term "sociologist" is very common. Magazine and newspaper writers, social workers, labor leaders, government officials, social critics, or anyone else who is interested in social relations may be described as sociologists. This is incorrect. A sociologist is one who has earned advanced degrees or pursued other advanced studies in sociology (not in psychology, theology, social work, or some other field) and is engaged in teaching, research, or other professional work in the field of sociology.

No formal definition of sociology is very satisfactory. Short definitions do not really define; long definitions are cumbersome. Yet a definition of some sort is needed, and sociology is often defined as *the scientific study of human social life*. Human beings behave differently from other animals. They have unique forms of group life; they pursue customs, develop institutions, and create values. Sociology applies scientific methods to the study of these phenomena in the search for scientific knowledge.

Sociology concentrates its study upon the group life of human beings and the product of their group living. The sociologist is especially interested



Sociologists study group life. (Barbara Pfeffer/Black Star)

in customs, traditions, and values which emerge from group living, and in the way group living is, in turn, affected by these customs, traditions, and values. Sociology is interested in the way groups interact with one another and in the processes and institutions which they develop. Sociology is subdivided into many specialized fields, of which a partial list includes:

- Applied Sociology
- Collective Behavior
- Community
- Comparative Sociology
- Crime and Delinquency
- Cultural Sociology
- Demography
- Deviant Behavior
- Formal and Complex Organizations
- Human Ecology
- Industrial Sociology
- Law and Society

- Leisure, Sports, Recreation, and the Arts
- Marriage and the Family
- Mathematical Sociology
- Medical Sociology
- Methodology and Statistics
- Military Sociology
- Political Sociology



Sociology is interested in the way groups interact with one another.

Race and Ethnic Relations
 Rural Sociology
 Social Change
 Social Control
 Social Organization
 Social Psychology
 Sociological Theory
 Sociology of Education
 Sociology of Knowledge and Science
 Sociology of Occupations and Professions
 Sociology of Religion
 Sociology of Small Groups
 Stratification and Mobility
 Urban Sociology

These topics are not the exclusive property of sociology, for no discipline can stake out a field and post "keep out" signs around it. Sociology is only one of the social sciences. Other disciplines share its interest in many topics. For example, its interest in communication and public opinion is shared by psychology and political science; criminology is shared with psychology, political science, law and police science, and so on. Sociology is especially close to psychology and anthropology, and overlaps them so constantly that any firm boundaries would be arbitrary and unrealistic. The more we learn about human behavior, the more we realize that no one field of knowledge can fully explain it.

METHODS AND TECHNIQUES OF SOCIOLOGICAL RESEARCH

The methods of sociological research are basically those outlined in the preceding chapter and used by all scientists. As Karl Pearson has remarked, "The unity of all science consists alone in its method, not in its material. The man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the scientific method and is a man of science" [1900, p. 12].

While scientific methods are basically alike

for all sciences, scientific *techniques* differ, for techniques are the particular ways in which scientific methods are applied to a particular problem. Each science must, therefore, develop a series of techniques which fits the body of material it studies. What are some of the techniques of sociological research?

Cross-sectional and Longitudinal Studies

Every study has some sort of time setting. A study which covers a broad area of observation at a single point in time is called a *cross-sectional* study. For example, Campbell, Converse, and Rodgers's study, *The Quality of*

Sociologists study the behavioral norms of different societies. How many norms are suggested by this picture? (Ken Heyman)



American Life [1976], reports interviews with a national sample of 2,700 households, inquiring as to their satisfactions and dissatisfactions. They found that married people are happier than single people, that prosperous people are happier than poor people, and made many other interesting observations.

If the study extends over time, describing a trend or making a series of before-and-after observations, it is called a *longitudinal* study. Thus, Levine and Meyer [1977] studied changes in black and white enrollment in Kansas City public schools between 1960 and 1974. They found that schools with a relatively small black enrollment (under 29 percent) were likely to "remain desegregated, while schools with a higher percentage of black students became almost totally resegregated" as a result of what has come to be known as "white flight."

The national public opinion polls (Gallup, Harris, and others) are cross-sectional studies, but if the same set of questions is repeated at intervals over a period of years, longitudinal comparisons can be drawn.

Longitudinal studies may be either *prospective* or *retrospective*. A retrospective study (often called an *ex post facto* study) works backward in time, using data that are already recorded. For example, Wynder and Evarts [1950] used hospital records of 605 lung cancer victims and found that all but eight were cigarette smokers. When a retrospective study shows strong evidence of a relationship between two facts, the next step often is to see whether a prospective study will confirm the relationship. A prospective study begins with the present and carries observations forward over a period of time. Thus Dorn [1959] and Kahn [1966] followed the health history of 200,000 veterans for eleven years, finding that the pack-a-day-or-more smokers were sixteen times as likely to die from lung cancer as were nonsmokers. Prospective studies take a long time to complete and are often very costly, making them one of the least common types of research study.

Sometimes longitudinal conclusions are drawn from cross-sectional studies. A cross-sectional study may show differences between age groups, and this is often interpreted as evidence of changing attitudes or behavior. For example, numerous studies have shown that young people are more permissive than older people about sex behavior and drug use. Does this mean that values are changing and that the values of today's youth will be everybody's values tomorrow? Or is this a life-cycle change, with the young growing more conservative as they grow older? A cross-sectional study will not tell this.

Longitudinal conclusions from cross-sectional studies are often dead wrong. For example, ever since "intelligence" testing began, cross-sectional comparisons have consistently shown that average IQ seems to peak in early adulthood and declines steadily thereafter. But these surveys were conducted during a period of steadily rising levels of public education. Each thus compared better educated young people with less well educated older people. More recent longitudinal studies measuring IQs of the *same persons* over a period of years report no consistent decline in IQ until old age, with some aspects of "intelligence" improving and others declining with advancing years [Baltes, 1968; Baltes and Schaie, 1974]. Longitudinal conclusions can only be established by longitudinal studies, even though cross-sectional studies may suggest promising hypotheses.

Laboratory and Field Experiments

All sciences use experiments. In the laboratory experiment, materials or people are brought into the laboratory for study. In laboratory experiments with people, people are recruited, assembled, and perhaps paid for engaging in the experiment. Dollard's famous frustration-aggression studies [1939] were conducted by assembling a number of students as experimental subjects, suppos-

edly to study the effects of fatigue upon task performance. These students were subjected to intense frustration through prolonged boredom, nonarrival of promised food and games, and other intentional annoyances, while their aggressive responses were cataloged.

The field experiment takes research out to people instead of bringing people to the research laboratory. A massive field experiment involving vaccination of several million children established the value of the Salk polio vaccine. A continuing series of field experiments are seeking to find effective ways of promoting birth control in underdeveloped countries and among disadvantaged groups in the United States [Berelson, 1966; Ridker, 1976; Singh, 1979].

The concept of any experiment is quite simple: Hold all variables constant except one, cause it to vary, and see what happens.

One of the best ways to control all variables is to use *control groups*. A control group is a group of subjects who are like the experimental group in all respects except the variable(s) which we are studying. As an example, suppose we want to know whether abolishing grades would increase learning or increase loafing. To test this by experiment we would need a *control group* of classes which follow the usual teaching and grading procedures, and an *experimental group* of classes using whatever experimental procedure is being tested. To "hold all other variables constant," the control and experimental groups would need to be alike in students' abilities, subject studied, quality of teaching, students' work load, students' finances, and anything else likely to affect their performance. We would also need a reliable instrument to measure learning outcomes (after reaching agreement upon *what* learning outcomes were important). Then the results of the trial could be objectively determined. If the experimental group shows greater or lesser learning gains than the control group and this difference is confirmed by replication (repetitions of the

experiment by other researchers), then significant conclusions can be drawn.

Failure to use suitable control groups may destroy a study's usefulness. For example, two psychologists [Miale and Selzer, 1976] examined the Rorschach tests which were given to sixteen Nazi leaders at the time of the Nuremberg war crimes trials and reported that fifteen of them were "psychopathic" in various degrees. But Miale and Selzer failed to compare the Nazi leaders' tests with Rorschach tests from a control group of leaders from other countries. Thus, even if we assume that the analyses are correct, we do not know whether these researchers have uncovered personality characteristics of *Nazi leaders*, or characteristics of *leaders*. Thus, this study is of limited value.

There are two common ways of setting up experimental and control groups. One is the *matched-pair* technique. For each person in the experimental group, another person similar in all important variables (such as age, religion, education, occupation, or anything important to this research) is found and placed in the control group. Another technique is the *random-assignment* technique, in which statistically random assignments of persons to experimental and control groups are made—such as assigning the first person to the experimental group, the next to the control group, and so on. Suppose we wish to measure the effectiveness of an experimental treatment program for delinquents in a reformatory. Using one technique, we should match each delinquent who received the experimental treatment (experimental group) with another delinquent, matched for other variables thought important, who received only the usual treatment (control group). Using the random-assignment technique, every second (or third, or tenth) delinquent would be assigned to the experimental group upon arrival at the reformatory, with the others becoming the control group. Wherever the researcher is permitted to make assignments in this way, the random-assignment technique is far easier

and at least as accurate; but often, when the research situation does not allow this technique, the matched-pair technique may be used.

Experiments in sociology face certain difficulties. An experiment involving thousands of people may be prohibitively expensive. It may take years to complete a prospective study. Our values forbid us to use people in any experiments which may injure them. The scientific world reacts strongly in those infrequent instances where human subjects have been used in a hazardous or harmful manner [J. Katz, 1972; Jones, 1981]. When people are unwilling to cooperate in an experiment, we cannot force them to do so (although we may occasionally trick them into unconscious cooperation). Furthermore, when people realize that they are experimental subjects, they begin to act differently, and the experiment may be spoiled. Almost any kind of experimental or observational study upon people *who know they are being studied* will give some interesting findings which may vanish soon after the study is ended.

Planned experiments upon human subjects are most reliable when these subjects do not know the true object of the experiment. They may be given a rationale, a reasonable explanation of what the experimenter is doing, but this rationale may be a harmless but necessary deception which conceals the true purpose of the experiment. For example, McClelland [1971] wished to study the effects of alcohol upon normal people in a party atmosphere but told the subjects that he was studying the effects of a party atmosphere upon fantasy, and had them write imaginative stories about pictures he showed them at intervals. But as Kelman points out [1966], the use of deception in social research poses the ethical question of distinguishing between harmless deception and intellectual dishonesty and may even produce errors in the outcome (subjects may detect the deception and begin second-guessing the researcher!).

Because of all these limitations, social sci-

ences (excepting psychology) make limited use of planned experiments. We use them wherever practical, but depend more heavily on other techniques.

Observational Studies

Observational studies are like experiments in all respects except one: In an experiment the scientist arranges for something to happen in order to observe what follows, whereas in an observational study the scientist observes something which happens, or has already happened, by itself. Both rely upon systematic observation under controlled conditions in a search for verifiable sequences and relationships. Both are used in all the sciences, but the procedures for using them vary according to the material being studied. The types of studies which follow are not mutually exclusive, for a study may fit into more than one of these several categories.

IMPRESSIONISTIC STUDIES. These are informal descriptive and analytic accounts based on observations which are less fully controlled than in more formal studies. They definitely are *not* a rambling series of anecdotes but are an organized presentation of purposeful observations. Suppose, for example, a sociologist with a special interest in the family visits Russia. To make an impressionistic study, this sociologist would outline in advance the kinds of information to be sought, the kinds of people to seek out and question, the places to visit, printed matter to collect, and other sources of possible information. Then, while traveling, the scholar would be alert for chances to ask questions about family life, visit "typical" families, scan papers and magazines and collect any other information. The scholar returns home with some very definite impressions of Russian family life, but they are not based on a systematic, scientifically controlled investigation—on an orderly search of the published literature, on a scientifically constructed sample of informants, and so on.

Responsible scholars will call this sociologist's judgments impressions, and will not state them as scientifically established conclusions.

No matter how elaborate, carefully planned, and systematically conducted a study may be, if the recorded data consist of the observer's impressions, it is classed as an impressionistic study. Thus, the Lynds [1929, 1937] spent many months in "Middletown" (Muncie, Indiana); they systematically searched newspaper files, interviewed virtually everyone who held a position of authority or was locally said to be important, and participated in community life. They ended up with a large mass of impressions which were highly perceptive and probably accurate, but not easily verifiable. A new "Middletown" series of studies, repeating and elaborating upon the Lynds' methods, is now appearing [Caplow et al., 1982], revealing many changes in Middletown in the intervening half century.

Bias is a major hazard in impressionistic research. Studs Terkel [*Working*, 1972] and LeMasters [*Blue-Collar Aristocrats*, 1976] spent hundreds of hours listening to working people share their ideas and feelings; then from their huge collection of tapes, notes, and recollections they selected a small portion for publication. This method clearly carries the danger that the observer's feelings will color the findings.

Despite this hazard, impressionistic studies are highly useful in social science. They provide many hypotheses and research leads, and suggest many insights which might be overlooked by other methods. The best of the impressionistic studies hold an honored place in sociological literature.

STATISTICAL COMPARATIVE STUDIES. If the information needed has already been written down somewhere, it is sensible to look up the record. (The Levine and Meyer study, cited on p. 28, is an example, since all the data needed were in school records.) Much sociological research consists of looking up

recorded statistical facts and comparing and interpreting them. For a simple example, consider the question, "Now that women have greater freedom to lead an interesting and independent life without marriage, are more women remaining single?" While the reasons for remaining single may be a complicated question, the proportion of women remaining single can easily be derived from census data, which show the proportion of single women dropping from 24.3 percent in 1890 to 11.9 percent in 1960, then rising to 17.0 percent in 1980. (These figures give the percentage of all American women, 14 years old or older, who had never been married, with correction for changes in the age distribution of the population.) Many such questions can be answered quickly by checking data in the annual *Statistical Abstract of the United States*, which summarizes statistics collected by many government and other agencies and should be found in any library. Other questions may require study of more specialized statistical sources, such as the many *Special Reports* issued by the Bureau of the Census.

Many research questions involve a comparison of several kinds of statistical data from several sources. For example, using income data from the U.S. census, Jacobs [1978] computed an "index of economic equality" for each American state. Then, using crime statistics from *Uniform Crime Reports* (published by the U.S. Department of Justice), he computed an "index of imprisonment probability," a ratio between the number of crimes reported to the police and the number of criminals imprisoned for that type of crime. He hypothesized that imprisonment ratios for property crimes (but not for violent crimes) should be higher wherever economic inequality was greater, and found that his data supported these hypotheses.

Sometimes the researcher must go out and collect original data. For example, Budd [1976] wondered whether marriages are affected by having lived together before marriage. Since

little has been published on this question, Budd surveyed 151 volunteer couples (54 cohabiting couples, 48 married couples who had cohabited, and 49 married couples who had not cohabited). She found very few differences between the marriages of those who cohabited before marriage and those who had not cohabited. (*Tentative conclusion: premarital cohabitation has little effect upon marriage. Replication studies invited!*)

Many people "have no use for statistics." Often they do not like statistics because they do not understand them. Statistics, like shotguns, are dangerous when handled by the ignorant, as is shown in Huff's entertaining little book, *How to Lie with Statistics* [1954]. Those who know the uses and abuses of statistics realize that statistics are nothing more or less than *organized, measured facts*. They are as trustworthy or untrustworthy as is the scientific method of the person who compiles them. To reject statistics is but a way of rejecting facts.

Sociologists make a great many comparative statistical studies. As almost any kind of research is likely to involve statistical organization and comparison of facts at some point or other, the sociologist must be something of a statistician, and citizens who hope to be intelligently aware of the world they live in must know how to interpret statistics, lest they be duped by every clever propagandist in sight.

QUESTIONNAIRE AND INTERVIEW STUDIES
Sometimes the facts we need are not recorded anywhere, and we can find them only by asking people. Thus, Ferree [1976] interviewed 135 married women with elementary school children, and reported that the wives who were full-time homemakers were considerably more "dissatisfied with life" than wives who are employed outside the home. But six large national interview studies of the same question found no consistent relationship between wives' satisfaction with life and whether they were employed outside the

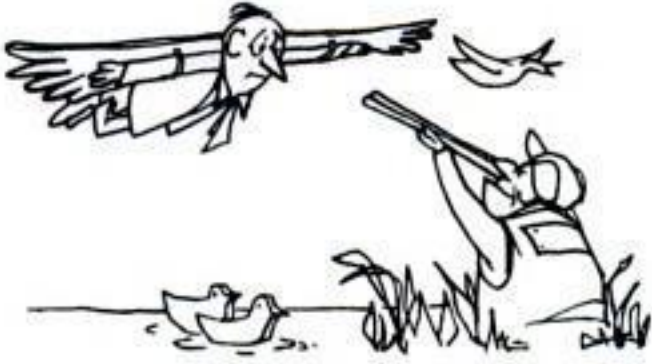
home [Wright, 1978]. Again, we are reminded that a single study seldom proves much until it is confirmed through replication.

Questionnaire and interview studies are systematic ways of asking questions under scientific controls. A questionnaire is filled out by the informant personally; an interview schedule is filled out by a trained interviewer who asks the questions of the informant. Both methods have their pitfalls, which the trained sociologist should be able to avoid. The informants may not understand the question; they may pick an answer even though they do not have any firm opinion on the matter; they may give an "acceptable" answer rather than the real one; or they may be swayed by the way the question is worded.

Even though questionnaire and interview studies have a margin of error, they may still be useful, for they are more reliable than guesswork. Public officials seldom take a position on an issue without first reviewing the public opinion polls, while legislators often delay casting a vote until receiving the latest opinion poll from their districts. Few business executives set a production schedule or plan a sales campaign without first commissioning some "market research."

PARTICIPANT-OBSERVER STUDIES. Some things can be fully understood only by experiencing them. The *participant observer* seeks insight by taking part in whatever is being studied. For example, a participant observer wishing to study labor unions might join one, work at a job, attend union meetings, and possibly become a minor union official. To study a religious sect, one would join it and share in its worship and other activities. Through personal participation and intimate observation, the participant observer may gain insights which no *external* observation would provide.

Some years ago, a white novelist was commissioned by *Ebony* magazine to make a participant-observer study of black life. With his hair trimmed short and his skin darkened



The participant observer seeks insight by taking part personally.

by a drug, he traveled about the South, where everyone identified him as a black. Although he was a native southerner, he found that the experience of being treated as a black brought many surprising revelations about black life in the United States at that time [Griffin, 1961]. In another participant-observer study, Zablocki visited and lived in 120 rural communes over a ten-year period [Zablocki, 1980].

There are pitfalls in this technique. The participant observer may become so emotionally involved as to lose objectivity and become a dedicated partisan instead of a neutral observer. Or the participant observer may overgeneralize—that is, assume that what is

found in the group studied is also true of all other groups. Since the data are largely impressionistic, conclusions are not easily verified. Yet the participant observer is not just “looking at things,” but is applying a sophisticated scientific methodology [Bruyn, 1966; Friedrichs and Ludke, 1975] which has given us many insights and suggested many hypotheses for further study.

Is it ethical to pretend to be a loyal member of a group in order to study it? Is such a deception justifiable? It is not easy to say when a deception ceases to be harmless. Perhaps the best answer is that a reputable scientist will be careful not to injure the people being studied.

The *eyewitness account* is an amateur, small-scale participant-observer study. How do people act after a disaster, such as a tornado or an explosion? What happens at a religious revival, a riot, a picket-line disturbance? Rarely is there a visiting sociologist, pencil in hand, ready to record the event. Social scientists often seek eyewitness accounts from persons who were there. A detailed eyewitness account, collected as soon as possible after the event, is a useful source of information. Such accounts must be used with care, for the



A white man (on the right), John Griffin, artificially darkened his skin so he could pass for a black man and make a participant-observer study of black life. (*New American Library*)

eyewitness is usually an untrained observer, who may not be reliable. Many studies have shown the undependability of eyewitness identification and how easily eyewitness reports can be "slanted" by the way the questions are put to the witness [Loftus, 1974, 1979; Buckhout, 1975]. Yet the eyewitness account is priceless source of data for the social scientist.

CASE STUDIES. The case study is a complete, detailed account of an event, situation, or development. It may be a life history of a person, a complete account of an event, or a detailed study of an organization. Erikson [1976] made a study of the consequences of one disaster, the dam break and flash flood in 1972, in Buffalo Creek, West Virginia, interviewing survivors and reading all the recorded testimony available. The case history of a group—a family, a clique, a union, a religious movement—may suggest some insights into group behavior. An accurate, detailed account of a riot, a panic, an orgy, a disaster, or any social event may have scientific value. An unhappy family, a happy family, a community, an organization—almost any phenomenon can be studied by the case-study technique.

Perhaps the greatest value of the case study is in the suggestion of hypotheses, which can then be tested by other methods. Much of our reliable knowledge about juvenile delinquency, for instance, has developed through the testing of hypotheses which were suggested by early case studies of delinquents [Thomas, 1923; Shaw, 1931]. Much of our present knowledge of personality disorganization stems from hypotheses suggested by a classic collection of case studies in Thomas and Znaniecki's *The Polish Peasant in Europe and America* [1923]. These hypotheses are not often tested by the case-study method but by other methods.

A generalization cannot be based upon a single case, for a case can be found to "prove"

almost anything. Generalizations must be based upon a large mass of carefully processed data, and the collection of a great many case studies is expensive. Also it is difficult to "add up" a number of case studies or compute averages or other statistical computations. Therefore we seldom use case studies when seeking to test a hypothesis. But after the hypothesis has been tested and we have arrived at some sound generalizations, a good case study may give a beautiful illustration of these generalizations. For example, there is conclusive evidence that juvenile delinquency is closely associated with unsatisfactory family life [Glueck and Glueck, 1959]. A case study showing how unsatisfactory family life has apparently encouraged delinquency in a particular family makes a vivid illustration of this generalization.

These several kinds of studies often overlap, and a study may fit into more than one classification. For example, Roebuck and Frese [1976] made a study of an after-hours nightclub (serving liquor after legal closing hours). They posed as ordinary patrons while listening and talking with the "night people." Theirs was a participant-observer study (they observed patrons while posing as patrons), an impressionistic study (they collected impressions, not statistics), and a case study (they studied *one* club). The Zablocki study of communes mentioned earlier was a participant-observer study (he lived in communes), a cross-sectional study (120 of them), a longitudinal study (over a ten-year period), a questionnaire study (asking the same questions in each), and a statistical comparative study (he collected factual data on communards and compared them with other groups of people).

EVALUATION RESEARCH. Almost half the federal government's expenditures are for "human resources," including social action programs such as Head Start, delinquency

prevention, drug rehabilitation, job training, and many others. Do they work? Or is the money wasted? May they even do more harm than good?

The use of scientific research procedures to measure the effectiveness of an action program is called *evaluation research* [Suchman, 1967; Abt, 1977; Cook, 1978]. Evaluation research may use any of the kinds of studies described in the preceding pages. Its object is to replace guesswork with knowledge in deciding what programs to continue and how to improve them. (At least in theory, this is the purpose; in practice, the purpose of evaluation research may be to develop proof of the program's "success" so that funding will be continued.)

Evaluation research is not easy, for many variables must be controlled. Often the findings of various evaluation studies are so conflicting that no firm conclusions can be drawn. For example, Nancy St. John [1975] reviewed dozens of studies of the effects of school desegregation on pupil learning and found that the reported effects varied so widely that no clear decision could be rendered. Even when numerous studies do agree, they may be disbelieved or ignored. Studies critical of an agency may be quietly buried, and those whose conclusions conflict with popular beliefs are disregarded. For example, a number of studies have shown that high school driver-training courses have little or no effect upon driver accident rates [Moynihan, 1968; Harmon, 1969, Conley and Smiley, 1976], but it appears that people have made a common-sense judgment that driver training "must work" and simply ignore evidence that it does not.

Despite the difficulties and pitfalls, evaluation research is one of the most important and most rapidly growing areas of sociological research, with new books appearing every year [Guba and Lincoln, 1981; Meyers, 1981; Crane, 1982], along with an *Evaluation Studies Review Annual* and a quarterly journal, *Eval-*

uation Review. While evaluation research is imperfect, the alternative is to rely on hunches and guesswork in designing social action programs.

The Problem of Sampling

In most research, we save time by examining only a sample of an entire *universe*—whatever we are studying, whether it is tomato plants, laboratory animals, college freshmen, or working wives. If the sample is properly selected, it will give an accurate picture of the entire universe under study. But to do this, the sample must be *representative*; that is, all kinds of people (or tomato plants, or whatever) must appear in the sample *in the same proportions* as they appear in the universe being studied. Thus, a representative sample of the student body must contain the same proportion of freshmen, males, blacks, commuters, business majors, and married students as found in the entire student body. The most common way of doing this is to select a *random sample*.

The term, "random," suggests a selection without any system or design, such as choosing anyone who is handy—people passing a particular street corner, or climbing the library steps. But this would be an *uncontrolled sample*, for there are no controls to insure that it will be representative.

A *random sample* is selected so that each person in the universe being studied has an equal chance of being in the sample. We might take every tenth, or fiftieth, or hundredth name in the student directory. Or we might feed all the student numbers into the computer and program it to make a random selection. Every tenth address on the community's mail-delivery routes, every twentieth hospital admission, or every hundredth driver's license would give random samples of local residents, hospital patients, or automobile drivers.

While a random sample is quite represent-

ative, a *stratified random sample* is still more perfectly representative. In such a sample, we first determine what percentage of each category of the universe under study would be in the sample and then program the computer to select a random sample of each category. For example, suppose that our university student body is 32 percent freshmen, 49 percent male, 12 percent black, and 45 percent commuters (plus other categories). In a representative sample, each 100 members of the sample should include 32 freshmen, 49 males, 12 blacks, and 45 commuters. The computer is then programmed to make a random selection of 32 freshmen from all the freshmen, 49 males from all the males, and so on.

A *self-selected* sample is composed of volunteers, such as persons who write letters to the editor or to their senator or who mail in magazine questionnaires. It is unknown how these volunteers compare with those who did not volunteer. Is it mainly the "far-outs" or the "squares" who mail in the questionnaires? Thus, *The Hite Report* [Hite, 1976], a sex book pretending to be a research study of women's sex lives, was based upon a 3 percent return of mailed questionnaires. Ms. Hite's sequel, *The Hite Report on Male Sexuality* [Hite, 1981] did a little better, getting a 6 percent return. With such tiny returns, these books should

be viewed as popular entertainment, not as research.

DISAGREEMENTS IN SCIENCE

Since scientists are supposed to follow certain standard procedures in collecting data and arriving at conclusions based upon scientific evidence, unsullied by bias, vanity, or vested interest, why do scientists so often disagree? Sometimes two different scientists, working with the same data, arrive at opposite conclusions. For example, the Jacobs study mentioned earlier [Jacobs, 1978] concluded that more property crimes are committed where economic inequality is greater. But another sociologist, using the same data, found no such relationship as Jacobs claimed [Bailey, 1981]. Each of these scholars claims that the other is using defective methodology [Bailey, 1981; Jacobs, 1981].

Such contests are common in all sciences. Differing sets of data, differing methods of handling data, differing perspectives, and possible errors all add up to many disagreements. Most disagreements are resolved in time, but by then new disagreements have arisen. It would be easier for students if everything were neatly classified as "definitely true" or "definitely false," but the

Science separates itself from pseudoscience along a number of dimensions. One of these dimensions is accessibility of the data. Scientific data are consensually validated by open inspection of the recorded observations or through replication of the relevant phenomena. Following publication of major observations it is an accepted practice in science for researchers to allow colleagues who are doing serious work in the same field to have access to their original data. When researchers consistently refuse to allow colleagues such access, something important is being signaled. Of course data may get lost or

destroyed or be difficult or costly to retrieve in the form required. Or they may be classified information or have commercial value that a scientist may wish to exploit prior to their general release. However, when none of these considerations is applicable, a refusal to supply a copy of a set of data leads to the unpleasant inference that something is wrong, that the data do not support what is claimed for them, that the data are an embarrassment following an extravagant claim that cannot be substantiated.

(David F. Marks, "Remote Visiting Revisited," *The Skeptical Inquirer*, Vol. VI, No. 4, Summer 1982, p. 19.)

world of scientific knowledge just is not like that. Separating scientific truth from error is a difficult task, but an exciting one!

PURE AND APPLIED SOCIOLOGY

A distinction between pure and applied science is drawn in every scientific field. *Pure science* is a search for knowledge, without primary concern for its practical use. *Applied science* is the search for ways of using scientific knowledge to solve practical problems. A biochemist who seeks to learn how a cell absorbs food or how a cell ages is working as a pure scientist. If this biochemist then tries to find some way to control the aging process, this is applied science. A sociologist making a study of "the social structure of a slum neighborhood" is working as a pure scientist; if this is followed by a study of "how to prevent delinquency in a slum neighborhood," this is applied science. Many people view sociology entirely as an applied science—trying to solve social problems. Properly viewed, it is both a pure and an applied science. For unless a science is constantly searching for more basic knowledge, its "practical applications of knowledge" are not likely to be very practical.

Practical applications of sociological knowledge have become quite common. Some sociologists are employed by corporations, government bureaus, and social agencies, often in evaluation research but sometimes in administration. Sociologists are often consulted by legislative committees in preparing new legislation. While the political clout of opposing interest groups may be the prime determinant of social policy decisions, the policy recommendations of social scientists are a significant factor in the legislative process.

On many social questions, such as the causes and treatment of crime and delinquency, drug and alcohol addiction, sex offenses, the causes and consequences of race discrimination, or the adjustment of the fam-

ily to a changing society, there is considerable scientific knowledge within the social sciences. Often this knowledge is rejected by people who prefer to follow their prejudices, but as a nation, we are beginning to apply scientific methods to our thinking about social issues.

Popular Sociology

A great deal of sociological material reaches print through people who are not sociologists. The popular magazines are studded with articles on crime, family life, sex, education, suburbia, social class—practically every sociological topic imaginable. This is popular sociology—treatment of sociological topics, usually by writers without much formal sociological training, and aimed at a popular audience. Popular sociology at its worst is seen in articles like the "sex-and-sin" exposés upon which certain men's magazines dwell so fondly. Such articles are generally descriptively inaccurate, with a total lack of the interpretative analysis which would fit the facts into a relevant social context. At the opposite pole are many writers who do a fairly creditable job of popularizing sociological findings. For example, Stoner and Parke's *All God's Children* [1977], a study of new religious cults, and Davis's *Hometown* [1981] are written by nonsociologists, but the authors are careful, observant, sensitive reporters.

"Pop sociology" often contains inaccuracies and instances of misplaced emphasis, doubtful interpretation, oversimplification, and too-sweeping generalization. Yet it is likely that popular understanding of sociological topics has been greatly increased by such writers.

Why isn't popular sociology written by professional sociologists? For the same reason that popular science is usually written by journalists, rather than by scientists. Popular writing is a special skill which few scientists or professors have mastered. Furthermore, the scientist's passion for accuracy and for a

careful qualification of all statements is a positive handicap in popular writing. Unwillingness to oversimplify, to overdramatize, or to indulge in grandly sweeping generalization make the professional's writing more accurate but less exciting. Sociologists write for the scholarly audience while journalists popularize sociology, more or less accurately, for the public.

THE ROLES OF THE SOCIOLOGIST

What is the proper task of the sociologist? Is it merely to observe human action with the calm, detached curiosity of the ecologist who counts the lemmings as they dive into the sea? Or should the sociologist rush into social action? Should the professor of sociology encourage students to develop a detached understanding of social phenomena or inspire them to man the barricades for social reform? What is the proper role for the sociologist in a changing society?

The Sociologist as Research Scientist

Like all scientists, sociologists are concerned with both collecting and using knowledge. They share in these tasks in various ways.

CONDUCTING SCIENTIFIC RESEARCH. As a scientist, the sociologist's foremost task is to discover and organize knowledge about social life. A number of full-time research sociologists are employed by universities, government agencies, foundations, or corporations, and many sociologists divide their time between teaching and research. Many university sociologists are engaged in "funded" research, with all or part of their salaries and their research expenses paid from research grants made by government agencies, foundations, or corporations. These grants are made to sociologists who submit an acceptable proposal for research on a particular topic. Since little research can be conducted

without research funds, this gives the funding agencies great power to influence the direction of sociological research.

Radical critics of sociology (including some sociologists) claim that, behind a facade of ethical neutrality and objectivity, sociologists have prostituted their research talents to the support of the interests of the funding agencies, and have thus supported militarism, racism, and other forms of oppression [Gouldner, 1962, 1970; Frederichs, 1970, pp. 82-85; any issue of *The Insurgent Sociologist*].

Whether sociological research has been widely corrupted in this manner may be debated [Horton and Bouma, 1971]. What is indisputable is that problems of bias and partisanship are present in all research, and that research findings are often helpful to the interests of some people and damaging to the interests of other people [Becker, 1967]. Even the definition of a research problem may carry an implicit bias. For example if we state a research problem as, "What characteristics of poor people contribute to their poverty?" we imply that the responsibility rests mainly on the poor people themselves; but if we define the problem as, "What social arrangements produce poverty?" then the responsibility is placed upon "society."

Throughout most of the history of sociology, sociologists were often accused of being radical subversives whose research and teaching were a threat to established institutions and vested interests. Many older sociologists today, still bearing the scars of the anticommunist witchhunts of the 1950s, are puzzled and hurt when students and younger sociologists accuse them of having been lackeys of capitalistic oppression all their lives! But the question of the responsibility of the scientist to society is as old as science itself, and will not soon be settled.

CORRECTING POPULAR NONSENSE. Another task of the sociologist as a scientist is to clear away the intellectual rubbish of misinformation and superstition which clutters so much

of our social thinking. Sociologists have helped to bury a great deal of nonsense about heredity, race, class, sex differences, deviation, and nearly every other aspect of behavior. It is due partly to the findings of sociology that today we rarely hear an educated person argue that the white race is innately superior, that women are intellectually inferior to men, that behavior traits are inherited, or that rural people are less "immoral" than urbanites—ideas which nearly every educated person accepted a half century ago. By helping replace superstition and misinformation with accurate knowledge about human behavior, sociologists are perhaps performing their most important function.

MAKING SOCIOLOGICAL PREDICTIONS. Although the track record of sociologists in making social predictions is not impressive, *someone* must make social predictions. Every policy decision is based upon certain assumptions about the present and future state of the society. A legislator who says "We need more severe penalties to curb drug pushing" is predicting that more severe penalties actually will curb the narcotics business without creating even greater problems. Another legislator who says "Legalize marijuana" is making a set of predictions about the consequences of this action. Thus every policy recommendation inevitably implies a set of assumptions and predictions. What sort of predictions do sociologists offer? Here are a few samples, offered without explanation or documentation at this point, as examples of the kind of predictions sociologists can make:

The trend toward employment of women will continue until most women are working for most of their married lives.

Birth rates will fall to approach death rates, or death rates will rise to approach birth rates.

Despite some experimentation with alternatives, the monogamous nuclear family will

continue to be the basic family type in the United States.

The present popularity of jeans and casual clothing among young people will be followed by a return to high-style clothing.

The recent trend toward early retirement will soon be replaced by efforts to lengthen the work career.

Most social science prediction consists not of predicting specific developments, as the astronomer predicts an eclipse, but of forecasting the general pattern of trends and changes which seem most probable [e.g., Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting*, 1973]. All such predictions or forecasts should be offered with a certain humility, for no certainty attends them. Instead, social scientists offer them as the best, most informed guesses available upon which to base our policy decisions and expectations for the future.

The Sociologist as Policy Consultant

Sociological prediction can also help to estimate the probable effects of a social policy. Every social policy decision is a prediction. A policy (e.g., federal grants for Head Start) is begun in the hope that it will produce a desired effect (e.g., narrow the educational gap between poorer and more prosperous children). Policies have often failed because they embodied unsound assumptions and predictions. Sociologists can help to predict the effects of a policy, and thus contribute to the selection of policies which achieve the intended purposes. For example:

What effect does dropping out of high school have upon a youth's future earnings? (Little or none, when other factors are equal.)

What would be the effect of intensified law enforcement upon campus marijuana use? (Little or no reduction, with aggravation of other student-police problems.)

Would low birthrates and a small-family norm increase marital happiness? (Yes; there is research evidence that smaller families are better off in every way.)

Would publishing the names of juvenile delinquents help to reduce delinquency? (No; it would more likely increase it).

Would the suppression of obscene literature help to reduce sex crimes and sex immorality? (Our limited evidence suggests that it would not.)

Would legal barriers to abortion strengthen family life? (No; most sociologists believe this would increase illegitimate births, unwanted children, child abuse, and family discord.)

These are a few of the many social policy questions which sociologists could help to settle. One of the greatest services any scholarly group can offer is to show the society what policies are most likely to work in achieving its objectives. This is a service which sociologists are qualified to perform.

The Sociologist as Technician

Some sociologists are engaged in planning and conducting community action programs; advising on public relations, employee relations, problems of morale or of "intergroup relations" within the organization; working on human relations problems of many sorts. Often these sociologists have specialized in social psychology, industrial sociology, urban or rural sociology, or the sociology of complex organizations.

Recently the term *clinical sociologist* has appeared to describe the work of the sociologist as technician [Gardner, 1978]. To some extent, this is a new name for what sociologists have been doing for a long time, but it also includes a considerable broadening of the range of sociologists' efforts to be useful in society.

In such positions the sociologist is working as an applied scientist. He or she has been engaged to use scientific knowledge in pur-

suing certain values—a harmonious and efficient working force, an attractive public image of the industry, or an effective community action program. This role raises a question of ethics. When a sociologist accepts employment as a technician, pursuing values chosen by an employer, has scientific integrity been compromised? To take an extreme example, there is evidence [Monroe, 1962] that gambling operators engaged social scientists to find out why people do or do not gamble, so that the operators could learn how to attract more customers. (We do not know whether any sociologists were included.) Would this be a form of scientific prostitution?

The radical critics of "establishment sociology" charge that sociologists have "sold out" whenever they serve as technicians or research scholars in any kind of effort to maintain or improve the efficiency of the government, military, capitalistic, or welfare establishments. Thus, not only are sociologists (if any) working in war-related activities condemned, but even sociologists working in programs to improve the health of poor children in Mississippi, to increase agricultural output in Peru, or to teach birth control in village India are sometimes accused of supporting "oppression." This is the classic view of the revolutionist—any attempt to make the present system work better, or to help people find better lives within the system is "oppressive" because it helps to perpetuate the system.

There is no simple answer to the question of what clinical appointments it is proper for the sociologist to accept. Each sociologist's answer will be found partly in the prevailing views of the academic world at that moment and partly in his or her own conscience.

The Sociologist as Teacher

Teaching is the major career of many sociologists. In addition to the concerns and problems of teaching in any field, the problem of value neutrality versus value commitment is

a particularly acute question. For example, in a course on "poverty," should the sociologist supervise an objective study of facts, theories, and policies—possibly sympathetic but as objective as possible? Or should the course be designed to produce dedicated advocates of a particular action program? Should the sociologist seek to convert students to conservatism, liberal reformism, or revolutionary activism? For some decades the ethics of university teaching have demanded that the teacher refrain from all conscious "indoctrination," but this question is now under spirited debate.

The Sociologist and Social Action

Scientists seek to discover knowledge. Should scientists also tell the society how this knowledge *should* be used? For example, the geneticists already know something about human heredity, and before very long it may be possible to control the genetic makeup of babies, and "order" babies according to a specifications list. Who should decide what sort of baby should go to whom? The scientists? The parents? The government?

The basic question is whether science—specifically sociology—should be value-free. For example, sociologists know some things about population growth, race relations, urban development, and many other matters involving questions of public policy. Should sociologists become public advocates of birth control programs, legalized abortion, women's liberation, legalized marijuana, racial integration, and many other programs which they may consider socially desirable?

Early sociologists gave an emphatic "yes" to this question. Without an adequate foundation of scientific knowledge, they rushed to support all sorts of public policies they believed wise. Between 1920 and 1940, many sociologists shifted to the view that sociology should be a more nearly "pure" science, discovering knowledge but not attempting to decree how it should be used. They sought

to build sociology on the model of physics or chemistry, as a value-free science. As such, it should be committed to no values except those of free scientific inquiry. Sociologists generally avoided involvement in controversial issues and sought the status of "pure" social scientists.

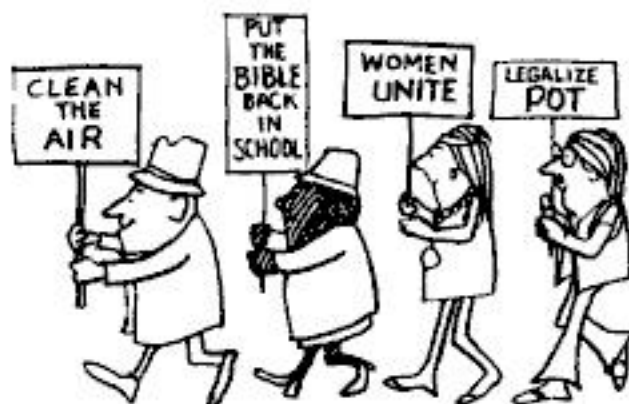
More recently, this view has been challenged in both physical and social science. The *Bulletin of the Atomic Scientists* carries many articles by scientists urging their fellows to claim a larger role in deciding the uses of nuclear science discoveries. Many sociologists today believe that sociologists should claim a major role in making decisions about public policy and should involve themselves in the major issues of our society [Lindesmith, 1960; Horowitz, 1964; Stein and Vidich, 1964; A. Lee, 1966, 1973, 1978; Becker 1967]. They charge that sociologists have buried themselves in "safe" research topics, leaving the really important questions to nonsociologists—questions such as "How can poverty be reduced?" "How can schools be integrated?" "How can communities be organized for more civilized social living?" "Should the goals and values of American society be altered to promote human welfare?" They feel that not only do sociologists have a duty to say what society *might* do about problems of race conflict, population growth, birth control, drug addiction, divorce, sex deviation, medical care, etc., but that sociologists have a duty to say what our society *should* do about such problems. Books like Shostak's *Putting Sociology to Work* [1974] provide concrete examples of how sociologists are involving themselves in social issues and constructive social action and show what they have learned from these experiences.

Sociology today, in common with all the other social sciences, has some members who insist that, both individually and as an academic discipline, sociologists should openly and publicly support the "radical reconstruction of society" [Szymanski, 1970; Colfax and Roach, 1971; D. Horowitz, 1971; Sternberg,

1977]. This question is receiving much attention in sociological literature [Douglas, 1970; Lee, 1978; Harris, 1980]. Whether sociology should be value-free is an unsettled question, but sociologists are agreed upon the following propositions:

(1) Sociologists should show the relationships between values. In short, sociologists may say, "If *this* is what you want, *here* is what you must do to get it." If stable, enduring marriages are more important than happiness in marriage, then divorce should be made more difficult; if *happy* marriages represent the more important value, then fairly easy divorce should permit the unhappily married to separate and try again. If we wish to arrest urban blight and suburban sprawl, some private property rights will have to be sacrificed. If we wish to clean up polluted rivers, we must be prepared to spend a lot of tax money in doing so. Sociologists may clarify what value sacrifices must be made if we wish to attain certain other values.

(2) A sociologist as an *individual* may properly make value judgments, support causes, and join reform movements, like any other citizen. As a scientist, the sociologist may not know whether television violence is harmful to children, and therefore might not make public recommendations, but as a parent will make a decision according to his or her personal beliefs and values. As a scientist, the sociologist may not be able to say whether gambling or marijuana should be forbidden,



As a citizen, the sociologist is perfectly justified in supporting causes.

but as a citizen he or she is free to express opinions and support personal value judgments.

Beyond this there is no complete agreement among sociologists concerning what role they should assume. Most sociologists have some firm opinions on what policies society should follow and are in considerable agreement with one another upon many of these policies. Possibly the time will come when the social policies which seem best to most sociologists will also seem best to the rest of the society. As persons who cannot and would not divorce themselves from the society in which they live, most sociologists hope so.

THE STUDY OF SOCIOLOGY

Students are sometimes delighted to find in sociology (or another social science) evidence that some of their parents' fondest beliefs are outmoded superstitions. But when they find evidence that their *own* beliefs are scientifically unfounded, their reaction to this correction may not differ greatly from that of their parents. To separate sense from nonsense is one of the objectives of sociology. Only those who are willing and able to subject their beliefs, assumptions, and practices to objective scientific scrutiny will gain much from the study of any of the social sciences.

The Use of Concepts in Sociology

Every field of study makes the student memorize many words to which the field attaches special meanings. This is not an idle ritual; it is done because precise concepts are necessary. First, *we need carefully expressed concepts to carry on a scientific discussion.* How would you explain machinery to a person who had no concept of "wheel"? How useful to a specialist would a patient's medical history be if her physician had recorded it in the language of the layman? The several dozen sociological concepts which will harass the

student in this book are necessary for a clear discussion of social phenomena.

Secondly, *the formulation of concepts leads to increased knowledge*. Some accurate descriptive knowledge must be organized before a concept can be framed. Then the analysis and criticism of this new concept point up the gaps and errors in present knowledge. Use of the concept often calls attention to facts and relationships which may have been overlooked. Years ago while studying migration, Park [1928] framed the concept of the *marginal man* who is on the fringes of two groups or two ways of life while fully belonging to neither. The use of this concept quickly led to the recognition that there were many kinds of marginal persons—the person of mixed racial ancestry, who belongs clearly to neither race; the supervisor, who is not clearly either “management” or “labor”; the ambitious climber, no longer in the lower class yet not securely a middle-class person; and many others. Sound concepts like that of marginality lead to increased knowledge.

Finally, concepts are useful as verbal shorthand. At the hardware store, it is faster to ask for a “wing-nut” than for “one of those funny nuts with little ears on it so it can be tightened by hand.” The term “control group” replaces an entire sentence in a research report or discussion. Every discipline develops concepts as time-savers.

Most of the concepts of sociology are expressed in words which also have a popular meaning, just as the term *order* has one meaning in zoology, another at the restaurant table, and still another at a law-and-order political rally. Every science appropriates some common words and makes them into scientific concepts by giving them a specific definition. Sociology is no exception.

Careers in Sociology

A student who becomes interested in a subject may wonder what possibilities it holds for a career. A combination of courses which con-

TABLE 2-1
EMPLOYMENT OF UNDERGRADUATE
SOCIOLOGY MAJORS, 1920–1980s*

Occupation	TIME OF GRADUATION		
	1920– 1960s	1970s	1980s
Teaching	21.0	9.8	8.3
Planning	12.3	4.1	6.6
Social work	11.4	5.7	0.0
Homemaking	7.0	2.8	3.3
Counseling	6.1	8.2	3.3
Management	5.3	10.6	15.0
Graduate school	4.4	9.8	8.3
Secretarial	3.4	3.7	16.6
Retail trade	2.6	13.1	11.6
Clerical	0.9	9.4	20.0
Other	11.5	9.0	2.2
Retired, unemployed	14.0	3.7	0.0

* Responses of 419 undergraduate sociology majors from Florida State University. Percentages add up to more than 100 because listing includes “first,” “present,” and “any other” occupations.

Source: Graham C. Kinloch, “Undergraduate Sociology Majors and the Job Market,” *The Southern Sociologist*, 14:20–21, Winter 1983.

stitutes an undergraduate major or minor in sociology is not, in itself, preparation for a professional career as a sociologist. Undergraduate majors and minors are useful mainly as background preparation for other careers: (1) In *social work*, the better jobs demand a graduate degree in social work, and a strong undergraduate major in sociology is usually recommended. (2) In *the professions*—medicine, law, engineering—it has been found that undergraduate social science courses are useful. (3) *Secondary schools* present some demand for sociology teachers. (4) *Civil service positions* often include undergraduate sociology among the acceptable educational qualifications for a wide variety of positions in lower and middle brackets. (5) *Sociologists are employed* in small numbers by industry, trade associations, labor unions, foundations, and in fairly large numbers by research organizations, in a wide variety of positions, very often in the administration and conduct of research. (6) *Newly emergent careers* in many

sorts of action programs have developed in recent years—local human relations councils, fair employment practices commissions, affirmative action programs, economic opportunity programs, job retraining programs, foreign aid programs, and many others. Changes introduced by the Reagan administration have, for at least the moment, greatly curtailed employment opportunities in these positions, and their long-term future is uncertain.

An M.A. degree is generally sufficient to obtain a teaching position at a junior college or community college, but promotions and university appointments usually require a Ph.D., which is even more necessary for a career in sociology than it is in most of the other sciences. Among those scientists with enough “professional standing in the scientific community” to be listed in the National Register of Scientific and Technical Personnel, in 1970 (the most recent issue available as this is written), a doctor’s degree was held by 76 percent of the sociologists, as compared with 66 percent of the psychologists, 42 percent of the economists, 41 percent of the physicists, 36 percent of the chemists; the sociologists were exceeded only by the anthropologists, 90 percent of whom held a doctorate. Of all sociologists, about 84 percent are employed by educational institutions, with the remainder scattered among many employers, mainly government agencies and private foundations. Teaching is the major activity of 58 percent of sociologists, with 22 percent engaged primarily in research, and 16 percent in management and administration, most often management and administration of research (leaving 4 percent in “other” work).

For a quarter century after World War II, the employment outlook for sociologists was excellent. But since 1977, college enrollments have been falling. The Reagan administration cut funds for student loans and aids and eliminated most federal government funding for social science research. As this is written,

the employment outlook for new sociology Ph.D.’s is not favorable. To imply otherwise would be dishonest. The market for sociologists is highly sensitive to federal government policies, and these can change rapidly. Any student interested in sociology as a career should consult sociology faculty members upon the current employment prospects and should obtain a copy of the booklet *Careers in Sociology* by writing to the American Sociological Association, 1722 N Street, NW, Washington, DC, 20036).

For most students, sociology will not be a career but merely part of their general liberal arts education. Whatever career they enter, they will be members of a society, residents in a community, participants in many groups, and carriers of the culture to the next generation. The study of sociology may aid them to fill with greater insight these varied roles which are their destiny.

SUMMARY

Sociology attempts to study society scientifically. Each social science has its own focus, and sociology’s is upon the group life of the human race and the social products of this group life.

The methods of sociological research include *experimental* and *observational* studies, and many studies can be either *cross-sectional studies* or *longitudinal studies* (which may be either *prospective* or *retrospective*).

Observational studies are of several kinds: *impressionistic studies*, *participant-observer studies*, *case studies*, *questionnaire and interview studies*, *statistical comparative studies*, and *evaluation research studies*. A single study may fit into more than one of these categories (e.g., a longitudinal participant-observer study).

Sociology like all sciences may be either *pure* or *applied*. *Pure sociology* searches for new knowledge, while *applied sociology* tries to apply sociological knowledge to practical problems. A good deal of more or less accurate

sociology is popularized by professional journalists, who are sometimes incorrectly called sociologists.

The sociologist in the professional role of social scientist tends to be a pure scientist devoted to discovering and teaching truth and occasionally making sociological predictions. The sociologist may function as an applied scientist when employed as a technician or consultant, or when in the role of private citizen. Whether sociologists as scientists and teachers should select, recom-

mend, and actively promote those policies which they believe society *should* follow is an unsettled question.

The study of sociology will be successful only if the student is willing to learn about matters which already appear to be familiar. The student must learn some concepts which are needed for a precise scientific discussion. Granted a willingness to engage in serious preparation, the student may find a prospective career in sociology.

GLOSSARY

bias a tendency, usually unconscious, to see facts in a certain way because of one's wishes, interests, or values.

case study a complete, detailed account of an event, situation, or development.

control group a group of subjects who resemble the experimental group in all respects except the variable(s) being studied.

cross-sectional study one which covers a broad range of phenomena at a single point in time.

evaluation research a study measuring the effectiveness of an action program.

experimental group subjects whose responses to various experimental influences are observed.

impressionistic study the systematically collected impressions of a researcher.

longitudinal study one which examines the same body of phenomena over a period of time.

matched-pair technique one which matches each member of an experimental group with a person in the control group

who is similar in all respects except the variable(s) being studied.

participant-observer study one in which the researcher becomes an active participant in whatever is being studied.

popular sociology popularizing of sociological findings by nonsociologists in popular media.

prospective study one which follows the same body of phenomena forward through a period of time, beginning with the present.

random-assignment technique one which builds experimental and control groups by assigning members at random to each group.

random sample one in which every person has an equal chance to appear, as when every fifth or tenth, or hundredth name is selected.

representative sample one in which all kinds of people appear in the same proportions as they appear in the total population studied.

retrospective study one which studies a body of phenomena, working backward from the present over a period of time.

self-selected sample one in

which members of the sample are included by voluntary action, such as returning a questionnaire or a letter.

stratified random sample one in which a random sample is taken of each of the various categories of people in the universe studied.

QUESTIONS AND PROJECTS

- 1 How would you explain sociology to an uneducated person with no understanding of academic fields of knowledge? How would you explain it to a well-educated person whose education had included no sociology courses?
- 2 What is a sociologist? How is the term often misused?
- 3 What is the difference between a prospective and a retrospective study? Outline a research design of each type to study the relation between college grades and starting salaries after graduation.
- 4 How do you "control" a variable? In studying the

- possible relation between grades and starting salaries, what are some variables that should be controlled? How could they be controlled?
- 5 Why are experimental studies rather rare in sociology?
 - 6 What precautions are needed in using eyewitness accounts as sources of scientific data?
 - 7 How does the participant-observer technique differ from merely looking at things? Isn't everyone a participant observer?
 - 8 In one study 1,000 questionnaires are mailed and 800 completed questionnaires are returned; in another study 50,000 questionnaires are mailed and 5,000 are returned. Which study will arrive at the more reliable conclusions?
 - 9 What are the pros and cons of defining the sociology teacher's role as including active promotion among students of values, goals, and social policies the teacher believes right?
 - 10 When you are in an informal student "bull session," listen to each statement with these questions in mind: "How scientifically sound is this statement? Is it based upon scientific fact or upon guesswork, folklore, and wishful thinking? Could it be documented with adequate scientific support?" At the conclusion, try to estimate what proportion of the statements could be scientifically substantiated.
 - 11 Discuss the implications of these two wordings of a

possible questionnaire item:

- a. Do you favor the taking of unborn human life?
 - b. Do you favor compulsory childbirth?
- 12 Write a brief, impressionistic account of some group or some community you have observed. Then list several of your generalizations about the group and outline a research project for collecting the empirical data which would enable you to test the accuracy of these statements.
 - 13 Many communities made cross-sectional studies in the mid-1970s and found that black children equalled whites in school achievement in the lower grades but fell progressively further behind as grade level advanced. How could these findings be interpreted as: (a) evidence of school failure? (b) evidence of school improvement?
 - 14 Some years ago, the U.S. Army commissioned a research team to develop a prediction test to tell whether a man would be more effective in the tropics or the arctic. At considerable expense, the team presented a one-question test which was as reliably predictive as a longer test. The question: "Do you prefer hot weather or cold weather?" Was the money wasted?

SUGGESTED READINGS

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April 2, 1955, pp. 13ff.; reprinted in Edgar A. Schuler et al. (eds.): *Readings in Sociology*, 5th ed., Thomas Y. Crowell Company, New York, 1974, pp. 41-45. An amusing account of the method whereby the author of a famous study arrived at some highly dubious conclusions about heredity and crime.

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