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Parker is a survey and market research and economics consultant to both the public and private sectors. He specializes in survey research for housing, retail, commercial, recreational, and transportation development and for environmental, socioeconomic, demographic, and fiscal impact analyses. He has been involved in a number of projects concerning redevelopment and growth in southern California and has published articles in the *Glendale Law Review* and the *Western Governmental Researcher* and a monograph published by the University of California Center for Real Estate and Urban Economics. He has also delivered papers at various conferences in the field of urban development and fiscal impact. Further, he has presented survey research and focus group studies at various conferences in the southwestern United States.

Parker possesses extensive analytical experience in real estate and real estate investment, having served for many years as director of real estate operations and investments for a major southern California business management firm before returning to academia in 1982.

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CHAPTER ONE

AN OVERVIEW OF THE SAMPLE SURVEY PROCESS

Surveys have become a widely used and acknowledged research tool in most of the developed countries of the world. Through reports presented by newspapers, magazines, television, and radio, the concept of considering information derived from a small number of people to be an accurate representation of a significantly larger number of people has become a familiar one. Surveys have broad appeal, particularly in democratic cultures, because they are perceived as a reflection of the attitudes, preferences, and opinions of the very people from whom the society's policymakers derive their mandate. Politicians rely heavily on surveys and public opinion polls for popular guidance in mapping out campaign strategies and carrying out their professional responsibilities. Commercial enterprises use survey findings to formulate market strategies for the potential widespread use, distribution, and performance of new and existing products. Television and radio programs are evaluated and scheduled largely in accordance with the results of consumer surveys. Government programs designed to provide assistance to various communities often rely on the results of surveys to determine program effectiveness. Private social organizations obtain information from their members through the use of survey techniques. Libraries, restaurants, financial institutions, recreational facilities, and churches make use of polls to solicit information from their constituents and clientele concerning desired services.

As a research technique in the social sciences and professional disciplines, survey research has derived considerable credibility from its widespread acceptance

and use in academic institutions. Many universities have established survey research institutes where the techniques of survey research are taught and surveys can be conducted within the confines of propriety and scientific rigor. Students are often encouraged to use survey research for gathering primary data, thereby satisfying the requirement of conducting original research. Professors publish countless articles and books based on the results of funded and unfunded survey research projects.

Despite the broad-based societal acceptance of survey research, there remains a lingering doubt, especially among laypersons, concerning the reliability of information derived from a relatively few respondents purporting to represent the whole. They frequently ask, for instance, "How can fifteen hundred respondents to a survey be said to represent millions of people?" or "Why should two thousand television viewers dictate to program directors on a national scale what America chooses to watch?" The answers to these and other such questions lie in the systematic, scientific application of the technique of *sample survey research*.

Survey research involves soliciting self-reported verbal information from people about themselves. The ultimate goal of survey research is to allow researchers to generalize about a large population by studying only a small portion of that population. Accurate generalization derives only from applying the set of systematic, scientific, and orderly procedures known as sample survey research. These procedures specify what information is to be obtained, how it will be collected, and from whom it will be solicited.

If the researcher needs information that is not available elsewhere and if generalization of findings to a larger population is desired, sample survey research is the most appropriate method. Furthermore, survey research can be considered an appropriate technique when enough general information is known or can conveniently be obtained about the subject matter under investigation to formulate specific questions. The theoretical underpinnings of sample survey research, its procedural applications, and analysis of the data it generates constitute the substance of this book.

Gathering Information Through Research

The researcher must be aware that survey research is only one among several alternate methods associated with the process of data collection. The three main techniques used to collect primary data (data collected firsthand, directly from the subjects under study) are survey research, direct measurement, and observation. Secondary research is a fourth means of data collection. It consists of compiling and analyzing data that have already been collected and that exist in usable form. These alternative techniques, when they are not appropriate in and of themselves,

can often be used as complements to the survey research process. A brief description of these alternative techniques follows.

- **Secondary research:** Certain data may already exist that can serve to satisfy the research requirements of a particular study. Any study should investigate existing sources of information as a first step in the research process to take advantage of information that has already been collected and that may shed light on the study. Sources of secondary information include libraries, government agencies, and private foundations, among others.
- **Direct measurement:** This technique involves testing subjects or otherwise directly counting or measuring data. Testing cholesterol levels, monitoring airport noise levels, measuring the height of a building to make certain it complies with local ordinances, and counting ballots in a local election are all examples of direct measurement.
- **Observation:** A primary characteristic of observation is that it involves the direct study of behavior by simply watching the subjects of the study without intruding upon them and recording certain critical natural responses to their environment. For example, a government official can obtain important information about the issues discussed in a speech by observing the audience's reactions to that speech.

However, there is no better method of research than the sample survey process for determining, with a known level of accuracy, information about large populations. The survey process is particularly suited to collecting data that can inform the researcher about research questions such as the following:

- How do senior citizens feel about proposed changes in Social Security regulations?
- What is the average income of people twenty-five years of age and older whose highest level of completed education is high school?
- What factors influence people's choice of banks?
- What are the reactions among employees of a local factory concerning a newly proposed union policy?
- How do members of the New York State Bar Association feel about capital punishment?
- What do various state legislators think about a proposed mandatory balanced-budget amendment?
- What proportion of drivers observe seat belt laws?
- To what extent has the Hispanic community in Texas experienced job discrimination?

The particular use for which a survey is conducted determines the informational requirements of that survey. Surveys typically collect three types of information: *descriptive*, *behavioral*, and *preferential*.

Surveys frequently include questions designed to elicit descriptive information about the respondent. Such important data as the respondent's income, age, education, ethnicity, household size, and family composition are integral to most sample survey studies. These socioeconomic parameters provide important information that enables the researcher to better understand the larger population represented by the sample.

In many survey research projects, the researcher is interested in the respondent's behavior. Patterns of transportation use, recreation, entertainment, and personal behavior are often the desired information in sample survey studies. For example, such information as frequency of public transit ridership or use of various types of recreational and entertainment facilities is typical of behaviorally oriented sample surveys.

In contrast to descriptive and behavioral sample surveys, many surveys primarily solicit the respondent's opinion about a variety of conditions and circumstances. The hallmark of this type of sample survey is the public opinion poll, which seeks opinions and preferences regarding issues of social and political relevance. The primary objective of such studies is to be predictive and future oriented.

Very rarely does a study fit into only one of the above informational categories. Scientific investigation requires that relationships be identified in terms of descriptive, behavioral, and preferential data so that we may fully understand the differential complexities of the population from which a sample has been drawn. For instance, in a political public opinion poll, it is much more desirable to know not only the breakdown of votes for each candidate but also such factors as the voter's political party, age, sex, past voting patterns, and opinion on a variety of key issues. Such a survey requires the researcher to derive information from each of the above categories in one sample survey.

Advantages of Sample Survey Research

Generalizations based on a mere fraction of the total population (a sample) did not gain acceptance until the beginning of the twentieth century, when a researcher for a liquor distillery in England named W. S. Gossett was faced with the problem of testing the quality of his company's product. Testing the plant's output involved tasting and, therefore, consuming the product. Thus, testing the entire output of the plant, or even as few as one in ten bottles, was clearly not economically feasible. Gossett, therefore, writing under the pseudonym "Student,"

developed a theoretical basis for making generalizations about the quality of the plant's product by sampling only a small portion of that output.

The foremost advantage of the sample survey technique, as indicated by Gossett's experience, is the ability to generalize about an entire population by drawing inferences based on data drawn from a small portion of that population. The sample survey process can also be used to generalize about nonhuman factors, as Gossett did in his beverage quality control study. The cost of conducting a sample survey is significantly less than that of canvassing the entire population. When implemented properly, the sample survey is a reasonably accurate method of collecting data. It offers an opportunity to reveal the characteristics of institutions and communities by studying individuals who represent these entities in a relatively unbiased and scientifically rigorous manner.

Surveys can be implemented in a timely fashion. That is, the survey project can be organized so that the actual data gathering is performed in a relatively short period of time. Besides the convenience afforded by this approach, there is also the advantage of obtaining a "snapshot" of the population. Other techniques may involve a longer-term study, during which opinions or facts may change from the beginning of the study to the end.

Well-structured sample surveys generate standardized data that are extremely amenable to quantification and consequent computerization and statistical analysis. This quality has been enhanced through rapid advances in computer technology as well as through the development and refinement of complex analytical statistical software packages and techniques. For purposes of comparisons among individuals, institutions, or communities, surveys offer a further advantage—replicability. A questionnaire that has been used in one city or community can be reimplemented in another community or administered once again in the same community at a later date in order to assess differences attributable to location or time.

The sample survey gained general acceptance starting in 1935, when George Gallup established the American Institute of Public Opinion in order to conduct weekly polls on national political and consumer issues for private and public sector clients. Inasmuch as Gallup was operating a business for profit, and since he was to deliver weekly polls, he was necessarily very sensitive to cost and time factors. Gallup developed a method of sampling fifteen hundred to three thousand respondents—quite a small number compared to other surveys at that time. His method involved establishing sample quotas based on age, sex, and geographic region. In the 1936 presidential election between Franklin D. Roosevelt and Alfred Landon, Gallup forecast a Roosevelt victory, while a *Literary Digest* poll of 2.5 million telephone subscribers forecast a Landon landslide. The final results are well known—a Roosevelt victory with 61 percent of the vote. The scientifically implemented small sample thereafter became established as the survey method of choice.

Advancements in the understanding of sample survey methodology now provide even greater accuracy than Gallup had in 1936, with still smaller sample sizes.

Types of Sample Survey Research

Survey information can be collected by means of any of three different methods of implementation: mail-out, telephone, and in-person surveys.

Mail-Out Surveys

The mail-out format for collecting survey data involves the dissemination of printed questionnaires through the mail to a sample of predesignated potential respondents. Respondents are asked to complete the questionnaire on their own and return it by mail to the researcher. The *advantages* of the mail-out technique can be stated as follows:

- *Cost savings:* Other techniques require trained interviewers, and the recruitment, training, and employment of interviewers can be quite costly. Access to respondents by mail can be significantly less expensive than travel for in-person interviews or toll charges for telephone surveys.
- *Convenience:* The questionnaire can be completed at the respondent's convenience.
- *Ample time:* The respondent has virtually no time constraints. There is enough time to elaborate on answers and to consult personal records if necessary to complete certain questions.
- *Authoritative impressions:* The researcher can prepare the mail-out questionnaire form so that it has significant legitimacy and credibility.
- *Anonymity:* Because there is no personal contact with an interviewer, the respondent may feel that the responses given are more anonymous than is the case with other formats.
- *Reduced interviewer-induced bias:* The mail-out questionnaire exposes each respondent to precisely the same wording on questions. Thus, it is not subject to interviewer-induced bias in terms of voice inflection, misreading of the questions, or other clerical or administrative errors.

Mail-out questionnaires have certain *disadvantages*, however, which can be summarized as follows:

- *Lower response rate than other methods:* Many follow-ups and substitutions of sample respondents are required in order to achieve the appropriate sample size and adequate random distribution necessary for purposes of generalization.

- *Comparatively long time period:* The mail-out generally requires a few weeks for questionnaires to be returned; follow-ups and replacements are also time-consuming.
- *Self-selection:* Mail-outs almost never achieve a 100 percent response rate. Hence, even in the best of cases (85 to 90 percent response rate), there can be some bias in the sample. For instance, poorly educated respondents or those with reading or language deficiencies tend to exclude themselves from this form of survey more often than from surveys administered by an interviewer.
- *Lack of interviewer involvement:* The fact that no interviewer is present means that unclear questions cannot be explained, there is no certainty that the questions will be answered in the order written (which may be important), and spontaneously volunteered reactions and information are not likely to be recorded by the respondent and cannot be probed by an interviewer as would be the case with other methods.
- *Lack of open-ended questions:* It is more likely that questions requiring an original written response in lieu of fixed answers will be avoided.

Telephone Surveys

The telephone survey is a method of collecting information through the use of telephone interviews between a trained interviewer and selected respondents. The *advantages* of the telephone survey interviewing process can be stated as follows:

- *Rapid data collection:* Information, especially information that must be timely (for instance, a political public opinion poll related to an upcoming election), can be collected and processed within days. It is possible to complete a telephone survey in the time it would take simply to plan a mail-out or in-person survey.
- *Lower cost:* The cost of implementing a telephone survey is considerably less than that of an in-person survey, and under certain circumstances it can be less than that of a mail-out survey.
- *Anonymity:* A telephone survey is more anonymous than an in-person interview. Hence, the interviewer can conduct in-depth questioning in a less threatening environment than exists in face-to-face situations.
- *Large-scale accessibility:* Not only can local surveys be conducted by telephone, but it is also quite feasible to conduct statewide, regional, or national surveys by telephone.
- *Assurance that instructions are followed:* As with the in-person interview, the telephone interviewer can make certain that the questions are answered in precisely the order intended so that the integrity of the questionnaire sequence is maintained.

Telephone surveys also have certain *disadvantages*:

- *Less control*: The interviewer has less control over the interview situation in a telephone survey than in an in-person interview. The respondent can easily end the interview at any time simply by hanging up the telephone.
- *Less credibility*: The interviewer will have greater difficulty establishing credibility and trust with a respondent over the telephone than would be the case in person or by mail.
- *Lack of visual materials*: Both the mail-out survey and the in-person interview permit the use of visual aids, such as maps, pictures, or charts, as components of the questions. The telephone survey does not provide such an opportunity to the researcher.
- *Limited potential respondents*: Only people with telephones can be contacted, and therefore it is difficult to reach representative samples of groups that do not possess telephones.

In-Person Interviews

In-person, or face-to-face, surveys are structured to permit an interviewer to solicit information directly from a respondent in personal interviews. The *advantages* of the in-person survey technique are as follows:

- *Flexibility*: The interviewer can probe for more detail, explain unclear questions, and use visual aids, such as maps or photographs.
- *Greater complexity*: Interviewers can administer highly complex questionnaires and provide detailed instructions and lengthy lists of alternative responses that many respondents would find confusing and intimidating if the questionnaire were administered by any other means.
- *Ability to contact hard-to-reach populations*: Certain groups, for instance the homeless or criminal offenders, are difficult or impossible to reach by any method other than personal interviews.
- *High response rate*: The rate of response and the degree to which the survey instruments are completed in full are considerably higher for in-person interviews than for mail-out questionnaires. People often feel more comfortable sharing their feelings and information verbally than in written form and will therefore tend to provide more insight into the issues at hand.
- *Assurance that instructions are followed*: The interviewer can make certain that the questions are answered in precisely the order intended so that the integrity of the questionnaire sequence is maintained.

In-person interviews also have certain *disadvantages*:

- *High cost*: Administering in-person interviews can be very costly in terms of time per interview, travel time, interviewer training, and field supervision.
- *Interviewer-induced bias*: Although the interviewer obviously serves many useful functions in this process, he or she can also be a source of bias. For example, the interviewer may inadvertently react in some way to a response rather than remaining neutral. This action could affect future responses by the interviewee and, hence, the validity of the entire questionnaire. By the same token, the respondent may alter his or her responses to gain perceived approval from the interviewer.
- *Respondents' reluctance to cooperate*: If respondents must allow interviewers into their homes to participate in a face-to-face survey, they may tend to be somewhat less inclined to participate than in a telephone survey. Many telephone calls and return visits may be necessary in order to complete an interview.
- *Greater stress*: The in-person interview format is clearly the most intense and stressful for both the respondent and the interviewer. It tends to be a longer and more complex interviewing process, and it is the only one in which a stranger is present in the respondent's environment. Such situations can cause increased stress and fatigue, which may have unfavorable effects on the quality of the responses.
- *Less anonymity*: The advantages of the anonymity perceived by the respondent in mail-out and telephone surveys are greatly reduced in the face-to-face format.
- *Concerns about personal safety*: The meeting of two strangers for purposes of conducting an interview carries with it certain real and perceived risks in terms of the personal safety of both the interviewer and the respondent. This factor has been a significant contributor to the relative decline of this interviewing format.

Stages of the Survey Research Process

To conduct any of the three major types of surveys in a rigorous and unbiased fashion, it is important to adhere to specific procedures and apply them in a systematic manner. Although the stages are presented here as distinct steps, there is actually a great deal of overlap as the survey research process is pursued and implemented. An overview of the process is presented here, and each stage is fully explained in the chapters that follow. The following list displays these stages, which are explained more fully below it.



CHAPTER TWO

DESIGNING EFFECTIVE QUESTIONNAIRES

Basic Guidelines

At the heart of survey research is the questionnaire development process. The key considerations in this process, including the placement of questions within the survey instrument and their format in terms of the method of implementation (telephone, mail-out, or in-person interviews), form the basis of this chapter. The discussion of these issues will take place within the context of sample questions and examples derived from actual questionnaires and survey instruments that have been implemented by the authors during the past several years.

Be aware that no questionnaire can be regarded as ideal for soliciting all the information deemed necessary for a study. Most questionnaires have inherent advantages as well as inherent flaws. The researcher must use experience and professional judgment in constructing a series of questions that maximizes the advantages and minimizes the potential drawbacks. The guidelines detailed in this chapter recognize that there are a large number of considerations that the researcher must address in the process of questionnaire development. Sound questionnaire construction, therefore, is a highly developed art form within the practice of scientific inquiry.

In the initial stages of the survey research process, it is important to determine the relevant issues that bear upon the purpose of the research. Because social science research spans so many disciplines, it is impossible for any researcher to be fully knowledgeable in all the fields of study that might call upon survey

research services and skills. In addressing the complex multidisciplinary nature of survey research in the social sciences, the researcher can respond in two ways.

First, the principal investigator often seeks to construct a team of experts who jointly plan and implement the research study. This team represents both technical expertise and substantive knowledge of the political, socioeconomic, and cultural environment associated with the project. Second, with or without such a research team in place, and as a prelude to the development of survey questions, the investigators must gather preliminary information about issues of importance from interested parties and key individuals. These issues will derive in whole or in part from the three types of information elaborated on in Chapter One: descriptive, behavioral, and preferential. This preliminary information is best generated in a group setting where issues and problems of relevance to the study can be debated, discussed, and refined openly and constructively. Foremost among these preliminary information-gathering techniques is the *focus group*. The focus group is a semistructured discussion among individuals deemed to have some knowledge of or interest in the issues associated with the research study. Group participants are brought together in roundtable discussions run by a group leader or moderator. The discussion that ensues should contribute significantly to an understanding of the key substantive issues necessary for the development of the questionnaire. A full discussion of the use of focus groups in the survey research process is presented in Chapter Five.

At the conclusion of this preliminary information-gathering stage, the key issues that have emerged must be outlined and specified. This list of issues should be submitted to members of the discussion groups for clarification, confirmation, and, perhaps, further explanation. After this review, the researchers can prepare a draft questionnaire or survey instrument. If the research study has been commissioned by public agencies or private clients, as is frequently the case, the draft questionnaire should be reviewed by these parties for content and to ensure that the questions are consistent with the objectives of the study.

Once the researcher is satisfied with the draft questionnaire, the next step is to conduct a *pretest*. A pretest is a small-scale implementation of the draft questionnaire that assesses such critical factors as the following:

- *Questionnaire clarity*: Are the questions understood by the respondents? The researchers may find that certain ambiguities exist that confuse respondents. Are the response choices sufficiently clear to elicit the desired information?
- *Questionnaire comprehensiveness*: Are the questions and response choices sufficiently comprehensive to cover a reasonably complete range of alternatives? The researchers may find that certain questions are irrelevant, incomplete, or redundant and that the stated questions do not generate all the important information required for the study.

- *Questionnaire acceptability*: Such potential problems as excessive questionnaire length or questions that are perceived to invade the privacy of the respondents, as well as those that may abridge ethical or moral standards, must be identified and addressed by the researchers.

The sample size for the pretest is generally in the range of forty to fifty respondents. The researcher is not really interested in statistical accuracy; rather, interest centers on feedback concerning the overall quality of the questionnaire's construction. Accordingly, the researcher will select respondents from among the working population but need not be concerned about selecting them through a random sampling procedure (Chapter Eight) or in accordance with sample size requirements as specified in Chapter Seven. Because statistical inferences are not the primary intent of the pretest, the researcher can be particularly sensitive to cost and time considerations—hence the relatively small number of respondents. For example, a study that attempts to obtain information about teenagers might conduct a pretest using one or two high school classes. The members of the classes would very likely be individuals in the appropriate age category, and the classes could be surveyed quickly, conveniently, and efficiently. Clearly, not all teenagers are high school students; therefore, the high school classes would not necessarily represent the exact characteristics of the respondents in the final study. However, this degree of precision in the selection of pretest respondents is not required. It is only required that the pretest respondents bear a reasonable resemblance to the study's actual working population.

Following the pretest, the researchers must revise the questions as needed. They may want to perform a further pretest if these revisions are extensive. Otherwise, the final questionnaire can be drafted and prepared for implementation in an actual study.

Introducing the Study

It is important to inform potential respondents about the purpose of the study in order to convey its importance and to alleviate any trepidations that potential respondents are likely to have. From the researcher's point of view, there is a need to convince potential respondents that their participation is useful both to the survey's sponsor or client and to the respondents themselves. Any fears that respondents may have regarding time and inconvenience, confidentiality, and safety should be allayed. The respondent must be assured that all answers are valuable—that there are no "correct" or "incorrect" responses.

An introductory statement should contain certain components. First, the *organization or agency conducting the study* should be mentioned, stating the relationship between the sponsoring institution and the potential respondent. A great deal of

credibility can be gained for the study if the sponsor is a governmental body that in some way represents the respondent. An introduction that contains a reference similar to the following can be quite successful in establishing credibility: "The City of Chicago is conducting a survey of residents in order to assess community opinions about services provided by your local police department."

A general statement establishing the *objectives and goals* of the study and the significance of the results to the respondents themselves should follow the client reference. Potential respondents are more likely to participate when they perceive that the study's findings will have a direct impact on their well-being. For example: "It is the purpose of this study to identify those needs that the citizens of the city feel should be addressed in order to maintain a peaceful and secure community."

The *basis of sample selection* should be made clear in order to make the respondent understand that there are no hidden agendas or undisclosed motivations behind the questionnaire. It should be mentioned whether the respondent was selected at random, as a part of a census, as a member of a purposive sample, and so forth, as appropriate. The *characteristics the respondent possesses* that led to his or her inclusion in the sample should be clearly delineated. For example: "Chicago is particularly interested in the opinions of minority residents, and as such you have been selected at random from a list of minority residents of the city."

The respondent must be assured that *participation is valued* and that *answers are neither correct nor incorrect*. He or she must be assured that participation is strictly protected in terms of *confidentiality*. For example: "You should know that there are no right or wrong answers and that your responses will be treated confidentially. Survey results will in no way be traceable to individual respondents."

Because of the more personal nature of telephone and in-person interviews, the interviewer should, as a matter of courtesy, identify himself or herself by name and obtain *permission* to proceed with the survey questions.

A telephone or in-person interview preamble might also include some *estimate of the time required* in order to complete the questionnaire. In the case of a mail-out questionnaire, the respondent should be able to judge this by direct observation of the instrument received in the mail.

A mail-out questionnaire should also include brief *return mail instructions*, such as, "Please drop your postage-paid, preaddressed response in the mail by June 15."

Exhibit 2.1 is an example of a mail-out introduction that addresses the issues discussed above. Verify that the preamble contains the essential information. Exhibit 2.2 is an example of a telephone interview introduction. Once again, cross-check the highlighted issues against the example.

Because of the personal, physical presence of the researcher in face-to-face interviewing, Exhibit 2.2 can be revised into a somewhat less formal, more conversational format in this type of questionnaire administration. Exhibit 2.3 reflects these changes.

EXHIBIT 2.1. MAIL-OUT INTRODUCTION.

Dear Baytown Resident [applicable respondent characteristic]:

We need your help [participative value]! The City of Baytown [organization identification/credibility] is conducting a survey of all households in the city [basis of sample selection]. The information you provide will be useful in helping your City Council provide services and programs to meet the needs and wishes of the residents [goals and objectives of study].

Please take the time to complete the enclosed questionnaire. There are no correct or incorrect responses, only your much-needed opinions [responses neither right nor wrong]. This form contains an identification number that will be used for follow-up purposes only. All responses will be treated confidentially and will in no way be traceable to individual respondents [confidentiality] once the survey process has been concluded. Please drop your postage-paid, preaddressed envelope in the mail by June 24 [return mail instructions].

Thank you for your assistance. We care what you think [participative value].

Sincerely,

Jean M. Wilson
Mayor [credibility]

EXHIBIT 2.2. TELEPHONE INTRODUCTION.

Good evening (afternoon/morning). My name is Thomas Smith [interviewer's name]. The City of Flint [organization identification/credibility] is currently conducting a survey of Flint residents [applicable respondent characteristic] concerning the future development of library facilities for the city [goals/objectives of study].

Your household was selected at random [basis of study selection] to provide information and opinions regarding library facilities in the city of Flint.

We would greatly appreciate a small amount of your time [time] and your input on this important issue [participative value]. There are no correct or incorrect responses, so please feel free to express your opinions [responses neither right nor wrong]. Your responses will be treated confidentially and will in no way be traceable to you [confidentiality].

May I ask you a few short questions [time/permission]?

EXHIBIT 2.3. IN-PERSON INTRODUCTION.

Hello, my name is Janet Johnson [interviewer name]. The City of Flint [organization identification/credibility] is conducting a survey of its residents [applicable respondent characteristic] concerning the city's future development of library facilities [goals/objectives of study].

Your household was randomly selected [basis of sample selection] to provide information and opinions about library facilities.

Would you be willing to answer a few short questions [time/permission] on this important issue [participative value]? Please feel free to express your opinions, because there are no correct or incorrect responses [responses neither right nor wrong].

The questionnaire form we complete today will not be marked in any way that would identify you [confidentiality].

Question Format: Open-Ended or Closed-Ended

Most questions in a questionnaire have closed-ended response choices or categories. Such questions provide a fixed list of alternative responses and ask the respondent to select one or more of them as indicative of the best possible answer. In contrast, open-ended questions have no preexisting response categories and permit the respondent a great deal of latitude in responding to them.

Advantages of Closed-Ended Questions

There are several advantages to closed-ended questions. One is that the set of alternative answers is uniform and therefore facilitates comparisons among respondents. For purposes of data entry, this uniformity permits the direct transferral of data from the questionnaire to the computer without intermediate stages. Another advantage is that the fixed list of response possibilities tends to make the question clearer to the respondent. A respondent who may otherwise be uncertain about the question can be enlightened as to its intent by the answer categories. Furthermore, such categories may, in fact, remind the respondent of alternatives that otherwise would not have been considered or would have been forgotten.

The respondent's answers can be directed by a fixed list of alternatives, which limits extraneous and irrelevant responses. Here is an example of a closed-ended question:

How much education do you have?

- Some high school or less
- High school graduate
- Some college
- Four-year-college graduate
- Postgraduate degree

If, instead, the question were open-ended, as shown below, the responses might not be quite so specific.

How much education do you have?

Sensitive issues are frequently better addressed by asking questions with a preestablished, implicitly "acceptable" range of alternative answers rather than by asking someone to respond with specificity to an issue that might be considered

particularly personal. For example, for medical purposes, an abortion clinic might require information about a client's history in terms of previous abortions. The questions "Have you ever had an abortion? If so, how many have you had?" will tend to intimidate certain respondents who have had prior abortions and who perceive that abortion carries with it a strong social stigma. Their responses, therefore, might be biased toward minimizing the actual number. Recognizing that this tendency exists and always will in regard to socially sensitive issues, the researcher would improve response accuracy by constructing the question as follows:

How many abortions have you had?

- None
- One
- Two
- Three
- Four
- Five or more

Phrasing sensitive questions in this way, with alternative responses that extend significantly beyond normally expected behavior, implies that an accurate response is not outside the realm of social acceptability. (In this case, it implies that many other young women may have similar histories and that having had an abortion is not necessarily aberrant behavior.)

Other types of sensitive questions may involve issues more closely associated with privacy than with social acceptability. This situation is encountered when the subject of a question is income. A respondent may very well feel that his or her privacy is violated when he or she is asked, "What is your annual household income?"

Giving alternative choices in the form of income ranges will tend to mitigate such feelings and will therefore generate a much higher level of response. A question about income is much better constructed to read as follows:

Please indicate the range that best describes your annual household income:

- Less than \$15,000
- \$15,000-\$29,999
- \$30,000-\$44,999
- \$45,000-\$59,999
- \$60,000 and above

Fixed responses are less onerous to the respondent, who will find it easier simply to choose an appropriate response than to construct one. Thus, use of

fixed-alternative questions increases the likelihood that the response rate for particular questions, and for the questionnaire in general, will be higher.

Disadvantages of Closed-Ended Questions

There are, however, certain disadvantages to closed-ended questions that researchers should consider when developing a questionnaire. For example, there is always the possibility that the respondent is unsure of the best answer and may select one of the fixed responses randomly rather than in a thoughtful fashion. The advantage of ease of response, therefore, comes with some potential negative consequences. In a similar vein, a respondent who misunderstands the question may randomly select a response or select an erroneous response. Open-ended questions, in which the respondent is asked to answer in his or her own words, can mitigate these drawbacks. However, as is discussed below, open-ended questions also have certain shortcomings.

Closed-ended questions, in a sense, compel respondents to choose a “closest representation” of their actual response in the form of a specific fixed answer. Subtle distinctions among respondents cannot be detected within the preestablished categories. This particular drawback is frequently addressed by inserting another alternative in the fixed-response format: “Other, please specify _____. This alternative represents an excellent compromise between closed- and open-ended response formats in that it is an open-ended question within a closed-ended format, as shown in the following example:

Please indicate the activity you participate in most frequently at the community recreation center.

- Basketball
- Volleyball
- Swimming
- Table games
- Aerobic exercise
- Other, please specify _____

For simplicity and ease of response, however, the use of this option must be carefully controlled. The decision to include an “Other” response category for a particular question must be based on evidence obtained during the pretest of the survey instrument. If the evidence shows that a relatively large number of responses to the question do not conform to the preliminary set of fixed alterna-

tives, then the researcher should formulate additional fixed categories for the responses that appear frequently and retain the “Other, please specify” category for the responses that appear less frequently. If there is no indication that an “Other” category is needed, it should not be included.

There is an increased possibility that the simplicity of the fixed-response format may lead to a greater probability of inadvertent errors in answering the questions. For instance, an interviewer or a respondent may carelessly check a response adjacent to the one that was actually intended. Open-ended questions eliminate the possibility of such unintended responses. In addition, closed-ended questions tend to constrain the breadth of subject matter addressed within the questionnaire and prevent respondents from expressing their opinions to the fullest extent possible. To obviate this shortcoming, the researcher may choose to use one or more general open-ended questions during the course of the survey.

Using Open-Ended Questions

Open-ended questions are used by researchers in situations where the constraints of the closed-ended question outweigh the inconveniences of the open-ended question for both the researcher and the respondent. It is recommended that open-ended questions be used sparingly and only when needed. To the extent that they are used, the researcher must be aware of certain inherent problems.

First, open-ended questions will inevitably elicit a certain amount of irrelevant and repetitious information. In addition, the satisfactory completion of an open-ended question requires a greater degree of communicative skills on the part of the respondent than is true for a closed-ended question. Accordingly, the researcher may find that these questions elicit responses that are difficult to understand and sometimes incoherent.

A third factor is that statistical analysis requires some degree of data standardization. This entails the interpretive, subjective, and time-consuming categorization of open-ended responses by the researchers. And finally, open-ended questions take more of the respondent’s time. This inconvenience may engender a higher rate of refusal to complete the questionnaire.

Sequence of Questions

The order in which questions are presented can affect the overall study quite significantly. A poorly organized questionnaire can confuse respondents, bias their responses, and jeopardize the quality of the entire research effort. The following series of guidelines for sequencing questions has been created to enable the researcher to develop a well-ordered survey instrument.

Introductory Questions

The first questions should be related to the subject matter stated in the preamble but should be relatively easy to answer. Introductory questions should elicit a straightforward and uncomplicated opinion or derive basic factual—but not overly sensitive—information. The main purpose of the early questions is to stimulate interest in continuing with the questionnaire without offending, threatening, confusing, or boring the respondent.

Rather than call for an opinion

For a study involving quality of life among Native Americans who reside on reservations, the authors developed a questionnaire that began with the following questions:

1. To what tribe do you belong?
 Pala La Jolla Pauma San Pasqual Rincon _____
2. How long have you and your family lived on the reservation?
 Less than 1 year _____
 1 and under 5 years _____
 5 and under 10 years _____
 10 and under 20 years _____
 20 and under 30 years _____
 30 and under 50 years _____
 50 years or more _____
3. Please indicate your general level of satisfaction with life on the reservation using the following scale:
 Highly satisfied _____
 Satisfied _____
 Neither satisfied nor dissatisfied _____
 Dissatisfied _____
 Highly dissatisfied _____

It can be noted that the first two questions are of a basic, factual nature. The third question, although eliciting an opinion, is uncomplicated; however, it is germane to the key focus and sufficiently stimulating to secure the respondent's continued interest.

Sensitive Questions

Certain questions deal with sensitive issues, such as religious affiliation, ethnicity, sexual practices, income, and opinions regarding highly controversial ethical and

moral dilemmas. It is highly recommended that these questions be placed late in the questionnaire, for two primary reasons.

First, if respondents react negatively to such questions and decide to terminate the questionnaire, the information obtained on all previous questions may still be usable in the overall survey results, because enough information may have been obtained to warrant acceptance of the interview as a completed case with only a few questions remaining unanswered. Second, if rapport has been established between the interviewer and the respondent during the course of the survey process, there is an increased likelihood that the respondent will answer sensitive questions that come late in the questionnaire.

Related Questions

Questionnaires generally have a certain frame of reference, as indicated by their goals and objectives. Within this overall context, there are several categories of questions. For instance, the questionnaire soliciting opinions from Native Americans contained questions relating to housing characteristics, schools, public services, crime and police issues, economic development, employment issues, transportation, tribal decision making, recreation, shopping patterns, and socioeconomic data.

Proper questionnaire design dictates that related questions be placed together within the questionnaire so that the respondent can focus and concentrate on specific issues without distraction. In order to facilitate this, it is sometimes appropriate to separate categories of questions by providing a distinct heading that characterizes each section. For example, in terms of police and crime-related issues, the following sequence can be considered to be an acceptable one:

1. How would you describe the current relationship between the police and your community?
 good fair poor no opinion
2. During the past five years, do you feel that this relationship between the police and your community has:
 improved remained about the same
 worsened no opinion
3. In what ways could police officers improve their performance?

On the other hand, if these same questions were to be commingled with questions from other categories, the resulting questionnaire would be much less likely to produce clear, well-formulated responses. You should be able to verify this by examining the less acceptable question order below.

1. Do you or other members of your family participate in the tribal council's decision-making process?
yes ____ no ____
2. Would you be interested in participating in a job training program?
yes ____ no ____
3. In what ways could police officers improve their performance?

While it is generally desirable to arrange questions pertaining to a particular subject in the same section of the questionnaire, it is also important to be cognizant of creating a patterned series of responses. Consecutive questions that tend to evoke reflexive responses, given without adequate thought, should be minimized.

Note that the sequence of questions in Exhibit 2.4, which is part of a commercial business survey, could well produce an automatic, unidirectional set of responses unless the respondent is sensitized to the subtle, but important, differences among the questions. This process of sensitizing will tend to minimize the risk of reflexive responses and is accomplished in this example by underlining and italicizing the essential distinctions.

- (1) Alternative approaches to minimizing this risk of patterned responses may include the use of open-ended questions (without fixed alternative responses), questions that change the order of the fixed responses from question to question, or questions that vary substantially in terms of wording or length. The potential disadvantages of such tactics are that the respondent's thought focus may be disrupted or the respondent might become confused, thereby defeating the purpose of grouping these questions in the first place. Because several considerations must be balanced in the grouping of questions, the pretest becomes of paramount importance to identify the potential for inadvertently eliciting response patterns and to minimize any such impact on the study.

Logical Sequence

There is frequently a clear, logical order to a particular series of questions contained within the survey instrument. For instance, an appropriate time sequence should be followed. If questions are to be posed concerning an individual's employment or residence history, they should be structured in such a way that the respondent is asked to answer them in a sequential or temporal order—for instance, from the most recent to the least recent over a specified period of time:

EXHIBIT 2.4. SERIES OF QUESTIONS DEMONSTRATING SENSITIZING OF RESPONDENTS.

1. What types of additional businesses, if any, do you feel are needed in the City of Poway to help serve your business needs? (Please check no more than three types of businesses.)

Types of Businesses

- ____ Food/market
- ____ Food/specialty store (bakery, deli, etc.)
- ____ Restaurant/dinner house
- ____ Restaurant/other (specify) _____
- ____ Retail/department store
- ____ Retail/specialty store
- ____ Professional
- ____ Services/supplies/equipment
- ____ Light industry
- ____ Other (specify) _____
- ____ Other (specify) _____
- ____ Other (specify) _____

2. What types of additional businesses, if any, do you feel are needed in the City of Poway to help serve the needs of your employees? (Please check no more than three types of businesses.)

Types of Businesses

- ____ Food/market
- ____ Food/specialty store (bakery, deli, etc.)
- ____ Restaurant/dinner house
- ____ Restaurant/other (specify) _____
- ____ Retail/department store
- ____ Retail/specialty store
- ____ Professional
- ____ Services/supplies/equipment
- ____ Other (specify) _____
- ____ Other (specify) _____
- ____ Other (specify) _____

3. What types of additional businesses, if any, do you feel are needed in the City of Poway to help serve the needs of your customers? (Please check no more than three types of businesses.)

Types of Businesses

- ____ Food/market
- ____ Food/specialty store (bakery, deli, etc.)
- ____ Restaurant/dinner house
- ____ Restaurant/other (specify) _____
- ____ Retail/department store
- ____ Retail/specialty store
- ____ Professional
- ____ Services/supplies/equipment
- ____ Other (specify) _____
- ____ Other (specify) _____
- ____ Other (specify) _____

Please indicate your places of residence during the past five years:

1. Current:

2. First prior residence:

3. Second prior residence:

Filter or Screening Questions

Other portions of the questionnaire might involve establishing the respondent's qualifications to answer subsequent questions. Through what are called "filter" or "screening" questions, as shown in Exhibit 2.5, the researcher can determine whether succeeding questions apply to the particular respondent. The first question requires that some respondents be screened out of certain subsequent questions. Only those who have participated in the city's recreational program are asked how they learned about the program. Both existing participants and nonparticipants, however, are asked about their intended use of a community pool and preferred payment programs, with a further screening out of questions pertaining to pool use for those respondents who have no intention of using the pool at all.

Under some circumstances, filtering questions may be used to disqualify certain respondents from participating in the survey process at all. Exhibit 2.6 draws from a telephone questionnaire that was used in a survey of registered voters. It was the intent of the survey to query not all registered voters but only those who were likely to vote. For purposes of the survey, those who were most likely to vote were considered to be those who had voted for the mayor or U.S. senator in the previous year's election. The survey screened out entirely those who did not satisfy the appropriate preconditions by providing explicit instructions for the interviewer concerning disqualification.

Reliability Checks

On occasion, when a question is important or is particularly sensitive or controversial, the degree of truthfulness or thoughtfulness of the response may be in doubt. In such situations, it may be appropriate to include in the questionnaire a check of the respondent's consistency of response by asking virtually the same question in a somewhat different manner and at a different place within the survey instrument.

EXHIBIT 2.5. FILTERING OR SCREENING QUESTIONS.

1. Have you or other household members participated in the recreation program offered by the City of Poway Community Services Department during the past 12 months?

Yes (Please continue with Question 2)
 No (Please skip to Question 3)
2. If yes, how did you find out about the City of Poway Recreation Program?
(Please check only one)

Poway Today
 Poway News Chieftain
 Community Services Department recreation brochure
 Poway Unified School District flyers
 Friend/family member
 Other (specify) _____
3. A community swimming pool is being planned for Community Park at Bowron Road. If you and/or your family members plan to use this pool, which of the following payment methods would you most prefer? (Check one) If you and/or your family members do not plan to use the pool, please go on to Question 4.

Unlimited-use membership (Annual fee)
 Purchase in advance a specified number of visits for discounted price
 Pay each time you or your family members use the swimming pool
4. Do not intend to use the swimming pool. (If you have checked this response, please skip to Question 6.)

EXHIBIT 2.6. SCREENING USED TO DISQUALIFY RESPONDENTS.

1. Are you registered to vote in the City of San Diego?

Yes (CONTINUE)
 No (DISQUALIFY)
 Not sure (DISQUALIFY)
 Refused (DISQUALIFY)
2. Did you vote in the 1986 elections for mayor or U.S. senator?

Yes (ASK QUESTION C)
 No (DISQUALIFY)
 Not sure (DISQUALIFY)

In a survey research project seeking to identify the demand for market rate housing in downtown San Diego, the following question was asked of respondents:

Please indicate the likelihood of your choosing to live in downtown San Diego.

- Very possible
- Somewhat possible
- Not very likely
- Highly unlikely

The researchers suspected that there might be a casual or less careful response pattern to this question, in which respondents might indicate their willingness to live downtown without giving the matter adequate thought. Therefore, later in the questionnaire, another question was posed as follows:

When you consider the possibility of living in downtown San Diego, do you feel

- Excited
- Interested
- Indifferent
- Uncomfortable
- Frightened
- Other, please specify _____

In this study, in order for a respondent to be considered a "possible downtown resident," he or she had to choose the first or second response to *both* questions. Because any other combination might indicate a tentative or inconsistent willingness to consider downtown as a possible place to live, respondents with such answers were not considered strong candidates for downtown living. Without the benefit of this reliability check, respondents who were less likely to live downtown might well have been wrongly included with those who were more inclined to do so.

Following Up Open-Ended Questions

As mentioned, it is desirable to have relatively simple, fixed-answer questions whenever possible. However, most surveys find it necessary to seek information that cannot be fully answered within the fixed-answer format. In such cases, follow-up open-ended questions are asked in a manner that connects them to the fixed-answer question. For instance, during the studies of Native American tribes, the following questions were asked:

1. Are you generally in agreement with the policies and decisions made through tribal decision making?
yes ____ no ____

2. If not, how do you generally differ?
-

Efforts should be made to place such open-ended questions as late in the questionnaire (or appropriate section of the questionnaire) as possible, while remaining cognizant of the need to have a logical and temporal order of questions.

Open-Ended Venting Questions

At the very end of the entire questionnaire, it is often beneficial to use one or more open-ended "venting" questions—ones in which the respondent is asked to add any information, comments, or opinions that pertain to the subject matter of the questionnaire but have not been addressed in it. For example, a citizen opinion survey in a midsized San Diego County bedroom community posed the following final question in its questionnaire:

Thinking of your neighborhood as well as the city of Poway, in general, what do you personally feel are the most important issues or problems facing residents of this city?

Questionnaire Length

The questionnaire should be as concise as possible while still covering the necessary range of subject matter required in the study. The researcher must be careful to resist the temptation of developing questions that, although interesting, are peripheral or extraneous to the primary focus of the research project.

The purpose of being sensitive to questionnaire length is to make certain that the questionnaire is not so long and cumbersome to the respondent that it engenders reluctance to complete the survey instrument, thereby jeopardizing the response rate.

As questions increase in complexity and difficulty, the questionnaire may be perceived as being tedious and longer than it actually is. Hence, the researcher must factor in such considerations as the number of questions and the time and effort required of the respondent to complete them.

As general guidelines, telephone interviews should occupy no more than twenty minutes of the respondent's time; mailed questionnaires should take thirty minutes or less, including open-ended responses; and in-person interviews should be limited to forty-five minutes to one hour. These are maximum time frames. Ideally, telephone surveys should take ten minutes, mail surveys should need approximately fifteen minutes, and in-person surveys should take less than thirty minutes.

EXERCISES

1. Choose a topic for a survey research study. Develop a list of at least five major interested institutions, organizations, and/or individuals whom you feel should be consulted for background information prior to the development of the questionnaire.
 - a. What information would you seek from each of them?
 - b. Whom would you select to pretest the draft questionnaire?
2. What are the primary components to include in a preamble or introduction to a survey questionnaire? Write a preamble to a survey questionnaire that focuses on the demand and use of parks and recreational facilities in a medium-sized city.
3. Discuss the relative advantages and disadvantages of open-ended and closed-ended questions.
4. Comment on the sequence of the following excerpt from a hypothetical sample survey. Do you feel that open-ended and closed-ended questions have been used appropriately? Explain.
 - a. Do you expect that your business will be located in the city of Carlsbad (5) years from now?

yes (go to question c)
 no (continue with question b)
 do not know (go to question c)
 - b. Why do you not expect to be in Carlsbad in 5 years?

 - c. How would you like the Carlsbad business community to evolve into the next century?

expand
 contract
 stay the same
 - d. What is the ZIP code of your residence?

 - e. How long has your business been located in Carlsbad?

less than 2 years
 2 to 4 years
 5 to 9 years
 10 to 19 years
 20 years or more
5. Write six questions for the parks and recreation questionnaire in Question 2 above. Include both open-ended and closed-ended questions, and place them in a sequence consistent with the principles outlined in the chapter. Identify the specific principles applied.

CHAPTER THREE**DEVELOPING SURVEY QUESTIONS**

The previous chapter addressed overall questionnaire development and question sequencing within the survey instrument. No consideration of questionnaire development would be complete, however, without a thorough analysis of the principles and potential problems involved in the actual phrasing and formatting of the questions themselves.

Questionnaire construction is a skill that is refined over time by experience. Each research project has its own set of conditions and circumstances; this renders the imposition of fixed and rigid rules impossible. This chapter is particularly sensitive to the need for flexibility, offering, instead of rules, a series of objectives and guidelines in the pursuit of clear questions. Two fundamental considerations are involved:

- Question phrasing
- Question formatting

The researcher must use considerable discretion in the application of the guidelines outlined in this chapter, because there is a very fine line between appropriately and inappropriately constructed questions. Such appropriateness can prove to be critical to the success of a research project.

Guidelines for Phrasing Questions

The way questions are worded is critically important to the success of a survey. Injudicious phrasing can lead to results that are ambiguous and potentially biased. The following guidelines are provided to assist in the preparation of survey questions that are objective and clearly worded.

Level of Wording

The researcher must be cognizant of the population to be surveyed in terms of the choice of words, colloquialisms, and jargon to be used in the questions. As a general guideline, wording should be simple, straightforward, and to the point. Specifically, the researcher should attempt to avoid highly technical words or phrases, words that require or are associated with higher levels of experience or education, and words or phrases that may be insensitive to ethnic- or gender-related issues.

For example, in a questionnaire seeking to obtain information related to the use of illegal drugs, the following alternative questions might be asked:

1a. Have you or any member of your family been engaged in substance abuse during the past year?

or

1b. Have you or any members of your family used illegal drugs during the past year?

Question 1a uses the term *substance abuse*, which is not necessarily universally understood by the general population. Therefore, the responses to this question may not be consistent with its intent. Question 1b, however, uses the simpler and clearer phrase *illegal drugs*, and the responses should consequently be more accurate.

Obviously, the researcher is interested in making certain that respondents understand the questions well enough to provide accurate representations of their opinions, behavior, and characteristics for purposes of the study. If questions are not understandable, any one of three problems may arise:

- Information provided may be inaccurate.
- There may be a large number of "do not know" or "no opinion" responses.
- The rate of refusal to complete the questionnaire may be inordinately high.

Once again, the pretest looms large in importance in the detection of language-related problems.

On occasion, the general guideline of simplicity should be modified to accommodate special population groups. In a survey among attorneys concerning attitudes about courtroom procedures, it is appropriate to include words that are recognizable to those who have been formally trained in the law. If the survey were instead administered to the general public, the level of wording would, of necessity, be different.

Nonspecific Words and Phrases

Effort must be devoted to avoiding ambiguity in the questions. Ambiguity can occur from the use of vague words or phrases. For example, if one is seeking to determine the number of people residing together in one household, the question might be inappropriately worded, "How many people live in your household?"

Respondents faced with this question may not know whether or not they should include themselves in the response. The confusion can be avoided by rewording the question in a clear and specific manner: "Including yourself, how many people live in your household?"

Similarly, in an attempt to determine household income, the question, "What is your income?" will produce a variety of unsatisfactory responses such as the respondent's annual income, the respondent's take-home pay, the respondent's hourly wage, or the total household income. What is generally sought in most surveys is total gross annual household income, before taxes. The question "Please indicate the category that best represents your total annual household income, before taxes" will produce the desired responses.

Words such as *affiliate*, *identify*, *involved*, and *belong* will often produce ambiguous results. For instance, asking an individual which ethnic group he or she most closely identifies with can be interpreted to mean "With which group do I best get along?" rather than "Of which ethnic group am I a member?" In the first interpretation, a respondent may provide more than one response in order to communicate a favorable inclination toward certain ethnic groups. However, the researcher is typically interested in ascertaining the respondent's own ethnic background and would find such a response uninformative. An appropriate phrasing for obtaining such information is "Please indicate your race or ethnicity."

Another example of nonspecific wording is demonstrated in the following survey question: "Please indicate the number of organizations with which you are involved." The words *involved* and *organizations* are each sufficiently vague to be likely to generate a variety of interpretations among survey respondents. The specific

organizational type (for example, social clubs, professional organizations) should be delineated, as should the precise nature of the involvement.

Multipurpose Questions

Multipurpose questions are those that might inadvertently confuse the respondent by introducing two or more issues with the expectation of a single response. An example of a multipurpose question might be "Are you satisfied with the police and fire services in your community?" To respond to this question with a yes or a no, the respondent would need to have the same opinion of both the police and fire services, thereby denying the researcher potentially valuable information about each individual service. Hence such wording can very well result in findings for which the precise meaning is uncertain. Another example is found in a questionnaire that was published in a small-town newspaper in order to determine public opinion about future land development in the community ("What Does Your Family's Future Hold in Alpine?" 1989). The first question in that survey was worded as in Example 3.1.

EXAMPLE 3.1

Do you believe the visible development at Alpine's freeway entrances will affect the image and property values of our whole community?

Yes _____ No _____

The only way to answer either yes or no to such a question is to feel the same about both image and property values and about all Alpine's freeway entrances. In other words, if a respondent considers such development satisfactory at one entrance and not at another or believes that image will be affected but not property values, there is no way to answer the question. Hence responses to such questions are impossible to interpret accurately. Any question that contains the conjunctions *and* or *or* should be reviewed very carefully for the possibility that it may actually be composed of more than one question.

Manipulative Information

Certain questions may require some form of explanation to be presented to the respondent in order to provide necessary background and perspective. The researcher must be very careful that explanatory statements do not unduly influence the response by providing biasing or manipulative information. The objective re-

searcher should not skew responses in one direction or another, but rather should solicit genuine opinions, behaviors, and facts from the respondents. An example of such manipulation is as follows: "One of the Ten Commandments says, 'Thou shalt not kill.' Do you believe that the state has the right to exercise capital punishment?" More often, manipulative information is less obvious. The following question, adapted from a public opinion survey prior to a major local election, asked potential voters about funding for the cultural arts:

EXAMPLE 3.2

The federal government spends approximately \$1,200 per U.S. resident on national defense. Do you believe that the federal government is appropriately allocating funds for national parklands and recreational facilities by designating approximately \$10 per resident for this purpose?

Yes _____ No _____ No opinion _____

Whereas the researcher may have provided the information about defense spending in order to provide perspective to the potential respondent, this information may also be manipulative by characterizing the funding for parks as comparatively inconsequential and, therefore, inadequate. A more straightforward question, without reference to the defense budget, may well generate an entirely different response.

Unfortunately, manipulative information is occasionally incorporated deliberately into a questionnaire. It is not uncommon for certain clients to want to use such surveys for publicity purposes or to influence voter opinion. The small-town newspaper survey referred to previously contains the following question, which can be considered to contain manipulative information:

EXAMPLE 3.3

Do you agree with the current Alpine Planning Group's recommendation to build public trails on public right-of-ways and, if needed for safety, to enlarge the public right-of-ways?

(This would enable our residents, as well as the outside public, to use Alpine-area public trails to access nearby Cleveland National Forest without crossing Alpiners' private property. This would also minimize the liability, insurance, privacy, and safety problems posed to property owners by allowing public access to private property.)

The manipulative information is in the lengthy explanation, which can serve to bias the respondent toward an affirmative response. The information contained in that explanation may or may not be correct. It is clearly subject to some interpretation. Furthermore, there may be a problem in invoking the endorsement of what might be perceived to be an organization or institution with particular expertise, as in the earlier reference to the Ten Commandments. Referring to the Alpine Planning Group does not present such a significant biasing problem, but the researcher must be cognizant of the biasing potential involved in citing authorities such as religious organizations or highly respected public figures.

This discussion should not be construed as indicating that all explanatory information related to a question is necessarily manipulative. Below is an example of an appropriate use of an explanatory statement.

EXAMPLE 3.4

In July 1988, Caltrans will open a “high-occupancy vehicle” (HOV) lane on I-15 for carpools and buses. This will be a separate lane, from the Carmel Mountain Road interchange to the I-15/163 split, carrying traffic southbound in the morning and northbound in the afternoon. Use of the HOV lane will require that at least two persons be riding in the vehicle.

Will you use the HOV lane to commute to work or in the course of your work?

Yes _____ No _____

If a “Park & Ride” lot were available near the on-ramp, would you be more likely to use the HOV lane?

Yes _____ No _____

Inappropriate Emphasis

The use of boldfaced, italicized, capitalized, or underlined words or phrases within the context of a question may serve to place inappropriate emphasis on these words or phrases. However, emphasis can serve a constructive purpose when the researcher needs to clarify potentially confusing nuances that may exist within the questionnaire (see Exhibit 2.4).

Devices for indicating emphasis are inappropriately used when they are designed to evoke an emotional response or to impose the researcher's concept of significance rather than leaving the determination of what is and is not important to the respondent. Such tactics tend to bias survey results.

An example of inappropriate emphasis is found in the following question:

EXAMPLE 3.5

Your city has been voted one of the *ten best places to live* in America. Please rate your city in terms of the responsiveness of the local government to meet the needs of residents.

Very Good	Good	Neutral	Poor	Very Poor
1	2	3	4	5

Note that this survey question is simultaneously an example of the improper use of an explanatory statement, resulting in manipulative information, and the improper use of underlining, resulting in inappropriate emphasis. Example 3.1 can also serve to illustrate inappropriate emphasis. Its focus on the word *visible* seems to be an effort to disturb the community's rural residents by ascribing some form of visual obtrusiveness to the planned development.

Emotional Words and Phrases

Although they may be clear, simple, and otherwise acceptable, certain words and phrases carry with them the power to elicit emotions. Survey questions must be as neutral as possible to obtain accurate results and to fulfill their obligation to solicit and welcome all points of view. Questions must invite true responses from the entire population and not induce the respondent into giving an answer other than the one he or she would normally give.

The following question provides such an example:

EXAMPLE 3.6

Do you believe that cultural arts are uplifting to the community?

Yes _____ No _____ No opinion _____

The word *uplifting* evokes positive feelings in readers. This question, therefore, can lead the respondent to associate that positive feeling with the cultural arts, thereby making the respondent more receptive to agreeing to funding the arts.

In general, slanderous and prejudicial language must be avoided, as must language that conjures up specifically positive or negative images. The question, “Do

you prefer mountain village-like commercial zoning instead of open car storage, industrial zoning at the entrances to Alpine?" heavily slants the respondent toward the commercial zoning choice through the use of the phrases "mountain village-like" and "open car storage" to modify the competing land-use choices. Such a tactic is inappropriate in that zoning itself does not necessarily dictate design or ultimate use, and it is very possible to have an unattractive commercial development and an attractive industrial one.

Levels of Measurement

Survey data are organized in terms of variables. A variable is a specific characteristic of the population, such as age, sex, or political party preference. Each variable is generally associated with a set of categories that describe the nature and type of variation associated with the characteristic. The variable *sex*, for example, is described by two categories: male and female. Certain opinions are solicited in terms of three categories of response—yes, no, and no opinion. Some variables, on the other hand, such as annual income, can have numerous categories of response, depending on the researcher's purpose and focus.

The variables used in a survey project have distinct measurement properties, referred to as levels of measurement or measurement scales. Some variables can only be classified into labeled categories (nominal scale); other variables are intrinsically capable of being ranked or ordered (ordinal scale); and still other variables not only imply a ranking but also are associated with certain standard units of value that determine exactly by how much the categories of the variable differ (interval scale).

Nominal Scale

The nominal level of measurement simply involves the process of identifying or labeling the observations that constitute the survey data. In the nominal scale, data can be placed into categories and counted only with regard to frequency of occurrence. No ordering or valuation is implied. For example, a variable such as political party preference might be categorized into three possible responses: Republican, Democrat, and Independent. These response categories only serve the function of enumerating the number of survey respondents who indicate their respective affiliations. No ranking or ordering of the parties is specified or implied. Similarly, no valuation unit is available to permit the determination of the extent of each respondent's affiliation.

Ordinal Scale

The ordinal level of measurement goes a step beyond the nominal scale; it seeks to rank categories of the variable in terms of the extent to which they possess the characteristic of the variable. The ordinal level of measurement provides information about the ordering of categories but does not indicate the magnitude of differences among these categories. An example of the ordinal scale can be found in the variable of education—specifically, with regard to highest academic degree received. Potential responses for this variable might include doctoral, master's, and bachelor's degrees or other formal education below the level of a bachelor's degree. It is clear that these categories possess an ordinality or ranking, but they do not by themselves reveal any specific measure of the amount of difference in educational attainment.

Interval Scale

The interval level of measurement yields the greatest amount of information about the variable. It labels, orders, and uses constant units of measurement to indicate the exact value of each category of response. Variables such as income, height, age, distance, and temperature are associated with established determinants of measure that provide precise indications of the value of each category and the differences among them. Whereas ordinal levels of measurement with regard to age, for example, might include categories such as infant, child, adolescent, and adult, interval levels of measurement for age would entail precise indications in terms of established measures, such as years, months, or days.

Formatting of Questions

Whereas open-ended questions are relatively easy to present within a questionnaire, requiring simply an ample number of lines for the respondent to write an answer in full, closed-ended questions entail a greater range of considerations. The major issues related to the layout of closed-ended questions make up the balance of this chapter.

Basic Response Category Format

In formatting response category alternatives, the primary guideline to which the researcher must adhere is clarity of presentation. The choices must be clearly

delineated so as to provide no confusion to the respondent or to the researcher when she or he examines the responses. The researcher must be able to recognize precisely what response choice has been indicated. Of particular importance is that each question be unambiguously associated with one and only one response category, with no overlapping of categories. Generally, either a box () or a line (_) is provided next to the responses, and the responses are, preferably, vertically organized with sufficient space between categories.

There may be occasions when the researcher wishes to conserve space, in order to keep entire questions and their associated response categories together on one page, for instance, or to save paper and printing costs. Questions that involve a relatively small number of response alternatives can be organized horizontally as long as adequate space is provided between the possible responses so that the respondent can easily identify the appropriate place to indicate the response and not inadvertently mark the line on the wrong side of the answer. In Example 3.7, Question 1 can be arranged in the format of Question 2 to conserve space.

EXAMPLE 3.7

1. In your opinion, does San Diego need a rail transit system?

Yes
 No
 No opinion

2. In your opinion, does San Diego need a rail transit system?

Yes No No opinion

Some questions ask the respondent to circle the appropriate response. We do not recommend this device, because circled responses tend to be less easy to read during the data entry process, as discussed in Chapter Four.

Number of Alternative Responses

As discussed in Chapter Two, it is important to have as comprehensive a list of alternative responses as possible within each closed-ended question. However, the researcher must be careful that the number of fixed alternatives does not become so unwieldy that it confuses or intimidates the respondent. Ideally, in a mail-out survey there should be fewer than ten response alternatives for each question (this also has certain computer coding advantages—see Chapter Four). In some

*Max 15
recommend
upto 10*

circumstances it may be necessary to increase that number of responses to an approximate maximum of fifteen. If it is suspected (either through professional judgment, previous knowledge, or the formal pretest) that there will be a large number of very distinct response alternatives to a question that will be somewhat difficult to combine and that those choices will each be represented by a respectable percentage (say, 3 to 5 percent) of the total responses, then the researcher is justified in expanding the number of alternative response categories to the maximum of fifteen. The balance of choices can be handled through the use of an "Other, please specify" category. When the number of alternative responses in an in-person survey is large, the interviewer can show the respondent a card with the choices elaborated on it. The maximum number of alternatives in such surveys can even be extended beyond fifteen, up to twenty. On the other hand, a lengthy response list becomes problematic in the telephone survey format, where fifteen to twenty response categories are far too many. The number must be held to a maximum of six for the respondent to be able to remember and choose among them as they are read aloud by the interviewer.

Structure of Categories for Interval Scale Variables

Interval scale variables pose special problems for structuring the alternative response categories. By the nature of their scale, nominal and ordinal variables have clearly identifiable categories in which there is, generally, little latitude with regard to assigning cases. For instance, a survey planned for implementation at a local zoo contained a question designed to determine exhibit preferences among zoo visitors. It could be anticipated that such a question would elicit responses such as petting corrals, reptile exhibits, or a tiger pavilion. All responses could be placed in a few possible categories that would be both reasonable and informative. On the other hand, a question concerning the age of a respondent has an infinite number of possible ranges and interval sizes into which responses can be categorized. If, for example, the respondent is forty-three years of age, category alternatives for this one answer alone might include "35–44," "40–49," "40–44," "38–50," "over 40," and "under 50." Hence, deciding on the structure of categories for interval scale variables involves a greater degree of judgment and discretion on the part of the researcher.

There are several guidelines and rules of thumb that must be considered in this decision:

- Ideally, interval scale categories should be as equal as possible in terms of their interval sizes. In the case of age, fixed intervals such as "0–9," "10–19," and "20–29" should be considered an appropriate starting point.

- Each category should contain a reasonable number of responses. As discussed, a manageable number of categories should be provided, and categories with very few respondents should be avoided. On the other hand, categories with a very large number of respondents might tend to obscure details that are important to the focus of the study.
- The boundaries of the categories should conform to traditional breaking points wherever possible. It is more desirable, therefore, to use income categories such as “\$10,000–\$20,000” rather than “\$11,100–\$21,100.”
- Each category should consist of responses that are evenly distributed throughout its range of values. This assumption is necessary in order to avoid a skewed distribution of responses and to facilitate statistical analysis. For example, suppose that a researcher is conducting a survey in which respondents must be graduates of a four-year college in order to participate. For the variable of age, the category of “20 and less than 25” should be avoided, because most college graduates are at least twenty-two years old. Hence, the anticipated distribution within the category would be skewed toward the upper age groups rather than being evenly distributed. The pretest of the survey instrument is of particular importance in helping to predict whether or not these preestablished categories will yield a relatively even distribution.

It may not be possible to satisfy all of the above guidelines in any given situation. A potential difficulty in the application of these guidelines occurs when traditional category boundaries conflict with the principle of nonoverlapping categories. In the case of income, for instance, categories with traditional boundaries such as “\$30,000–\$40,000” and “\$40,000–\$50,000” are not acceptable within the same question, because an individual who earns an annual income of \$40,000 applies to more than one category. An acceptable alternative would be “\$30,000–\$39,999” and “\$40,000–\$49,999,” which assumes that all responses are rounded to the nearest dollar (or “\$30,000–\$39,999.99” and “\$40,000–\$49,999.99” without that assumption). Observations that in theory can assume the value of any number in a continuous interval require class boundaries that are inclusive of all such possible values. The use of the terms *under* and *over* can obviate any problems in the assignment of observations to the appropriate categories in such continuous variables. In point of fact, it is recommended that this format for class boundary determination be used for all variables except those for which whole number values are the only possible responses (for instance, number of children in a household). Hence, an even more appropriate format for these income categories would be “\$30,000 and under \$40,000” and “\$40,000 and under \$50,000,” because of its clarity and simplicity and its conformity with traditional class boundaries.

Another deviation from these guidelines might arise with regard to interval sizes. Although it is desirable to maintain equal interval sizes for an income distribution, this objective may not satisfy the guideline that each category of the variable receive a reasonable number of responses. Typically, the frequency of response declines at higher income levels. Therefore, researchers often expand the size of category intervals at the higher income ranges in order to ensure that a reasonable number of responses per category is maintained rather than burdening the audience with unnecessary detail that is of minor consequence to the study. There is an element of proportion that is also important in category construction. That is, the difference between annual incomes of \$10,000 and \$20,000 is effectively much more significant than the difference between incomes of \$150,000 and \$160,000. Furthermore, there will always be some individuals who earn enormous annual incomes. Intervals cannot reasonably be provided in anticipation of these relatively few responses. Therefore, income questions should provide an unbounded upper-income category to account for this likelihood. Age distributions and certain other socioeconomic variables also demonstrate these patterns of response and should be treated similarly. Example 3.8 shows a reasonable breakdown of income categories.

EXAMPLE 3.8

Please indicate the category that best represents your total annual household income.

- Under \$10,000
- \$10,000 and under \$20,000
- \$20,000 and under \$30,000
- \$30,000 and under \$40,000
- \$40,000 and under \$50,000
- \$50,000 and under \$75,000
- \$75,000 and over

Order of Response Alternatives

The list of alternative responses may possess an inherent logical order. This order must be replicated in the elaboration of these categories within the question. Ordinal or interval data are obvious examples, as indicated in the following example:

EXAMPLE 3.9

How would you rate your day at Sengme Oaks Water Park?

- Very good
- Good
- Fair
- Poor
- Very poor

It clearly would not make sense to reorder the responses in Examples 3.8 or 3.9. Nominal data categories, on the other hand, should be randomly listed so as deliberately to eliminate any potential biasing effects of a particular sequence. Therefore, when conducting telephone or in-person interviews, the order in which these response choices are read to the respondent should be periodically shuffled. For budgetary reasons and computer coding purposes, this shuffling is frequently not feasible for mail-out surveys. However, the sequence of response alternatives in mail-out surveys is less of an issue because the respondent is able to review the choices more easily than in other interview formats.

Multiple Responses

On occasion, a question may require more than one response, as demonstrated in Examples 3.10 and 3.11. These two examples represent the two basic types of multiple-response questions: in the first, the respondent is asked to rank preferences; in the second, choices are indicated without regard to their order. In constructing the questionnaire, it should be made very clear to the respondent if more than one response is acceptable or if a ranking is requested.

EXAMPLE 3.10

What kinds of entertainment would you most like to have scheduled at the new Performing Arts Center? (Indicate your highest priority with a 1, your second priority with a 2, and your third priority with a 3.)

- Plays
- Musicals
- Lectures
- Classical music
- Rock music
- Country music
- "Popular" music
- Dance
- Other (please specify) _____

EXAMPLE 3.11

In what ways could police officers improve their performance? (Interviewer: If respondent indicates that no improvement is needed, check the first box.) Check the two most important.

- No improvement needed
- Concentrate on important duties such as serious crime
- Be more prompt, responsive, alert
- Be more courteous and improve their attitude toward community
- Be more qualified in terms of training
- Need more Native American policemen on the reservations
- Other (specify) _____
- Do not know

In questions where the researcher requests only one response but where there may be an inclination on the part of the respondent to supply more than one, instructions to "check only one" must be very clear, as in the following example:

EXAMPLE 3.12

For which of the following pool activities would you most prefer to have "adults only" time periods designated? (Check only one.) If you do not want designated "adults only" time periods, check the last choice.

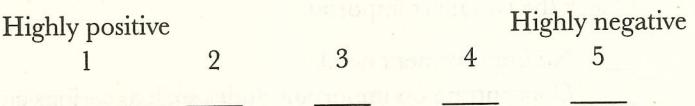
- Lap swimming (exercise)
- Water aerobic exercise classes
- General recreational swimming
- Organized competitive swimming
- Instructional swimming (swimming lessons)
- Do not want "adults only" time periods

Scaled Responses

Some questions require the use of a scaled response mechanism, in which a continuum of response alternatives is provided for the respondent to consider. The following example demonstrates a Likert scale used in a survey of a small city's business community. A Likert scale entails a five-, seven-, or nine-point rating scale in which the attitude of the respondent is measured on a continuum from highly favorable to highly unfavorable, or vice versa, with an equal number of positive and negative response possibilities and one middle or neutral category.

EXAMPLE 3.13

What is your general impression of how the Susanville city government affects your business?



The extremes of such scales must be labeled in order to orient the respondent. It is also acceptable to label each numerical category on the scale. Generally, scaled responses work best horizontally to allow respondents to perceive the continuum. Caution should be exercised to provide adequate spacing between alternatives in the layout of the question.

The Likert scale works particularly well in the context of a series of questions that seek to elicit attitudinal information about one specific subject matter. Exhibit 3.1 is an example of such a series of questions that seeks to elicit the attitudes of professional urban planners about their jobs and their degrees of satisfaction.

When a series of questions such as the one presented in Exhibit 3.1 has the same set of response categories, it would be prohibitively wasteful of space and monotonous to list question after question for several pages. In such circumstances, these questions can be efficiently grouped together in a matrix or gridlike format.

It should be emphasized that although the Likert scale is quite common in survey research, it is only one of several types of scales available to the researcher. For instance, Exhibit 3.2 shows a series of scaled questions that are not in Likert form in that they do not solicit opinions ranked on one continuum from low to high or from high to low.

All scaled response series should adhere to certain principles:

- The number of questions in the series should generally consist of two to ten items, depending on the complexity of the subject matter and the anticipated tolerance of the potential respondents.
- The questions chosen for the series should cover as many relevant aspects of the subject matter under consideration as possible.
- The questions should be unidimensional; that is, they should be consistent and concerned substantially with one basic issue.
- The scale itself must be logical and consistent with a continuum.
- For each question in the series, the scale must measure the dimensions of response in the same order. For example, in Exhibit 3.1, the high end of the scale always measures dissatisfaction, while the low end always measures satisfaction.

EXHIBIT 3.1. QUESTIONS DESIGNED TO ELICIT ATTITUDES.

Please indicate your opinion concerning the following characteristics of your present job.

Characteristics of Present Job	(1) Strongly Agree	(2) Agree	(3) Neutral	(4) Disagree	(5) Strongly Disagree	Mean
Opportunity to gain increased responsibility						
Opportunity to influence internal agency policies						
Opportunity to grow professionally (enhance skills and abilities)						
Opportunity to provide a useful public service						
Recognition of my contribution to the agency						
Sufficient remuneration for my efforts						
Opportunity to develop congenial relationships among colleagues						
Adequate resources to perform any assigned tasks						
Adequate evaluation of the quality of my work						
Reason to take pride in my work						

EXHIBIT 3.2. SCALED QUESTIONS NOT IN LIKERT FORM.

Please indicate if you feel that the following services and facilities are *adequate* or *inadequate* in Columbus. Please indicate if you feel that these services have *improved*, *gotten worse*, or *remained about the same* since you have lived in Columbus.

	Check one		Check one		Remained the Same
	Adequate	Inadequate	Improved	Gotten Worse	
	1	2	1	2	3
Street and sidewalk repair					
Police protection					
Fire protection					
Paramedic services					
Library facilities					
Recreational programs					
Park and parkway maintenance					
Street cleaning					
Activities for youths					
Traffic movement					
Animal control					

Interviewer Instructions

Clear instructions are of great importance to both the mail-out respondent and the telephone or in-person interviewer. The mail-out survey respondent, in particular, must have explicit instructions concerning how to properly complete the questionnaire. Instructions that are incorporated as part of the question itself must be both clear and easily seen. Although this is less important in telephone and in-person surveys because of the involvement of a trained interviewer, the instructions should still adhere to the principles of clarity and noticeability so that the interviewer does not occasionally forget the proper implementation of the survey instrument, which may happen no matter how facile he or she may have become in its administration.

In addition to filtering questions, instructions are needed to inform the respondent of the number of responses to be specified. Various examples throughout this chapter (such as Examples 3.10 and 3.11) illustrate this situation. Furthermore, in telephone and in-person interviews, it is possible that certain information should not be read aloud to the respondent and should only be tallied if it is volunteered, such as the "not sure" response in the following example:

2. [ASK IF "YES" IN Q.1.] How would you rate your chances of voting in this year's upcoming elections for city council and this year's ballot propositions?

Excellent [ASK Q.3]

Good [ASK Q.3]

Fair [ASK Q.3]

Poor [DISQUALIFY]

[DO NOT READ]—Not sure [ASK Q.3]

Other information, such as the sex of the respondent, often does not need to be asked for, especially in telephone or in-person interviews. In such cases, this information can be gathered directly by observation, and instructions should be provided to the interviewer to make certain that the information is noted, but not asked:

[DO NOT READ] Sex of the respondent

Male

Female

EXERCISES

1. Referring to the types of information that sample surveys solicit, as presented in Chapter One (descriptive, behavioral, and preferential), write two sample questions for each of these three informational categories. Verify that none of the questions violates any of the principles of question wording.
2. Identify the level of measurement for the following variables and their categories:
 - a. Kinds of bears (polar, grizzly, black)
 - b. Resort destinations (Puerto Vallarta, Miami Beach, Hawaii)
 - c. Decibel readings at test site (under 100 dB, 100 to 200 dB)
 - d. Army rank (general, colonel, sergeant)
 - e. Income classification (upper, middle, lower)
 - f. Cities in New Mexico (Santa Fe, Albuquerque, Truth-or-Consequences)
 - g. Movie rating classifications (G, PG, PG-13, R)
 - h. Richter scale seismic measurements (3.5, 6.0, 7.2)
 - i. Religious denominations (Protestant, Catholic, Jewish)
 - j. Class rank of graduating seniors (first, tenth)
3. Consider the following questions from various sample surveys, and indicate what problem or problems exist in the question phrasing.
 - a. Do you believe that undocumented immigrants should be allowed to receive AFDC payments?
 1. Yes
 2. No
 3. No opinion
 - b. The cornerstone of our democracy, the Bill of Rights, guarantees freedom of speech. Do you believe that subversives have the right to advocate the illegal overthrow of the U.S. government?
 1. Yes
 2. No
 3. No opinion
 - c. Please indicate the number of institutions with which you have a personal relationship.
 - d. Your city has one of the *most efficient* governments in the country. Please rate your city in terms of its overall efficiency.

1	2	3	4
Very favorable	Favorable	Neutral	Unfavorable

- e. Are you satisfied with traffic flow and parking availability in your neighborhood?
 1. Yes
 2. No
 3. No opinion

- f. Do you believe that euthanasia should be practiced if the patient is hopelessly ill or provides consent?
 - 1. Yes
 - 2. No
 - 3. No opinion
- g. Please indicate your income below:
 - 1. Under \$40,000
 - 2. \$40,000 and under \$60,000
 - 3. \$60,000-\$100,000
 - 4. \$100,000-\$125,000
 - 5. Over \$125,000-\$200,000
- h. What kinds of activities would you like to see more of in your community?
 - 1. Plays
 - 2. Music
 - 3. Dancing
 - 4. Lectures
 - 5. Ball games
 - 6. Movies
- 4. [For students] Draft a survey instrument of approximately ten questions to be administered to other students in your program concerning their satisfaction levels regarding the curriculum and quality of instruction.
- 5. [For working professionals] Draft a survey instrument of approximately ten questions to be administered to personnel in your department concerning their overall job satisfaction.

CHAPTER FOUR

ADMINISTERING THE QUESTIONNAIRE

The process of converting the survey instrument into survey data consists of a series of stages. This chapter begins with an explanation of how to precode the survey instrument for computerization and data reduction. It then proceeds with a discussion of issues related to interviewing, including interviewer selection and training, the implementation and monitoring of the three primary types of surveys (mail-out, telephone, and in-person), and ethical considerations associated with interviewing respondents. This chapter also addresses the issue of data editing or "cleaning," especially as it applies to postcoding responses to open-ended questions. The chapter concludes with a presentation of various considerations associated with computer entry of survey data.

Precoding the Survey Instrument

The nature of survey research is such that most survey projects are too large for noncomputerized data processing. Computers are therefore extremely helpful tools; however, computers require that the elicited responses be translated into numerical codes. The most efficient coding process is one that allows the computer operator to enter the responses directly from the survey instrument, without the need for any intermediate step.

To facilitate data entry, numerical codes should be provided for each category of response at the time the questionnaire is prepared in final form. Example 4.1