

others would influence the likelihood that they would help a victim. They uniformly said that it would not. Research findings such as these should make us extremely cautious of reaching conclusions about people's behavior solely on the basis of verbal reports. Of course, we should be equally cautious of reaching conclusions about what people think solely on the basis of direct observation of their behavior.

Petzel et al. (1973) used a more subtle method of testing the validity of respondents' answers. As part of a drug survey among high school students, they included a question about the students' use of a fictitious drug. Some respondents said they used this drug. Interestingly, admitted users of the bogus drug were different from the other respondents on almost every question concerning drug use. As might be expected, those reporting using the bogus drug consistently reported more drug use than other respondents. The results also showed that the percentage of admitted users of the drug was small (less than 4 percent). Including these respondents did not significantly alter the proportion of respondents admitting or denying the use of various drugs.

One final point needs to be made about the validity of survey results. The process of doing a survey has much in common with the process of writing an essay. You often begin with a grand topic that must be focused so that it can be covered manageably. As you narrow your focus, you may sometimes have the feeling that your original topic has been lost or at least made trivial. No essay can capture all of the aspects of a given topic, and no 20-item or even 200-item questionnaire can do so, either. Survey research, like the rest of the scientific enterprise, is built on faith that compiling reliable findings in a series of limited studies will eventually lead to increased understanding of the important broader issues we face.

## PREPARING THE QUESTIONNAIRE

### STEPS IN PREPARING A QUESTIONNAIRE

The six basic steps in preparing a questionnaire are listed in Table 3.7. The warning "Watch out for that first step!" is appropriate here. The first step in questionnaire construction, deciding what information is to be sought, should actually be the first step in planning the survey as a whole. This de-

**TABLE 3.7** SIX BASIC STEPS IN PREPARING A QUESTIONNAIRE

- 
- Step 1. Decide what information should be sought.
  - Step 2. Decide what type of questionnaire should be used.
  - Step 3. Write a first draft of the questionnaire.
  - Step 4. Reexamine and revise the questionnaire.
  - Step 5. Pretest the questionnaire.
  - Step 6. Edit the questionnaire and specify procedures for its use.
-

cision, of course, determines the nature of the questions included in the questionnaire. It is important to project what the results are likely to be if the proposed questionnaire is used and then to decide whether these "findings" answer the questions that the study is intended to address. Surveys are frequently done under considerable time pressure, and inexperienced researchers are especially prone to being impatient. Just remember that a poorly conceived questionnaire takes just as much time and effort to administer and to analyze as a well-conceived questionnaire. The difference is that a well-constructed questionnaire leads to interpretable results. The best that can be said for a poorly designed one is that it is a good way to learn how important careful deliberation is in the planning stages.

Once the information to be sought from respondents has been clearly specified, the next step is to decide what type of questionnaire should be used. For example, will the questionnaire be self-administered or will trained interviewers be using it? This decision is determined primarily by the survey method that has been selected. For instance, if a telephone survey is to be done, trained interviewers will be needed. In designing the questionnaire, one should also consider using items that have been prepared by other researchers. There is no reason to develop your own instrument to assess racial prejudice if a reliable and valid one is already available. Besides, if you use items from a questionnaire that has already been used, you can compare your results directly to those obtained in earlier studies.

If you decide that no available instrument suits your needs, you will have to take the third step and write a first draft of your own questionnaire. Guidelines concerning the format and ordering of questions, as well as suggestions for wording questions effectively, will be presented in later sections of this chapter.

The fourth step in questionnaire construction, reexamining and rewriting, is an essential one. Questions that appear objective and unambiguous to you may strike others as slanted and ambiguous. It is most helpful to have your questionnaire reviewed by experts, both those who have knowledge of survey research methods and those with expertise in the area on which your study is focused. For example, if you are doing a survey of students' attitudes toward the campus food service, it would be advisable to have your questionnaire reviewed by the campus food service director. When you are dealing with a controversial topic, it is especially important to have representatives of both sides of the issue screen your questions for possible bias. Sometimes no one particular wording can be agreed on by all. In such cases, the *split-ballot technique* is helpful. In this technique different wordings of the same questions are used for equivalent samples of respondents. The effect of the wording can be directly examined by comparing responses made in these two (or more) samples.

By far the most critical step in the development of a sound questionnaire is Step 5, the pretest. A pretest involves actually administering the questionnaire to a small sample of respondents under conditions as much as possible like those to be used in the final administration of the survey. Pretest respon-

dents must also be typical of those to be included in the final sample; it makes little sense to pretest a survey of nursing home residents by administering the questionnaire to college students. There is one way, however, in which a pretest does differ from the final administration of the survey. Respondents should be interviewed at length regarding their reactions to individual questions and to the questionnaire as a whole. This provides information about potentially ambiguous or offensive items.

The pretest should also serve as a "dress rehearsal" for interviewers, who should be closely supervised during this stage to ensure that they understand and adhere to the proper procedures for administering the questionnaire. If major changes have to be made as a result of problems arising during the pretest, a second pretest may be needed to determine whether these changes solved the problems originally encountered. After pretesting is complete, the final step is to edit the questionnaire and specify the procedures to be followed in its final administration. Before turning our attention to procedures used in analyzing the results of the completed questionnaire, we need to address a few additional issues involved in questionnaire construction. In the next two sections we will consider two sets of guidelines: one for writing questions and one for the general format of a questionnaire.

### GUIDELINES FOR EFFECTIVE WORDING OF QUESTIONS

Lawyers have long known that how a question is phrased has great impact on how that question is answered. Survey researchers need to be equally conscious of this principle. This point is illustrated in a survey Loftus (1979a) conducted for the manufacturer of a leading headache remedy. She found that people reported having more headaches when they were asked "Do you get headaches frequently and, if so, how often?" than when they were asked "Do you get headaches occasionally and, if so, how often?" Unfortunately, the extent of the influence of the wording of questions in a given survey can almost never be determined precisely. Therefore the exact wording of critical questions should always be reported along with the data describing respondents' answers (see Box 3.4).

There are certain guidelines to follow to minimize problems arising from the phrasing of survey questions. These guidelines can be applied to **open-ended** or **free-response** questions and to **closed** or **multiple-choice** questions. *Free-response* questions, like the essay questions on a classroom test, merely specify the area to be addressed in a response. For example, the question "What are your views on the legalizing of abortion?" is a free-response question. By contrast, *closed questions* provide specific response alternatives. "Is police protection very good, fairly good, neither good nor bad, not very good, or not good at all?" is a closed question about the quality of police protection in a community.

The advantages of free-response questions are that they can be written more quickly and that they offer the respondent greater flexibility. However,

these advantages are often more than offset by the difficulties that arise in recording and scoring responses to open-ended questions. For example, extensive coding is frequently necessary before rambling responses to open-ended questions can be summarized succinctly. Closed questions, on the other hand, are more difficult to write, but they can be answered more easily and quickly and fewer scoring problems arise. It is also much easier to summarize responses to multiple-choice questions, because answers are readily comparable across respondents. A major disadvantage of closed questions is that they reduce expressiveness and spontaneity. Further, the possibility exists that the respondent will have to choose a less than preferred response because no presented alternative really captures his or her views. Hence, the responses obtained may not accurately reflect the respondent's opinion.

Newcomb et al., (1967) used both open-ended and closed questions in a survey of students' attitudes. Their survey was done in two stages. In the first stage, student respondents were asked a series of open-ended questions about how their lives had changed as a result of having attended college. The trained interviewers used probes extensively and effectively in this stage. A self-administered questionnaire was then developed for the second stage of the survey. During this phase, a second sample of students rated how much they had changed in each of a number of areas. Using the answers to the original set of open-ended questions, the researchers identified specific areas of change for these closed questions. The survey revealed that one area in which change did occur was students' political views. What is more, these changes were shown to persist well after the students left college.

Several characteristics of good questionnaire items are listed in Table 3.8. For instance, regardless of the type of question used, the vocabulary should be simple, direct, and familiar to all respondents. Questions should be as clear and specific as possible. "Double-barreled" questions should be avoided. An example of a double-barreled question is: "Have you suffered from headaches and nausea recently?" A person may respond "no" if both symptoms have not occurred at exactly the same time or may respond "yes" if either symptom has occurred. The solution to the problem of double-barreled questions is a simple one—rewrite them as separate questions. Survey questions should be as short as possible without sacrificing the clarity of the question's meaning; twenty or fewer words should suffice for most sur-

**TABLE 3.8** GOOD QUESTIONNAIRE ITEMS SHOULD...

- 
- 1 Include vocabulary that is simple, direct, and familiar to all respondents
  - 2 Be clear and specific
  - 3 *Not* involve leading, loaded, and double-barreled questions
  - 4 Be as short as possible (twenty or fewer words)
  - 5 Include all conditional information prior to the key idea
  - 6 Be edited for readability
-

vey questions. Each question should be carefully edited for readability and should be phrased in such a way that all conditional information precedes the key idea. For example, it would be better to ask, "If you were forced to leave your present job, what type of work would you seek?" than to ask, "What type of work would you seek if you were forced to leave your present job?"

Leading or loaded questions should also be avoided in a questionnaire. *Leading questions* take the form "Most people favor the use of nuclear energy. What do you think?" To avoid bias, it is better to mention all possible perspectives or to mention none. A survey question about attitudes toward nuclear energy could read either: "Some people favor the use of nuclear energy, some people oppose the use of nuclear energy, and some people have no opinion one way or the other. What do you think?" or "What do you think about the use of nuclear energy?" *Loaded questions* are those that contain emotion-laden words. For example, terms such as "radical" and "racist" should be avoided. To guard against loaded questions, it is best to have your questionnaire reviewed by individuals representing a range of social and political perspectives.

#### GUIDELINES FOR GENERAL FORMAT OF THE QUESTIONNAIRE

Two aspects of the general format should be considered in constructing the final copy of a questionnaire: the design or layout of the questionnaire and the ordering of questions. An effort should be made to make the design of the questionnaire attractive, but the emphasis should be on making it as easy as possible to use. A section of a well-designed questionnaire is shown in Table 3.9. This questionnaire was used by trained interviewers in a survey done by the Institute for Social Research at the University of Michigan. The aim of the survey was to examine the quality of American life (Campbell et al., 1975). Several characteristics of this questionnaire are noteworthy. Each question is identified with a letter indicating the section of the questionnaire and a number specifying the individual question. This is done to facilitate later scoring and analysis of responses. The arrangement of the questions on each page is compact, but the structure is designed to make it easy to read the questions and to record responses. Whenever possible, questions with the same response format appear together. When multiple-choice questions are asked, a note is included to remind the interviewer to give the respondent a card listing the response alternatives so that the respondent can concentrate on the question and not on remembering the alternatives. At the beginning of the first question the respondent is given a brief rationale for the study as a whole, but this preamble is kept short so as to require as little of the respondent's time as possible.

The format of a questionnaire changes somewhat when it is to be self-administered. The first section of a self-administered questionnaire distributed to passengers on Amtrak trains is shown in Table 3.10. The items are

TABLE 3.9 SAMPLE QUESTIONNAIRE FORMAT FOR PERSONAL OR PHONE INTERVIEW

## Section A: City and Neighborhood

**A1** In this study we are interested in measuring the quality of life of people in this country—that is, the things people like and dislike about their homes, cities, neighborhoods, jobs, and so on. The first question is: How long have you lived in (INSERT NAME OF COMMUNITY, OR OF COUNTY IF RURAL)? \_\_\_\_\_ (IF LESS THAN TWO YEARS, GET NUMBER OF MONTHS.)

\_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS, OR SINCE: \_\_\_\_\_

**A2** And how long have you lived here in this (house/apartment)? (IF LESS THAN TWO YEARS, GET NUMBER OF MONTHS.)

\_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS, OR SINCE: \_\_\_\_\_

**A3** I'd like to ask how satisfied you are with some of the main public services you are supposed to receive. (HAND R CARD 1, YELLOW) Please tell me how you feel about each thing I mention, using one of the answers on this card. First, how about the way streets and roads are kept up around here. Would you say this service is *very good*, *fairly good*, *neither good nor bad*, *not very good*, or *not good at all*?

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL
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**A4** How do you feel about the quality of the *public* schools that the children from around here go to—would you say it is *very good*, *fairly good*, *neither good nor bad*, *not very good*, or *not good at all*?

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
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IF R LIVES IN A CITY, TOWN, OR VILLAGE, ASK A5 AND A6; IF RURAL, TURN TO A7

**A5** How good is garbage collection in this neighborhood? Is it *very good*, *fairly good*, *neither good nor bad*, *not very good*, or *not good at all*?

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
--------------	----------------	-------------------------	------------------	--------------------	-------

**A6** What about the parks and playgrounds for children in this neighborhood? Are they *very good*, *fairly good*, *neither good nor bad*, *not very good*, or *not good at all*?

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
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ASK EVERYBODY:

**A7** How about police protection around here. Is it *very good*, *fairly good*, *neither good nor bad*, *not very good*, or *not good at all*?

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
--------------	----------------	-------------------------	------------------	--------------------	-------

**A8** How good do you think relations are between the police and the people around here? Are they *very good, fairly good, neither good nor bad, not very good, or not good at all?*

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
--------------	----------------	-------------------------	------------------	--------------------	-------

**A9** Another way people judge a place to live is what the weather throughout the year is like—as far as you are concerned, how good is the climate here? Is it *very good, fairly good, neither good nor bad, not very good, or not good at all?*

1. VERY GOOD	2. FAIRLY GOOD	3. NEITHER GOOD NOR BAD	4. NOT VERY GOOD	5. NOT GOOD AT ALL	8. DK
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**A10** (HAND R CARD 2, GREEN) Would you say that the local taxes in (NAME CITY OR COUNTY) are *very low, low, moderate, high, or very high?*

1. VERY LOW	2. LOW	3. MODERATE	4. HIGH	5. VERY HIGH	8. DK
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**A11** Have you ever lived in a place where life is much different from what it is here?

1. YES	5. NO —GO TO A12
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↓

**A11a** Where was that? \_\_\_\_\_  
(COUNTRY OR STATE AND CITY)

**A12** Now I have some questions about this neighborhood. First, thinking about the kinds of things you would like to have near where you live—places you go fairly often—how convenient would you say this location is: is it *very convenient, convenient enough, not very convenient, or not convenient at all?*

1. VERY CONVENIENT	2. CONVENIENT ENOUGH	3. NOT VERY CONVENIENT	4. NOT CONVENIENT AT ALL
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arranged in a clear and uncluttered manner, and the order of the questions is clearly indicated by the large boldface numbers. Each item is short and direct and the instructions for each question are simple. The small numbers next to each blank are used to computer-code the responses. The numbers in parentheses indicate column numbers on a computer card, and the other numbers are the ones to be entered if the respondent checks that blank. Such prior coding saves time when the data are to be analyzed and helps reduce the number of errors in data entry. In designing a self-administered questionnaire, one should spare no effort to make it visually appealing; visual appeal increases the response rate. It is most important that the questions be self-explanatory and that respondents be able to complete the questionnaire quickly and correctly.

A crucial issue in deciding the order of the questions in a survey is which question or questions to ask first. The first few questions set the tone for the rest of the questionnaire and determine how willingly and conscientiously

**TABLE 3.10** SAMPLE FORMAT FOR SELF-ADMINISTERED QUESTIONNAIRE

**Illinois Department of Transportation**  
Survey of Amtrak Passengers

Dear Amtrak Passenger:

The Illinois Department of Transportation is conducting a study of rail passenger service on the Chicago–St. Louis corridor to determine what improvements should be made to upgrade service on this route. This survey is designed to identify the preferences and travel needs of passengers on Amtrak trains. Your cooperation in filling out this questionnaire will be greatly appreciated.

A Department representative will collect the survey when you have finished. If you leave your seat before the representative returns, kindly leave the questionnaire on your seat. If you have filled out this survey previously, please take a few minutes to answer questions 1 through 7 and 21 through 26.

Have an enjoyable trip and thank you for your cooperation.

- 1** Please check the station where you boarded this train and the station where you will get off.

Station	Boarded	Will Get Off
Chicago	_____ 01 (6–6)	_____ 01 (7–8)
Joliet	_____ 02	_____ 02
Pontiac	_____ 03	_____ 03
Bloomington	_____ 04	_____ 04
Lincoln	_____ 05	_____ 05
Springfield	_____ 06	_____ 06
Carlinville	_____ 07	_____ 07
Alton	_____ 08	_____ 08
St. Louis	_____ 09	_____ 09
Points in Missouri	_____ 10	_____ 10
Points in Arkansas	_____ 11	_____ 11
Points in Texas	_____ 12	_____ 12

- 2** Please indicate how you reached the station to board this train and how you will reach your next destination after you get off this train. (Check as many as apply.)

	To Station Where You Got On	From Station Where You Will Get off
Automobile	_____ 01 (6–11)	_____ 01 (12–14)
Taxi	_____ 02	_____ 02
City Bus	_____ 03	_____ 03
Airline	_____ 04	_____ 04
Commuter Train	_____ 05	_____ 05
Amtrak Train	_____ 06	_____ 06
Amtrak Shuttle	_____ 07	_____ 07
Intercity Bus	_____ 08	_____ 08
Walker	_____ 09	_____ 09
Other	_____ 10	_____ 10

- 3** Is your car parked at or near an Amtrak Station during this trip?  
Yes \_\_\_\_\_ 15.1 No \_\_\_\_\_ 15.2

- 4** What is the zip code of the place you left to get to this train? (If zip code is unknown, the city and a nearby major street intersection will be sufficient.)

Zip Code \_\_\_\_\_  
16 17 18 19 20

OR: City \_\_\_\_\_

Street  
Intersection \_\_\_\_\_

- 5** What is the zip code (or city and nearby street intersection) of the place where you will be going upon leaving this train?

Zip Code \_\_\_\_\_  
21 22 23 24 25

OR: City \_\_\_\_\_

Street  
Intersection \_\_\_\_\_

- 6** Which one of the following best describes the main purpose of this trip? (Mark only one)

- 26-1 \_\_\_\_\_ Business or work
- 2 \_\_\_\_\_ Vacation or recreation
- 3 \_\_\_\_\_ Travel to or from school
- 4 \_\_\_\_\_ Personal business
- 5 \_\_\_\_\_ Shopping
- 6 \_\_\_\_\_ Visit family or friends
- 7 \_\_\_\_\_ Entertainment/Spectator sport
- 8 \_\_\_\_\_ Other (Please specify) \_\_\_\_\_

- 7** How long before the departure time of this train did you leave for the station?

- 27-1 \_\_\_\_\_ 10–15 minutes
- 2 \_\_\_\_\_ 16–30 minutes
- 3 \_\_\_\_\_ 31–45 minutes
- 4 \_\_\_\_\_ 46–60 minutes
- 5 \_\_\_\_\_ more than 1 hour



respondents will work on subsequent questions. For self-administered questionnaires, it is best to begin with the most interesting set of questions in order to capture the respondent's attention. For example, demographic data should be obtained at the end of a self-administered questionnaire. However, in surveys involving personal or telephone interviews, demographic questions are frequently asked at the beginning because they are easy for the respondent to answer, thus bolstering the respondent's confidence. They also allow time for the interviewer to establish rapport before asking questions about more sensitive matters.

The order of asking particular questions can have dramatic effects, as illustrated in a study by Schuman et al. (1981). They found differential responding depending on the order of two questions concerning abortion, one general and one specific. The general question was "Do you think it should be possible for a pregnant woman to obtain a legal abortion if she is married and does not want any more children?" The more specific question was "Do you think it should be possible for a pregnant woman to obtain a legal abortion if there is a strong chance of a serious defect in the baby?" When the general question was asked first, 60.7 percent of respondents said "yes," but when the general question followed the specific question, only 48.1 percent of respondents said "yes." The corresponding values for the specific question were 84 percent and 83 percent agreement in the first and second positions, respectively. The generally accepted method for dealing with this problem is to use *funnel questions*, which means proceeding from the most general to the most specific when ordering the questions pertaining to a given topic.<sup>1</sup>

Problems resulting from the order of questions can also arise when several questions on a topic are asked and they are all at the same level of specificity. For example, we might ask a series of questions regarding a person's views about several minority groups. Effects due to the order in which such questions are asked can be handled in one of two ways. The first technique is to use exactly the same order for all samples to be compared, thus holding the effect of order constant. This technique does not allow us to determine what the effects of order were. Alternatively, many different orders of the questions can be used within each of the samples to be compared so as to neutralize the effect of order. This problem of dealing with order effects is discussed much more fully in Chapter 6.

The final aspect of the ordering of survey questions that we will consider is the use of *filter questions*—general questions asked of respondents to find out whether they need to be asked more specific questions. For example, the question "Do you own a car?" might precede a series of questions about the

<sup>1</sup>Oppenheim (1966) describes in detail the question-wording plan developed by Gallup called the Quintamimensional Plan of Question Design. The first step is to ask the respondent whether he or she has thought about the issue at all. This is followed by open-ended questions about general feelings and closed questions about specific aspects of the issue. The fourth step involves asking for the respondent's reasons for the views he or she holds. Finally, the interviewer inquires how strongly the respondent's views are held.

costs of maintaining a car. In this instance the respondent would answer the specific questions only if her or his response to the general question was "yes." If that answer was "no," the interviewer would not ask the specific questions (in a self-administered questionnaire, the respondent would be instructed to skip that section). When the filter questions involve objective information ("Are you over 65?"), their use is relatively straightforward. Caution must be exercised, however, in using behavioral or attitudinal questions as filter questions. Smith (1981) first asked respondents whether they approved of hitting another person in "any situations you can imagine." Logically, a negative response to this most general question should imply a negative response to any more specific questions. Nonetheless, over 80 percent of the people who responded "no" to the general question then reported that they approved of hitting another person in specific situations, such as in self-defense. Although findings such as this suggest that filter questions should be used cautiously, the need to demand as little of the respondent's time as possible makes filter questions an essential tool in the design of effective questionnaires.

## SUMMARY

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Survey research provides an accurate and efficient means of describing people's thoughts, opinions, and feelings. Surveys differ in purpose and scope, but they generally involve sampling, the procedure whereby results obtained with a carefully selected sample are used as a basis for describing the entire population of interest. Surveys also involve the use of a predetermined set of questions, generally in the form of a questionnaire. Survey research is typically not very effective for exploratory studies, but the greatest limitation of survey research is the problem of interpreting causal relationships.

Sampling is a procedure whereby a specified number of elements are drawn from a sampling frame that represents an actual list of the possible elements in the population. Our ability to generalize from the sample to the population depends critically on the representativeness of the sample, the extent to which the sample has the same characteristics as the population. Representativeness is best achieved by using probability sampling rather than nonprobability sampling. In simple random sampling, the most common type of probability sampling, every element is equally likely to be included in the sample. Stratified random sampling and cluster sampling provide alternatives when simple random sampling is not sufficient.

There are three general survey methods: mail surveys, personal interviews, and telephone interviews. Mail surveys avoid problems of interviewer bias and are especially well suited for examining personal or embarrassing topics. The problem of response bias is a serious limitation of mail surveys. Personal interviews and phone surveys usually have much higher response rates and provide greater flexibility. The phone survey is the method of choice for most brief surveys.

The survey is administered according to an overall plan called a research design. There are three survey research designs: the one-shot or cross-

sectional study, the successive independent samples study, and the panel or longitudinal study. Cross-sectional surveys focus on describing the characteristics of a population or the differences between two or more populations. Describing changes in attitudes or opinions over time requires the use of successive independent samples or of a panel study. The panel study is generally preferred because it allows the assessment of changes for specific individuals and avoids the problem of noncomparable successive samples.

The analysis of survey results begins with coding open-ended questions and preparing frequency distributions for each item. Measures of relative frequency, such as percentages, are often used to allow comparisons between surveys. If the survey involves interval data, measures of central tendency (such as the mean) and measures of dispersion (such as the standard deviation) should be reported. One analyzes the correlational relationships between variables by using correlational coefficients and cross tabulations. The use of control variables in such analyses can greatly strengthen the evidence for a particular explanation. The validity of survey results, like that of other verbal reports, can be accepted at face value unless there is reason to do otherwise. One such reason is the pressure on respondents to give socially desirable responses. People's behavior does not always conform to what they say they would do, so survey research will never replace direct observation. However, survey research does provide an excellent way to determine people's attitudes and opinions.

Careful planning is required in preparing a questionnaire. Issues requiring attention include the wording of individual questions and the design of the format of the questionnaire itself. The editing and pretesting of questionnaires are essential steps in successful survey research. Individual questions should be simple, direct, clear, and specific. Double-barreled, leading, and loaded questions should be avoided. Open-ended questions are easier to write but more difficult to score; the reverse is true of closed questions. The order of asking questions varies for mail and phone surveys.

#### KEY CONCEPTS

population	cluster sampling
sampling frame	interviewer bias
sample	one-shot or cross-sectional study
element	successive independent samples
representativeness	panel or longitudinal study
biased sample	respondent mortality
nonprobability sampling	confidence interval
probability sampling	social desirability
accidental sampling	open-ended or free-response
purposive sampling	questions
simple random sampling	closed or multiple-choice
stratified random sampling	questions