SURVEY RESEARCH BY TELEPHONE
Second Edition
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come can only be one of convenience. None of the survey techniques is effective if the rare population is mobile or transient.

DATA QUALITY

The goal of any survey project is to obtain complete and accurate responses from respondents. There are, however, many factors that can produce responses that are less than complete and that do not reflect the “true” feelings, attitudes, beliefs, or behavior of the respondent. The occurrence of these types of nonsampling error or measurement effects can be attributed to conditions of the interviewing situation, the response situation, and the questionnaire/interview schedule.

Interviewer Effects

The potential for compromises in data quality as a result of interviewer differences is a greater problem for face-to-face household and intercept surveys than for the telephone survey. Groves and Kahn (1979) found lower interviewer variance in their telephone survey than on the face-to-face component. Interviewer effects are reduced in the telephone survey by virtue of the close supervision provided in a centralized setting. Variations in question order or the manner in which a question is asked can be corrected rather easily in this type of calling facility. The supervisor of an interviewer conducting face-to-face interviews does not have the same control and cannot always prevent interviewers from interjecting their expectations or values into the manner in which they approach a respondent or ask a question. As we shall see in the section on the “social desirability” answering pattern, interviewers contribute significantly to the “demand” characteristics of the interview situation.

The effects of an interviewer can be relatively subtle or they can be more pronounced. Question wording, instruction guidelines, probing, and questionnaire completion are all factors that can be variously distorted by interviewers. This is particularly the case with a face-to-face interviewer where the survey director is extremely dependent on the field staff. Every once in a while we hear a horror story of how an interviewer completed every one of the assigned interviews in his or her own living room. A centralized telephone facility reduces this source of distortion to a considerable extent because of the ability to monitor the interview. (This can include listening in to the interview via monitoring devices). Validity checks by reinterviews on certain items or by following up with respondents to determine if, in fact, they have been interviewed can reduce this problem to some extent in the face-to-face survey. Follow-up checks are impossible with intercept surveys but can be done quite easily for telephone interviews. Even then, this is not infallible since the resources available for validation are usually only sufficient to permit a small portion of the interviews to be checked.

The ability to control interviewer effects by supervision is best achieved in a telephone survey and presents the most difficulty in a face-to-face household survey. Controlling the interviewing or field process is a greater problem for the intercept survey than for the household interview. Even though supervisors cannot listen to intercept interviews unobtrusively as they can with telephone interviews, they can observe the interview, listen casually to the questions and responses, and immediately edit the completed interview for errors (Gates and Solomon, 1982/83). The control problem with intercept surveys is the inability to neutralize the influence of the interview environment.

In general, the data on the effect of interviewers is mixed (Bradburn, 1983: 311) It does appear, however, that student
interviewers produce larger response effects than nonstudents; high status interviewers produce higher response effects than those of lower status; and the most visible characteristics (e.g., race) have the most impact on response. Bradburn (1983: 315) concludes in his summary of the literature that interviewer effects are a small source of response effects. Where they do exist, however, they are mainly a problem in the personal or face-to-face surveys.

*Socially Desirable Response*

There is considerable research demonstrating that responses obtained at various times does not accurately reflect respondents' actual views or feelings but contain considerable variation due to the "demand" characteristic of the interview situation. These characteristics are usually associated with the influence an interviewer has by virtue of his or her presence and the more subtle influence of the interviewer's expectations and/or characteristics. A respondent's answers may be classified as socially desirable if they seem to be given in reaction to what the respondent feels the interviewer would like to hear or to what the respondent should say if he or she is a spokesperson for one or more groups to which they belong. For example, a respondent might respond favorably to legalizing marijuana because he or she is a teacher and "should be" liberal, even though the person is actually against such legalization.

Recent research has shown that an interviewer's race and ethnicity affect responses patterns—that is, produce socially desirable responses—but in a selective fashion. Campbell (1981) determined that race had no general impact on response, except for items related to race. Blacks tended to give "white" responses to these items more so to white interviewers than to black counterparts. These findings corroborate Hatchett and Schuman's 1975/76 work, which also found that a socially desirable response in terms of a deference bias was more likely to occur in mixed-race than consistent-race face-to-face interview situations. In addition, Weeks and Moore (1981) found that ethnicity of the interviewer is not a factor in response to nonsensitive items, but the cause of some differences on sensitive questions.

Most of the literature shows that differences among methods on the rates of socially desirable answers do not vary greatly. However, the general pattern seems to show that mail surveys elicit the lowest rates of socially desirable responses and face-to-face interviews, including intercept surveys, the highest (Wiseman, 1972; Rogers, 1976; Groves and Kahn, 1979, Gates and Soloman, 1982/83; Johnson et al., 1987). These studies verify what survey researchers have known for some time: the more personal the data gathering mode, the greater the likelihood of lower data quality. The problem is that we do not know the specific factors that are responsible for the differences.

*Item Nonresponse*

Recent research demonstrates that even with a very structured training program, interviewers will exhibit considerable variability in their data collection, particularly on certain items. Much of this variability is due to the interviewer's expectations for the interview. Sudman et al. (1977) demonstrated that those interviewers who expected difficulties in administering a questionnaire obtained higher item nonresponse rates than those who did not expect any difficulty. Overall, however, response rates were not affected by these expectations. A replication of this study produced similar results (Singer and Kohnke-Aquirre, 1979). However, both Bailar et al. (1977) and Singer and Kohnke-Aquirre (1979) found that a higher nonresponse rate to the income question in a face-to-face survey was obtained from interviewers who thought it inappropriate to ask this item. Even though these authors concluded that
their data show only modest effects for interviewer expectations, it is well not to disregard this factor in preparing for a survey.

The effects of an interviewer on an item nonresponse should be reduced when interviewers are removed from the face-to-face situation and placed in a telephone facility that permits only verbal cues. It is difficult to detect the features or preferences of a telephone interviewer, but these are easily discernible in a face-to-face interview. Still, the personality of the interviewer can have an effect on responses, even in a telephone interview. Rogers (1976) determined that “warm” or more personable interviewers produced higher item nonresponse rates than did interviewers who could be judged as “cool” or task-oriented in their interview in style. These differences were more pronounced in the face-to-face situation than in the telephone interview (Rogers, 1976: 65).

In general, interviews over the phone or by face-to-face methods do not show significant differences in response variation to most items, such as respondent demographics (Rogers, 1976; Groves and Kahn, 1979; Jordan et al., 1980). However, the telephone tends to produce more missing data on the sensitive income item than the face-to-face interview. Groves and Kahn (1979), who experienced this pattern in their national surveys, asserted that over time this difference was reduced by improved telephone interviewing and better supervision in the centralized setting. Siemiatycki (1979) reported no difference on missing data among the three methods on nonsensitive items, but on the sensitive questions, the mail questionnaire produced lower item nonresponse rates than did the telephone or face-to-face interviews. Groves and Kahn (1979), who experienced this pattern in their national surveys, asserted that over time this difference was reduced by improved telephone interviewing and better supervision in the centralized setting. Siemiatycki (1979) reported no difference on missing data among the three methods on nonsensitive items, but on the sensitive questions, the mail questionnaire produced lower item nonresponse rates than did the telephone or face-to-face interviews. O'Toole et al. (1986) found that the mail survey produced a higher item omission rate than did either telephone or the face-to-face interview. This is contrary to most evidence and may be attributed to the nature of the question (i.e., knowledge vs. attitude) rather than to perceived threat. Finally, the one study comparing intercept and telephone surveys found no significant differences on item nonresponse but the telephone rate was higher (Bush and Hair, 1985). In sum, the telephone and mail survey seem to produce the highest rates of item nonresponse. The presence of the interviewer contributes to lower rates in the household and intercept interview contexts.

**Questionnaire Length and Response**

Length can be defined in a number of ways: number of questions, number of responses required, and, of course, the length of time it takes to complete an interview or questionnaire. The advantage on this factor still seems to rest with the face-to-face interview, where it is not uncommon to obtain interviews of 60-90 minutes in length. Over the longer interview time, questioners can probe in greater depth, go further in establishing rapport, and thus be in a better position to ask sensitive questions. The ability to administer lengthier interviews in a household situation does not apply to intercept surveys, which ordinarily must be limited to interviews of ten minutes or less. This is because the respondent is interrogated in a stream of activity (e.g., shopping) from which he or she may not want to be distracted for any length of time. However, with incentives such as monetary payment, and with quality interviewing these interviews can go as long as 20-30 minutes.

For a long time, telephone interviews were criticized because of the apparent inability to conduct rather lengthy interviews over the phone (Simon, 1978). This detraction is less of a problem today than in the past, however, particularly with the development of new telephone techniques in the areas of questionnaire construction and interviewing procedure. Colombotos (1969) successfully interviewed a specialized population of physicians over the phone for an average of 50 minutes. Rogers (1976) reported no problems with conducting the same length interview with the general public of a metropolitan city. Dillman (1978: 55), utilizing his Total Design Methods (TDM) technique, reported few terminations with telephone interviews lasting 20 minutes on the average. Jordan et al. (1980)
also report no unusual problems (such as terminations or higher item nonresponse rates) with lengthier telephone interviews. This development is significant because with the rising costs of face-to-face interviews, the ability to get large amounts of information over the phone makes this technique very attractive.

Mail surveys can also be attractive from a financial point of view if length is not a serious drawback. Heberlein and Baumgartner (1978) showed no relation between the length of a mail questionnaire and response rate on the first mailing, but did find a negative correlation on subsequent mailouts. Dillman (1978: 55) reported little or no variation on response rates for mail questionnaires up to twelve pages or for those with 125 items or less for either a heterogeneous or homogeneous population. There was a negative effect for questionnaires that exceeded these limits.

Each technique seems to be affected by length but only after a certain point. The intercept is the most contained and the household the least. Length is still a problem for telephone and mail surveys but it seems to be less so because of developments in the area of interviewing and questionnaire construction.

Anonymity/Confidentiality

It is not always easy to convince a respondent that their answers will be confidential. Computers, central data banks, junk mail, and unsolicited invasions of privacy do little to promote a sense of trust. "How did you get my name?" or "How did you get my telephone number?" are often some of the first questions asked during the early stages of a telephone or face-to-face interview. In most interviewing or questionnaire situations the researcher knows the respondent’s name, address, phone number, and/or other identifying information. It is always possible that this information will be included on the completed questionnaire. If an interview or questionnaire is presented as anonymous and there is no apparent identifying information, the respondent may feel greater confidence that his or her replies will not, or cannot, be identified (Simon, 1978). As a result the respondent will be more truthful in responding. However, since it is virtually impossible to find a research effort where there is absolutely no way to trace a respondent, it is more appropriate to compare the four survey methodologies on the dimensions of confidentiality, rather than anonymity.

A confidential response is made by a respondent whose identity is known but kept secret. The intercept survey will be the most advantageous in this regard since the interview is conducted in a setting that does not provide any clue to the respondent’s home, telephone, or other identifiers except some personal characteristics; and, it is impossible to match face to questionnaire at a later time. The mail or telephone survey would also have some advantage in establishing confidentiality. However, in the case of the household face-to-face survey, more identifiable information is known—name, address, dwelling type, physical appearance, and so forth—than with either mail or telephone surveys. Confidentiality can be compromised to some extent by validation call-backs often used in household and telephone surveys. These tell the respondent that his or her name and some identification information have been passed on, if only to the project supervisor. No data on this particular effect are available, however.

It is not known how many respondents surveyed by telephone refuse to participate for privacy reasons. However, in surveys that employ random digit dialing the original identifying information includes only a phone number since it is not necessary to have the respondent’s name. This reduces the possibility of identifying the respondent by traditional means. If more specific geographical location is necessary to some kind of neighborhood analysis, one never asks for the street address
but only for the nearest major intersection or large cross-
streets. Directory sampling provides more identifying informa-
tion and places the telephone survey at a disadvantage in this
regard, almost to the extent of the face-to-face survey.

There is very little research on the relation of refusals,
premature termination, or other patterns of response to the
respondent's feelings of privacy invasion or to a distrust of the
assurances of confidentiality. Edwards (1957) found a higher
occurrence of "don't knows" with a face-to-face survey than
with a survey by "secret ballot." King (1970), Fuller (1974), and
Wildman (1977) found no differences in response rates to mail
surveys between respondents who received questionnaires
with premailed identification numbers and those without.
Research on the impact of confidentiality statements dem-
strates no consistent or significant effects on refusal rates, on
responses to sensitive questions, item nonresponse rates, or
other data quality factors (Reamer, 1979; Singer, 1978; Frey,
1986). There is some evidence, however, that assurances of
confidentiality may increase apprehension on the part of the
respondent and thus lower data quality (Reamer, 1979; Frey,
1986). It is possible that the more vociferous the assurances of
confidentiality, the more likely respondents are careful in their
answers. Refusal to participate or item response probably do
not come as a result of concern with anonymity or confiden-
tiality, but in response to the subject of the survey and to the
manner in which it is presented.

In sum, each of the four methods suffers from a general
distrust of institutions and from the resultant belief that as-
surances of confidentiality are difficult to believe. Many
respondents probably believe that if someone wanted to trace
their responses, he or she could by being sufficiently persistent
and/or creative. The respondents may believe that no one
other than the project director will care about their responses.
If this is the case they need not be concerned about confidenti-
ality. In this context, it is foolish even to talk of anonymity,
since its guarantee is a virtual impossibility. Perhaps all that

survey researchers can hope for is that the quality and reputa-
tion of their craft is such that most people will not distrust a call
to participate in a survey.

**Comparing Survey Methods**

**Asking Sensitive Questions**

Questions that are potentially embarrassing or threatening
to respondents are designated as "sensitive." Recalling the ear-
lier maxim that the more personal the method, the less likely to
get reliable information, it would seem that the face-to-face
interview should elicit more problems with this type of inquiry.
Actually, the opposite seems to be the case. Hochstim (1967),
Wiseman (1972), Lucas and Adams (1977), and Bradburn (1983)
reported few or no differences among survey methods on
response rates to sensitive items. Recent research suggests that
the face-to-face technique experiences lower item nonresponse
rates to this type of question. For example, Johnson, et al.
(1987) report that respondents interviewed in person were
more likely to answer questions on substance abuse than were
respondents to a telephone survey. Groves and Kahn (1979)
and Jordan et al. (1980) report more evasiveness and nonsub-
stantive responses to sensitive items over the telephone than
face-to-face. In fact, Groves and Kahn (1979) found a higher
proportion of persons surveyed by telephone who resisted
responding to these items because they proclaimed feeling un-
easy answering a sensitive question. Siemiatycki (1979) found
that the mail survey obtained the lowest item nonresponse rate
to sensitive items and the telephone the highest. Bush and Hair
(1985) found that response distortion (e.g., answering in socially
desirable fashion) on sensitive items to be higher for the
telephone interview than for the intercept survey. This differ-
ence was attributed to the advantage in anonymity that the
intercept interview has over its telephone counterpart. Thus,
the intercept has the greatest difficulty with sensitive items and
the household face-to-face the least. The differences between
Comparing Survey Methods

mail and telephone survey experience with this type of question is less significant than it once was, although the telephone survey still meets resistance from the respondent.

Complex Questions

Telephone questionnaire usage has been limited to some degree due to criticism that complex questions or those requiring an in-depth response cannot be asked. This type of question will keep respondents on the phone too long, thereby promoting a premature termination or producing responses that are of lower quality than could be obtained with shorter, less demanding questions. In addition, response quality can be compromised because visual aids or other means of response assistance clearly cannot be utilized. Both types of face-to-face interviews do not have these difficulties. Actually, more difficulties exist for asking complex and probing questions in mail surveys than in either of the three other interview methods. In the mail survey it is impossible to probe responses or add clarification if a question is answered incompletely or appears confusing. In addition, only certain visual aids such as a map or photo can be used in the mail survey while the face-to-face interviews are relatively unlimited in the use of visual aids to assist in question clarity. Visual aids cannot be used with the telephone unless mailed to the respondent in advance of the telephone solicitation for an interview. The latter is possible only when an up-to-date list is available and mailing visual aids does increase the cost of the telephone survey that requires their use. Finally, even though mailed in advance, it is possible that the respondent will not be able to locate the proper material at the time the interview is scheduled. The advantage of the use of complex questions goes to the face-to-face interview because of the presence of an interviewer who can verbally clarify any misunderstanding and also offer visual aids (map, response cards, and so forth) to assist the respondent. In the face-to-face situation, cards can be shown to respondents to aid their selection of an appropriate response category. This allows respondents to avoid giving direct answers and thus increases the validity of responses (Groves and Kahn, 1979). The major problem with clarification in a face-to-face situation is in the process of re-asking the question; the interviewer’s bias is less subtle, and on-the-spot rewording can change a question. If “controlled” or “standardized” clarification is not implemented, then question comparability is compromised.

In a mail questionnaire, if a respondent misinterprets a question and his or her response is unclear, there is little that can be done to remedy the situation. A good graphic artist can provide some visual interpretations beyond the simple listing of categories, but again, misinterpretation without clarification is possible. If the respondent feels it necessary to seek clarification of a mail survey question, he or she may go to a friend or family member for consultation. The ramifications of this are obvious—a response that may not reflect the actual feelings of the selected respondent. Consultation with others is virtually impossible with the face-to-face or telephone survey because of the ability of the interviewer to direct response patterns.

There is increasing evidence that complex items can be asked over the phone, even without the assistance of visual aids. Rogers (1976) found no difference in response quality on complex items for both face-to-face and telephone interviews. Still, the problems of clarification discussed with respect to the face-to-face survey prevail. The telephone survey has more difficulty with complex questions, such as those requiring the ranking of several items, than either the mail survey or the two face-to-face methods.

Open-Ended Items

The opportunity to probe is not possible with the mail questionnaire because an interviewer is not present. A less obvious problem with asking open-ended questions (that is, those for which answer categories are not provided) is that they are
demanding of the respondent, particularly for someone who has difficulty expressing their thoughts. It is estimated that nearly 10 percent of the adult population is illiterate. For questionnaires of any complexity, the percentage who could not understand the questions would be even higher; thus, only those with some education could respond. Complicated questionnaires require motivation and patience to write in detail, as well as time and ability (Simon, 1978). This means that one must be very careful in the use of open-ended questions in surveys, particularly in mail questionnaires. However, Heberlein and Baumgartner (1978) found no difference in return rates of mailed questionnaires using closed and open-ended questions. Conner (1985) found open-ended questions could be used in mail surveys but that the answers by women and those with investment in the topic would be more detailed than answers by men or those not interested in the topic. On the other hand, there is usually no problem using this type of question with either telephone or household face-to-face surveys, although there is some evidence that the telephone elicits shorter, truncated answers to open-ended questions (Groves and Kahn, 1979). The intercept survey is limited by setting and time on the administration of the questionnaire; thus, most intercept items are highly structured and require brief answers. However, this does not mean that open-ended items cannot be asked. They can and should be included. The reaction may just be limited in the number of these items that can be included. Neither face-to-face nor telephone interviews provide the opportunity for respondents to deliberate on their answers for very long. The presence of the interviewer is one of those “demand” characteristics that may lead respondents to answer sooner than they would like; the result is often a shorter and more superficial response. This problem could be solved with extensive interviewer training on the probing and clarification of responses. Verbosity, not conciseness, can also be a problem when using this type of question in surveys. Interviewers must be trained in how to terminate an answer, as well as how to stimulate one.

Table 2.1 lists the factors on which mail, telephone, household face-to-face, and intercept surveys are compared and their evaluations as advantages or disadvantages for either methods. In reviewing this table, one needs to keep in mind that a survey does not rise or fall on the implementation or failure to implement any one of these factors. The success of a survey depends on a combination of factors and their interaction. As this list demonstrates, it is also important to point out just how difficult it is to select the appropriate research strategy. Each strategy has its strengths and weaknesses, and each requires careful attention to design and procedure. The telephone survey method cannot be categorically rejected as inferior to the face-to-face approach nor accepted as superior. However, there have been a considerable number of improvements in sampling procedures, questionnaire design, and administrative practice for telephone surveys that make this approach more attractive than ever before. The remaining chapters will outline some of these improvements.
### TABLE 2.1 Comparison of Mail, Face-to-Face, Intercept, and Telephone Surveys

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mail</th>
<th>Face-to-Face</th>
<th>Intercept</th>
<th>Telephone</th>
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<td>4</td>
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<td>3. Personnel requirements:</td>
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<td>4. Time for implementation</td>
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<td>5. Sample coverage</td>
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<td>6. Response rate—general</td>
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<td>7. Refusal rate</td>
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<td>8. Noncontact/nonaccessibility</td>
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<td>9. Ability to obtain response</td>
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<td>10. Respondent within</td>
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<td>11. Sampling special</td>
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<td>a. Control consultation</td>
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<td>13. Obtaining socially</td>
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<td>14. Item nonresponse</td>
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<td>15. Impact of questionnaire</td>
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<td>3</td>
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<td>16. Confidentiality</td>
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<td>17. Ability to ask sensitive</td>
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<td>18. Ask complex questions</td>
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<td>3</td>
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<td>a. Ability to clarify</td>
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<td>1</td>
<td>1</td>
<td>2</td>
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<td>b. Use of visual aids</td>
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<td>19. Use of open-ended</td>
<td>4</td>
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<td>questions</td>
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<tr>
<td>a. Ability to probe</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
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**Key:**
1 = Major advantage  
2 = Minor advantage  
3 = Minor disadvantage  
4 = Major disadvantage  
n/a = not applicable