

A recognized problem in mounting longitudinal surveys concerns the costs and difficulties in maintaining response rates over time. This article details the techniques used to minimize response loss in a longitudinal study which maintained an 89% response rate over five interviews covering a fifteen-year period. These techniques centered on two problems common to all longitudinal studies: the difficulties involved in relocating respondents for subsequent interviews, and the necessity of maintaining respondent cooperation over repeated interviews.

Maintaining Response Rates In Longitudinal Studies

DEBORAH S. FREEDMAN
ARLAND THORNTON
DONALD CAMBURN
University of Michigan

The value of longitudinal studies for social science research is widely recognized, but the difficulties and costs involved in locating and reinterviewing the same respondents frequently have discouraged researchers from attempting longitudinal research. Several recent studies (Clarridge et al., 1977; Crider et al., 1976) have demonstrated, however, that respondents can be followed successfully over fairly long time periods. This is a report on one such study, which maintained contact with 89% of those originally interviewed through four subsequent interviews over a fifteen-year span. The techniques used in this study to maintain contact and rapport with the respondents may prove useful to other researchers.

AUTHORS' NOTE: *The previous waves of this longitudinal study were conducted under the direction of Ronald Freedman, David Goldberg, and Lolagene Coombs of the University of Michigan. The survey reported on here was supported by NICHD grant HD-10407. The authors acknowledge the contribution made to the University of Michigan. Deborah Freedman was a fellow at the East-West Center Population Institute at the time this article was written. The use of the facilities of the Population Institute and the helpful comments of Elizabeth Gould are gratefully acknowledged. An earlier version of this article appeared in the Asia and Pacific Census Forum 5(4)—the newsletter of the Population Institute.*

This longitudinal study used a probability sample of white women residing in the Detroit metropolitan area who had just married or had just given birth to a first, second, or fourth child.¹ The major focus of the study concerned changes in family-building plans and in actual parity to see how these changes were related to other family characteristics. The four previous waves of the study, an initial personal interview in 1962 followed by three telephone reinterviews in 1962, 1963, and 1966, had obtained excellent response rates, beginning with an initial response rate of 92% and subsequently maintaining contact with 94% of the eligible respondents.²

In 1977, eleven years after the 1966 reinterview, the decision was made to attempt to locate and reinterview these women. The prospective data set offered intriguing research opportunities. Since the sample women would have completed their family building, one interesting question would be the extent to which final family size coincided with expectations expressed in 1962. Changes in sex-role attitudes over the fifteen-year span could be analyzed, since a number of the sex-role attitude questions from the 1962 study were replicated exactly in the 1977 interview. The incidence of marital dissolution also could be effectively investigated, using measures obtained while marriages still were intact.³

The 1977 reinterview posed more difficulties than earlier reinterviews. First, there was the sheer logistic problem of locating respondents, none of whom had been contacted within the previous eleven years.⁴ A large proportion of the sample would have moved to new addresses during the interim period. Unlisted telephone numbers were expected to be more troublesome. At the earlier interviews, most of the respondents had small children to care for, and thus were likely to be at home and not averse to giving time to a telephone interview, while in 1977 most of the respondents no longer had a preschool child and many were working outside the home. It also could be difficult to reestablish rapport with the respondents after our long silence; this was complicated by a survey questionnaire considerably longer than those used in previous reinterviews.

A small pilot study, using a random sample of 100 of the respondents, expedited funding by demonstrating the feasibility

of locating these women; 94% of the target sample completed a brief interview. The large reinterview survey proved equally successful. Of the 1230 women in the target sample, full interviews were obtained with 1161 women—a response rate of 94.4%. Of the total, 15 women had died since the last interview, 19 women were not located, and 35 refused to participate in the full study. However, for 58 of the 69 women who were not full participants, some relevant information was collected, including the number of births since the last interview, current marital status, whether a reported marital dissolution was due to death or divorce, and the incidence of remarriage. In some cases, this information was obtained from a respondent who was unwilling to grant a complete interview (22 cases); in others it was obtained from a relative or friend when the respondent refused to be interviewed (11 cases), when the relative or friend did not know the respondent's whereabouts (10 cases), or when the respondent was deceased (15 cases). There was a complete absence of information for only 11 respondents.

How can we account for this successful response rate? One critical element was the competence and dedication of the interviewing staff. The major part of the interviewing was done by a small group of experienced interviewers, a few of whom had participated in earlier waves of the study. Encouraged by the success of the pilot study, these interviewers displayed great ingenuity and tact, both in tracking the respondents and in obtaining the respondents' cooperation. Another critical factor was the active personal participation of the principal researchers in all phases of the data collection. There appears to be no substitute for the day-to-day involvement of the research directors, who are most knowledgeable about the study goals, in the data collection process. These two inputs were not unrelated, since the researchers took great pains, both in the design of the questionnaire and in the general organization of the project, to facilitate the work of the interviewers.

Techniques to minimize response loss centered on two problems: (1) locating the respondents; (2) establishing sufficient rapport with the respondents to secure their participation.

LOCATING THE RESPONDENT

Since a longitudinal study had been planned from the outset, information was obtained at each interview to facilitate later contacts. The interviewer initially told the respondent that the study was to be a continuing one, obtained the respondent's address and telephone number, and also asked for the names and addresses of three relatives or friends who would always know how to reach her. This information was updated at each subsequent interview. Thus, for each respondent there were available in 1977 four such lists of "contacts." These lists, appropriately dated, were consolidated into an accurate, readily usable format by photocopying them sequentially on a single page.

Procedures for locating the respondent were detailed for the interviewer in an instruction booklet and were discussed at length during the training session. Interviewers were to start with the respondent's last recorded telephone number. If that proved to be out of date, they were then to check the listing with the telephone company's information operator (the only way to ascertain if someone has an unlisted number). The next sources were local area telephone books and the telephone company's information service. Since the amount of help received from information operators varied greatly, interviewers who found a particular information operator to be uncooperative were advised to call back a little later, when they most likely would reach a different operator.

Upon failing to locate the respondent, the next recourse was the list of contacts, following the same general procedure. Training sessions stressed the importance of maintaining rapport with the contacts, since they frequently were the sole means of locating the respondent. It proved important in gaining the cooperation of the contacts to indicate that the University of Michigan was the sponsoring agency; this gave the interviewers legitimacy and assured contacts that they were not supplying information to bill collectors or finance companies. This was particularly effective when we made person-to-person calls and the operator announced that the University of Michigan was calling long distance.

Sometimes a contact refused to provide information about a respondent, instead, volunteering to get in touch with the respondent, who then would call us herself if she were interested. Since past experience showed that this procedure rarely produced an interview, interviewers were instructed to avoid this resolution, if at all possible, and to point out that they might be to reach since their heavy interviewing schedules frequently kept their phones busy. Both contacts and respondents were told they could call collect to the Survey Research Center either to verify credentials or to schedule an interview; several interviews were obtained through this route. Continuous staffing of such a contact phone by persons able to respond tactfully and positively to such calls is important. One interview was almost lost because the person answering the phone in an off-hour was not told that potential respondents might be calling that number.

A local business directory service proved to be a useful resource. Their services, which included detailed block maps with the addresses and telephone numbers of each dwelling unit, were available to the interviewers for an hourly fee. This resource was used to call former neighbors of both respondents and contacts, and even the former residence of a respondent, to see if the new occupant knew the respondent's new address. Occasionally we discovered through such a call that the respondent still lived there, but had changed her phone number. Visits to former neighborhoods, to the schools where the respondent's children would have been enrolled, and to local churches all proved helpful in particular cases.

We found it useful to organize the interviewers into a team, with some diversification of tasks. One interviewer served as the general supervisor of the interviewing process, with a major function being the continuous reassignment of problem cases. Respondents who proved very hard to locate were reassigned to our specialized and highly skilled "tracing" interviewer. Respondents presenting particular interviewing problems were appropriately reassigned. The principal investigators checked every few days with the team supervisor to monitor the progress, discuss the problems, and help out where necessary. For example, we sometimes sent an official letter to worried respondents to reassure them about the legitimacy of the project.

Some indication of the difficulty in locating respondents is shown in Table 1, which documents the location of the sample respondents at the 1966 interview and again in 1977.

By 1977, a larger number of the respondents lived outside the Detroit metropolitan area or outside Michigan, which made the tracing operation more difficult. Even respondents still living in the Detroit metropolitan area were hard to find if they had moved to different addresses. Table 2 shows the number of respondents who had moved since their last interviews. Those 352 respondents who had not moved and still had the same telephone number, and the 40 respondents who had moved but retained their telephone numbers, presented no problem. The 146 respondents with the same address but a different phone number were more difficult, because there was no way of knowing, when a former telephone number proved erroneous, that the address remained unchanged. Making a house call to all respondents with new telephone numbers would have been inefficient and far too costly. In a few cases, however, a visit to the 1966 addresses, after all other means had failed, resulted in a successful interview.

The number of telephone calls required to obtain an interview provides some indication of the difficulties of the location process. The interviewers recorded the number of calls made to locate and interview each respondent; calls were counted only when someone answered (excluding the telephone operator or a taped message from the telephone company). About 50% of the respondents required fewer than four calls, five or more calls were required for 450 of the respondents, and ten or more for 140 respondents. When the number of calls exceeded about 20, many of the interviewers no longer kept track of each call made, but several cases requiring 50 calls were recorded. Table 3 indicates the complexity of the location process and shows how the respondents were finally located.

ESTABLISHING RAPPORT

Since the present study had both advantages and disadvantages for maintaining rapport as compared with other studies, it was important to design the survey instrument and procedures to

TABLE 1
Location of Target Sample, 1966 and 1977

Respondent's residence	1966	1977
In Detroit	301	123
Not in Detroit, but in Detroit metropolitan area	826	799
In Michigan, but outside Detroit metropolitan area	34	111
In the United States, but outside Michigan	66	139
Outside the United States	3	5
Respondent deceased	na	15
No information on respondent's location	na	38
Target sample	1,230	1,230

NOTE: na—not applicable.

TABLE 2
Respondent's 1977 Address and Telephone Number,
Compared with Those at Last Interview

Same phone, same address	352
Same phone, different address	40
Different phone, same address	146
Different phone, different address	638
Information inadequate to make comparison	54

maximize our advantages and minimize our problems. One potential problem was that respondents who had been interviewed four times previously (and then heard nothing from the project for eleven years), might decide they were tired of the project. Indeed, several women who refused to participate said explicitly that the project had gone on long enough, and they were no longer willing to give time to it.

The study also had some advantages in that it dealt with areas important to most of the respondents—childbearing, family life, and related topics, and we could build on the high levels of rapport established by the previous investigators. Before each earlier wave of the study, an official letter had been sent to the respondent, alerting her to the coming interview, stressing the importance for a longitudinal study of maintaining contact with each person in the sample, and enclosing a brief report of highlights from the previous interview.

We concentrated on two major techniques for building respondent rapport. First, we reminded the respondent of her previous participation as an aid to reintegrating her into the study. Second, we assisted the interviewers by making special efforts to facilitate the interviewer's task through the questionnaire design and the organization of the study. As a first contact with the respondent, an official letter on the stationery of the Survey Research Center, University of Michigan, signed by the Director of the Center, recalled their previous participation in four interviews and reminded them that they had received regular reports on the findings from these studies. Although the letters frequently

TABLE 3
How Respondents Were Located

Through respondent	
Same telephone number	392
Telephone number obtained from information or telephone directories	192
Address obtained from post office change-of-address search or city directory	4
Respondent contacted field office	9
Called similar names in telephone directories	3
Through contact	
Same telephone number	325
Telephone number obtained from information or telephone directories	142
Called similar names in telephone directories	25
Other	
Business directory service	50
Ex-husband	14
Visits or calls to neighbors of respondent's former residence, not listed as contacts	11
Miscellaneous	13
Respondents not located or no information on how located	50
	1,230

proved a useful introduction, many of the letters were returned as not forwardable. Since many of the respondents could only dimly remember their past involvement, despite an introductory letter, the questionnaire itself was designed to remind the respondent that we had been studying her family for a long time.

Each of the 1230 questionnaires was personalized for a particular respondent, using information collected at previous interviews. For example, the first question read as follows:

When we talked with you in October 1966, about 10 years ago, there were 7 people in your family: you, your (former) husband, Herbert, and your 3 children, 2 boys and 1 girl(s), and your sister. You were also expecting (a/another) child, the one born in February 1967. I would like to talk with you about any changes that have taken place in your family. Are all these same people still living with you?

Each of the underlined blanks was filled in with the data that pertained to a particular respondent, so that when the interviewer reached Mrs. Smith, she mentioned the correct date of the previous interview, identified her husband by name, and noted the exact composition of the family at the time of the previous interview, including any additional persons living with them. If the respondent had been pregnant at the previous interview, that fact would be mentioned, and since all such pregnancies had been followed up to obtain the outcome, the subsequent birth was also noted. Thus, the interviewer could immediately establish that we had known the respondent before and that we now wanted some additional information. The personalized questionnaire contributed greatly to bridging the eleven-year gap between the surveys, and helping maintain rapport with the respondents. When we had prior knowledge about a marital dissolution, or learned of one during the location process, the interviewer was careful to use the term "former" in referring to the ex-husband.

In addition to the personalized introductory statement, information specific to that respondent was entered in more than fifteen different places in each questionnaire. For example, the section on women's work since the last interview had one question sequence for women who were working at the last interview and a different one for those not previously working; the appropriate check mark was entered into the questionnaire beforehand so that the interviewer could follow the routing appropriate for that woman. Having the relevant information from past interviews already entered on the questionnaire greatly eased the task of the interviewer and helped make the interview flow smoothly.

In addition, all needed information from previous interviews was supplied to the interviewers: the respondent's name, address, telephone number, household composition at the last interview (with ages updated to the present), the date of the last interview, her work status at last interview, and the total number of children she expected to have when asked in 1962 about completed family size. The interviewer could refer to this information, if necessary, but the job of inserting it in the appropriate places in the questionnaire was done for her in the office. Centralizing this job maximized accuracy and helped maintain interviewer enthu-

siasm. In fact, maintaining interviewer morale was deemed very important to the success of the study, since locating and interviewing respondents after an eleven-year lapse frequently strained the interviewer's tact and ingenuity. Great care was taken to simplify the format and flow pattern of the questionnaire—a particularly important consideration in a telephone interview, where there is less opportunity for the interviewer to pause or hesitate. Not only did the excellent response rate attest to the success of these efforts, but several of the interviewers mentioned that they found the questionnaire one of the easiest to administer in their experience.

The office staff also supplied the interviewer with information gleaned from past interviews, such as recorded comments about the attitudes of the respondent toward the survey, problems that had arisen previously, and other remarks that might help in approaching the respondents. In several instances, this saved interviews which otherwise might have been lost. One of the great advantages of a longitudinal survey is the opportunity it affords to learn from previous waves about the problems presented by particular respondents. Utilizing this potential advantage, however, requires not only that the interviewer carefully record any available information about the respondent's attitudes that could be helpful later, but also that this recorded information be culled and made available for the interviewer's use in the subsequent surveys.

The achievement of high response rates in longitudinal surveys is not fortuitous. Developing and nurturing a good relationship with respondents requires considerable thought and effort on the part of the researchers as they plan and implement the study. Of course, a longitudinal study, with its repeated contacts with the respondents, also provides positive feedback to the respondents on the purpose and findings of the study, and thus makes it possible to build a relationship that emphasizes the value of the respondent to the study and the importance of her continued participation. Success also depends on the ability and commitment of the interviewers, who constitute the main contact with the respondent. Organizing the research project to make both the respondent and interviewer feel valued and committed can

be time-consuming for the researchers, but we are convinced that these efforts are essential for maintaining response rates in longitudinal surveys.

NOTES

1. The first wave of this longitudinal study was done by Ronald Freedman and David Goldberg as part of the University of Michigan's Detroit Area Study. The three reinterviews through 1966, together with the resulting analyses from this data set, were done by Ronald Freedman and Lolagene Coombs.

2. Respondents whose marriages were disrupted were dropped from the continuing sample in earlier waves, but were reincorporated in the 1977 survey.

3. Some of the substantive findings from the project have been reported by Coombs (1979), Freedman and Thornton (1979), and Thornton and Freedman (1979).

4. For the 59 respondents with a prior marital dissolution who were again interviewed, the period was even longer.

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Deborah S. Freedman is an Assistant Professor of Economics and a Research Associate of the Population Studies Center at the University of Michigan. Her research interests center on the economic correlates of fertility, both in developed and less developed countries.

Arland Thornton is a study director at the Survey Research Center and an Assistant Professor of Sociology at the University of Michigan. His research interests are marital dissolution, sex-role attitudes and behavior, and fertility.

Donald Camburn is a research associate at the Survey Research Center at the University of Michigan. His interests lie in coordinating the computer work and statistical analysis for large bodies of survey data.