

INVESTIGATING RESPONDENTS' INTERPRETATIONS OF SURVEY QUESTIONS

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Introduction

One way to evaluate questionnaires is to investigate respondents' understanding of the intent of specific questions and the meaning of their replies to those questions. This technique is called "frame of reference probing," and is done by asking the respondent some additional questions. It is designed to address concerns about whether the questions, definitions, and instructions proposed for a questionnaire convey the frame of reference desired. Probing to determine respondent frame of reference can be especially useful when words (like "crime") that are key elements in a survey are thought to carry emotional impact.

The probing questions can take different forms: either ad hoc questioning by the interviewer or administration of a set of questions written in advance (called "structured"). Ad hoc questioning usually takes place after the survey questionnaire has been administered. When structured follow-up questions are asked, the probing might be done immediately after the question containing the word or concept of interest is asked; alternatively, it might be done after the survey questionnaire has been completed.

Frame of reference probing can be incorporated at various stages of the questionnaire development process. It might be planned as a part of a pilot study or field test, or it might be done during the actual survey.

Personnel and Skill Requirements

This technique is implemented by interviewers and to some extent the skill requirements involved depend on whether the probing takes the form of structured followup questions or unstructured questioning. In the former case, regular interviewing skills are required; in the latter, more extensive interviewing skills such as detailed probing and ability to think quickly are also necessary.

When this technique is used during informal testing, it may be preferable for researchers/questionnaire designers to conduct the interviews in order to give more insight into respondents' interpretation of the word/phrase of interest.

Selection of Respondents

The way in which respondents are selected for frame of reference probing depends on the stage in the questionnaire design process at which the method is used. When it is used during the questionnaire development process, respondents are selected using the same type of purposive selection strategies as are involved in informal tests or unstructured interviews. If respondents' interpretations of questions in a formal test or the actual survey are subjected to investigation using this technique, however, respondents have already been selected through scientific procedures. Depending on time and resource constraints, everyone in the sample can be included in the frame of reference probing, or respondents can be subsampled and the additional probing questions asked of only a percentage.

Preparation

In advance of data collection, the following basic decisions need to be made:

1. Decide when during the questionnaire design process to probe respondents' interpretations.

If used during the questionnaire development, probing to determine respondent frame of reference for key concepts can facilitate improvements to question wording, and thereby avoid collecting data that cannot be properly analyzed statistically. This type of question investigation can serve to warn the survey designer of ambiguities that will cause respondent confusion and irritation. If ambiguities concerning the meaning of questions are present, it is likely that the interviewers will be asked to explain what is meant or what type of answer is wanted. When interviewers are asked to explain questions, the chance of interviewer bias increases dramatically.

If probing to determine respondent frame of reference is included in the final questionnaire used for the survey, it can help to illuminate the answers provided in the survey. The answers to the probing questions may assist the survey analyst in understanding what appear to be inconsistent answers. And in a repetitive survey, problem questions can be deleted or changed for subsequent interviews.

2. Decide which words/phrases to probe.

Words/phrases that are central to collecting uniform information and thought to be susceptible to misinterpretation should be subjected to investigation of this type. For example, in a study designed to evaluate the seriousness of various crimes, the respondent might be asked to rate the seriousness of an event described as: "An offender injures a victim and the victim dies." In order to know whether the respondent answered in general terms or attributed specific circumstances to the event before rating its seriousness, additional probing should be done to determine how each respondent interpreted the question.

3. Decide where in the interview to probe them.

If the questions added for the frame of reference probing do not disrupt the interview (by changing the subject, for example), and are not expected to bias the remaining survey questions, then it is probably best to ask them immediately after the question where the word/phrase of interest appears. By placing the probing questions immediately after the survey questions of interest, there should be no doubt as to what word or phrase is being referenced. If the probing questions might disrupt or bias the interview (such as detailed questions about sources of income, traffic accidents, or the nature of mental illnesses in the family) those questions could be placed near the end of the interview and preceded with a transition statement such as "Earlier I asked you about ...; now I have just a few more questions about that."

4. Arrange probing so that only a few questions (2 to 4) are probed with a respondent.

A decision about the total number of survey questions which are investigated through frame of reference probing is up to the researcher. However, if more than about 2 to 4 words/phrases are to be investigated, it might be better to limit the number subjected to probing with any one respondent and interview a larger number of persons in order to collect enough data. Important considerations in setting the number of questions to be investigated are the total length of the interview and the respondent's tolerance for being questioned in detail on subjects for which (s)he may have little interest and/or knowledge. Unless the respondents selected for this type of interviewing are known to be especially knowledgeable or interested in the

topics to be probed, it may be best to assume a low level of knowledge and interest and arrange the probing questions accordingly.

5. Determine how many and what kind of probes to use to investigate each word/phrase under study.

The optimal number of questions used to determine the meaning attached to a word/phrase is probably about 3 to 5. If too few probes are used, there is the risk of superficial or inadequate treatment of the subject; if too many are used, there is the risk of being tedious, appearing to challenge or question a respondent's views/beliefs/attitudes, or of appearing to be administering a test in which there are "right" and "wrong" answers.

Clearly, adding questions to an interview results in a more time-consuming interview. In addition, there may be some respondents who will dislike being asked to report information such as what things they consider to be ..., what they were thinking about when they answered a question, or other questions requesting them to think about how they think about things. If the probing questions are carefully worded, it should be possible to avoid "putting respondents on the spot." An illustration of a question that was carefully constructed to avoid putting a person "on the spot" is:

"Speaking of crime, everyone agrees that some acts are crimes, but there are different ideas about others. Do you believe it is a crime for someone to ...?"

6. Arrange method of probing and presentation of additional questions.

The method of probing depends on the stage of the questionnaire design process at which the technique is used. When it is used for questionnaire development, it might be more useful to the researcher if interviewers are given guidance on what information is desired and then allowed to develop their own follow-up questions. To some extent the choice between structured and unstructured methods during developmental work depends on the level of experience of the interviewers; less experienced interviewers and those not familiar with research methods may require more structured assignments.

If used during the survey itself and if all respondents are to be asked all frame of reference probing questions, the follow-up questions should be printed on the questionnaire so that

they will be asked in the same way, and at the same time during the interview, of all respondents.

7. Establish system to record results of the probe.

Two common ways of recording results of unstructured interviewing are by tape recording and by having a second person accompany the interviewer in order to take notes.

8. Develop technique for reconciling survey question response with probing responses, if the two answers are expected to be the same.

Sometimes the frame of reference probing questions ask for the same type of information as does the survey question, but in a different manner. When the same type of information is asked, the respondent may seem to give quite different or contradictory responses to the frame of reference probing than (s)he did to the survey question. Reconciliation of responses is important for these cases. If this happens, the interviewer might say, "in light of what you've just been saying, I'd like to go back and ask again one of my earlier questions; ... (repeat question)."

Operation

Since frame of reference probing is generally done in conjunction with one of the stages of testing or with the survey itself, the selection of a site and other operational details are taken care of in planning for the main event. Some additional details may be necessary to accommodate the use of this technique, however. For example, if experienced interviewers rather than researchers are involved in the operation, they may require extra training on how to ask the additional questions. If unstructured probing is required, the training may be longer, more complicated, and different in content than if structured questions are added to the questionnaire.

If a decision is made to employ frame of reference probing questions for a subset of respondents rather than for all of them, additional interviewer instructions may be necessary to select the subset.

Data analysis is the final step in the operation of frame of reference probing. Analysis focuses on responses to the probing questions and may also include their relationship with some of the other subjects of interest in the survey. Take, for instance, the example cited earlier in which respondents are asked to consider the seriousness of the

following statement: "An offender injures a victim and the victim dies." Do people who imagine the injury to be inflicted during a barroom brawl rate the seriousness of the crime the same or differently from people who imagine it to have been the result of a mugging--or from those who imagine the death to have occurred as a result of a traffic accident? Differences in the responses of male versus female respondents or consistencies in the pattern of a single respondent's replies to a variety of such vignettes may also be of interest. If there is no differentiation among the rankings of crimes which are considered quite different by the questionnaire designer, there may be either a problem with the language in the question (suggesting that the wording should be changed), a problem with the researcher's notions about the seriousness of the crimes (suggesting that different examples be included), or perhaps a problem with the respondent's ability to make the desired distinctions (suggesting that the question should be deleted). Such an analysis conducted in conjunction with the final survey may provide explanations for some of the results from the analysis of the survey data.

Time Considerations

For the most part, the time required for planning and executing frame of reference probing overlaps preparation for the survey or test to which it is being appended. The selection of the testing vehicle, the data collection, and the data analysis all occur simultaneously with operations for the test or survey. Thus, the additional time necessary to use this technique is minimal.

Analysis of the information collected from unstructured frame of reference probing may take longer than from structured probing, since an additional coding phase may be required.

Mode of Data Collection

Frame of reference probing is suited for use in designing interviewer-administered surveys, either face-to-face or telephone. It could also be used in a face-to-face test of a mail questionnaire, but mail questionnaires themselves are not well suited to the technique. Structured follow-up questions could be incorporated into a mail questionnaire, but since the respondent is free to answer questions in any order and over a long period of time, the responses to the probing questions may not be good indicators of what respondents had in mind when answering certain questions.

EXAMPLE

The Pilot Cities Victimization Survey was conducted in 1971 to develop the National Crime Survey (NCS). It was a household survey in which respondents were asked the number and type of crimes committed against them and some details about each crime; in a portion of the sampled households, attitude questions about selected topics related to crime were included.

For the purpose of this example, refinement of only the attitude questions will be discussed.

Two of the questions proposed for the survey were as follows:

"Within the past year or two, do you think crime in your neighborhood has increased, decreased, or remained about the same?"

"Would you say in general that your local policemen are doing a good job, an average job, or a poor job?"

If the study of attitudes about "neighborhood" was to be meaningful, some understanding of how large an area the respondent had in mind was required. In addition, unless information was obtained about what people considered to be crimes when they answered the question, researchers would not know what was viewed as having increased, decreased, or remained the same. Similarly, in order to interpret answers to the question about quality of police work, one would have to know something about what qualified as "good" and what qualified as "poor."

For these subjects, questions were prepared in advance and printed in a supplemental booklet (separate from the main survey questionnaire). Since the subjects were not considered to be particularly sensitive nor likely to bias the remainder of the survey questions, the questions to probe the frame of reference were inserted into the questionnaire immediately after the questions under study--that is, after each of the two questions cited above, the interviewer was instructed to go to the supplemental questionnaire, ask the appropriate questions, and return to the main questionnaire.

Concerning neighborhood, respondents were asked to describe the size of the area they considered to be their neighborhood; they could answer in terms of the number of blocks or miles, or could give names of streets or roads that bounded the area. In addition,

respondents were asked whether or not they thought specifically about these boundaries in answering the previous survey questions.

To determine what "good" and "poor" police behavior was to each survey respondent, a list of 12 "typical" police behaviors was developed (e.g., enforcing all laws, shooting a looter who tried to escape, chasing away people who hang around streets or in doorways). After each item was read to them, respondents were asked whether they thought it represented "good" or "poor" police behavior. In addition, respondents' thoughts when the original survey question was asked were solicited (e.g., "were you thinking about the actions of a particular policeman?", "were you thinking about something that happened to you?").

A similar exercise was used to probe the respondent's interpretation of the term "crime." Two of the questions used were:

"Speaking of crime, everyone agrees some acts are crimes, but there are different ideas about others. Do you believe it is a crime for someone to ...

hold up a person?
beat your wife?
pass a bad check?
sell liquor?
litter the street?
(8 more acts listed)"

"What kinds of acts were you thinking about when you said crime in your neighborhood is (increasing/decreasing/remaining about the same)?"

Since the questions were preprinted, recording responses was done easily on the supplemental questionnaire. While the questions were intended to add meaning to the answers given to the survey questions, they could not serve as consistency checks on the survey questions. Therefore, no means to reconcile inconsistent answers were needed.

About 80 interviews were administered during this phase; members of the research staff conducted all of the interviews.

Respondents for this phase of questionnaire development were not selected as part of a statistical sample; they were chosen because their house/apartment was in a census tract which had been selected for use in the Pilot Cities Victimization Survey.

Findings confirmed the suspicion that "neighborhood" was defined quite differently, even by next-door neighbors; therefore, the frame of reference for the question showed considerable variability. In this case, rewording to a more precise reference of location was recommended:

"How safe do you feel on the street in front of your house?"

If a broader geographical area had to be included, then a question like the following could be tried:

"Would you feel safe in the streets anywhere in this city?"

For some respondents, lots of policemen on patrol after 10 p.m. was "good"; for others it was wasteful and a sign of unwanted intervention in people's lives, and therefore, rated "poor." On many other topics, what was good police behavior to some, was poor to others. Similarly, there was disagreement among respondents on whether some things (like selling liquor and littering the streets) were crimes. At best the survey question could serve as a public opinion poll, but not as a measure of what type of police behavior satisfied people nor what people meant when answering the question about whether crime was increasing or decreasing.