

“I Could Not Answer That”

By Kristen Miller

Cognitive interviewing in southern Mississippi

It has long been recognized within the field of survey research that the survey interview is best thought of as a social interaction, bound by social norms and patterns of expectations. The interview is viewed as a social system, involving two strangers—the interviewer and the respondent—who are bound together by a shared purpose.

But this conceptualization of the survey process lacks recognition that the interaction is dependent upon the respondent having a pre-existing familiarity with surveys and an awareness of the expectations imposed by the question-response process. It is the respondents' preconceived notions of what is expected of them that make for relatively straightforward, efficient data collection.

In January of 2002, several members of the Cognitive Methods Staff of the National Center for Health Statistics traveled to southern, rural Mississippi to conduct in-depth interviews as part of a cognitive analysis for the United States/Canada Joint Health Survey. Unlike participants typical of NCHS cognitive interviewing projects, these were much poorer and less educated, and had relatively limited access to good health care.

Kristen Miller, Ph.D., is a member of the Cognitive Methods Staff, Office of Research and Methodology, National Center for Health Statistics.

While some of the Mississippi participants were familiar with the survey concept, a few had never before participated in a survey, were not entirely sure what surveys were used for, and had no previous knowledge of questionnaire design or format. They were unable to engage in the interview with the kind of ease typical of survey respondents.

One 60-year-old woman, for example, struggled with the process throughout the entire interview because she was under the impression that her answers were to be previously conceived; she did not realize that she was expected to formulate her response as she was being asked the question. Though the interviewer provided instruction as well as positive reinforcement, she continuously expressed an inability to answer even general questions about her own health:

SUBJECT: I had never been asked these questions before. That's the reason I really don't know how to answer these questions. I'm doing the best I can.

INTERVIEWER: Oh, you're doing a great job. You're doing fine.

SUBJECT: I'm doing the best I can.... because, like I say, some questions you all [are] shooting out here to me... I have never heard before.

As the passage illustrates, the participant was not aware of what was expected of her in the role of respondent. While providing an impromptu re-

sponse (even if it is not quite accurate) is in the purview of “being a survey respondent,” this woman did not know this prior to the interview.

Another critical expectation imposed on survey respondents is that of producing an answer that will fit within a provided response category. They should also under-

Study Note

The United States/Canada Joint Health Survey is sponsored by the National Center for Health Statistics, Statistics Canada and the Robert Wood Johnson Foundation. The primary objectives of the cognitive analysis were to identify the interpretive dimensions of each question, to determine the consistency of interpretations, and to ascertain any indications that the data would not be comparable across the two countries. The questions consisted of general health items, including subjective health measures, access to care, chronic conditions, cancer screening, and limitation questions.

Of the 21 interview participants, five were employed in blue collar or service positions. The rest were either retired, on disability, or unemployed. While it was difficult to discern their factual incomes (a few participants, clearly the poorest, were unable to give even an estimate), it was clear from their living conditions that most participants were poor. Many lived in mobile homes or in houses with only one or two rooms; two of the participants did not have indoor plumbing until the year 1999.

Two participants had at least some college education and six others had graduated from high school. However, 13 had not graduated high school, though most had reached the ninth, tenth, eleventh, or even twelfth grades. Two participants did not reach high school; one had reached the first grade, the other had reached the fourth grade. All participants had telephones and televisions in their homes.

stand that, if their “real answer” does not squarely match the provided category, they can “make do” and adjust so that their response is categorizable. Some Mississippi participants who were not aware of this expectation considered any type of answer—as long as it answered the question—as suitable.

One 34-year-old woman became increasingly upset each time the interviewer asked for clarification or refinement of her initial response so that it could be appropriately categorized. The discord finally came to a head when she was asked the question, “When was the last time you had a pap smear?”:

INTERVIEWER: Okay. And when was the last time? Less than one year ago...?

SUBJECT: Last year.

INTERVIEWER: Was it less than one year ago or one to two years ago?

SUBJECT: Last year!

INTERVIEWER: So, does that [mean]...?

SUBJECT: A year ago!

To ease the situation, as well as to obtain a codeable response, the interviewer was compelled to explain the fundamentals of questionnaire design. She needed to convince the participant that she was not being rude (which was what the woman thought), but was merely following a set of instructions given to her by someone else:

INTERVIEWER: I got these ridiculous categories. Look what I have. *The interviewer shows her the sheet of paper with the written categories.* I have less than one year ago and one year to less than two years ago. So, how...?

SUBJECT: *Now understanding, the woman kindly pats the interviewer on*

the leg and interrupts. Put less than two years ago, then.

Those unfamiliar with the format of survey questions had particular difficulty with scale questions that used generic, essentially nondescript, response categories, such as “mild,” “moderate,” “severe,” and “extreme,” that relied on incremental order to convey meaning. One 59-year-old man, for ex-

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ample, had difficulty responding to such a question, contending that “to me, mild and moderate are about the same thing.”

For many of the Mississippi participants, the question-response process became much more straightforward once they were educated about the survey interaction. This was not the case for all, however. A few did not grasp the formality of the question-response process and could answer questions only if they were restated conversationally. This 68-year-old man with a first grade education, for example, was unable to provide health information through a structured survey question:

INTERVIEWER: The next few questions are about limitations in your daily activities caused by a health condition or problem. Do you have any difficulty hearing or seeing?...

SUBJECT: I don’t understand.

In a less structured format the participant was able to understand the ques-

tion clearly and relay rather detailed health information:

INTERVIEWER: Can you hear all right?

SUBJECT: I can hear a little bit, but not too much. I hear sometimes like if you talk real plain. Some people talk real plain to me, and I can understand them pretty good.

INTERVIEWER: How about seeing, can you see okay?

SUBJECT: I got a cataract on this eye. I can’t see out of this eye. I can see out of this eye. I can see, but I can’t see real good, there’s like a skin over it. It’s dim.

For such respondents with little education, some types of questions are especially problematic. For example, no survey question outright asks respondents to perform mathematical calculations. However, some require them to solve math problems mentally before they can provide a codeable response, depending on how they conceptualize their responses.

For example, in the question, “How old were you when you were first diagnosed with high blood pressure?,” those who immediately conjured their age (“I was 50. I know that because it was the same age that my mother got high blood pressure”) did not need to perform a calculation; the question was straightforward and posed little problem.

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However, for those who recalled the “year” or “how many years ago” they were diagnosed with high blood pressure, the question necessarily forced them to perform a mental calculation. For the less educated, performing such a task was especially burdensome, potentially embarrassing, and sometimes impossible.

This 67-year-old man with a fourth grade education found the question complicated because he only remembered that he was diagnosed in 1996:

SUBJECT: Let’s see, it was in ‘96. *He pauses a long time. Looking up to the ceiling, he counts on his fingers. He mumbles numbers under his breath as he counts. He pauses longer, and goes over his fingers again.*

INTERVIEWER: *The interviewer continues to wait for his response.*

SUBJECT: *He finally concludes.* I would’ve been 62.

INTERVIEWER: 62? Is it easier to remember the year? Because didn’t you say it was 1996?

SUBJECT: *He nods affirmatively.* It was ‘96 when I first went in.

This man, by taking his time and using his fingers to help in the calculation, was able to convert his initial response (the year) into the required format (his age). In the next passage, however, the woman also remembers the year (which coincidentally was also 1996), but does not even attempt to do the calculation; the interviewer is compelled to step in:

INTERVIEWER: How old were you when this was first diagnosed?

SUBJECT: Oh, shoot. I was in my 40s, but I don’t remember exactly.

INTERVIEWER: It’s much easier to remember the year. Because you said it

was in 1996.

SUBJECT: Yes, I remember that so — so good because I moved back here in ‘95....

what they would normally use to describe their experiences.

In the chronic condition section of the questionnaire, respondents were asked

“Some questions you all [are] shooting out here to me... I have never heard before.”

INTERVIEWER: So, it’s easy to remember the year, but it’s hard to remember your age? So, this was—

SUBJECT: I know I was in my 40s.

INTERVIEWER: *The interviewer realizes that the respondent is not going to give an exact answer unless she is assisted in performing the mental calculation.* Okay. So, for you to figure it out, you’d have to do a little math problem in your head to figure out how old you were. This was 1996. This is 2002. So, 1996 that was like six years ago. So, how old are you now?

SUBJECT: Fifty-two.

INTERVIEWER: Fifty-two minus six is—

SUBJECT: Forty-six.

INTERVIEWER: Forty-six. Forty-six. Does that sound about right?

SUBJECT: Yes.

Another sort of problem arose when respondents were required to base their answers within a knowledge system that existed entirely outside their own frame of reference. That is, the question addressed a matter that in no way crossed the respondents’ own personal knowledge. Most likely the words or language used in questions were not

about various health conditions with which they had been diagnosed. The particular intent of this set of questions was to track *doctor-diagnosed conditions*, and respondents were required to report information told to them by their doctors.

Respondents—especially those with limited access to good health care or an inability to retain what their doctor had told them—were not always able to report this information accurately. For example, like several Mississippi participants, this 30-year-old man confused the condition of “chronic bronchitis” with “acute bronchitis”:

INTERVIEWER: Do you have chronic bronchitis?

SUBJECT: I think I do. I’m not for sure.... I’ve—like when I go to the doctor, I got a cold and, you know, I’m diagnosed I got bronchitis.

A similar problem occurred with the man who knew he definitely had chronic bronchitis, but also answered affirmatively when asked if he was diagnosed with asthma, because he was under the impression that he was taking asthma medication:

INTERVIEWER: Do you have asthma?

SUBJECT: I guess I do. He’s [the doctor] got it down as that acute... *Subject is trying to remember the exact*

diagnosis and has trouble pronouncing the name. ...ex-car-bor-ation.... is what I'm trying to say, chronic bronchitis. Now he has given me asthma medications, inhalers, as you can see over there on the counter....

INTERVIEWER: So, I guess I'm a little bit confused about—and maybe it's because I don't understand the medical terms, but that—is there a difference between asthma and chronic bronchitis?

SUBJECT: I could not answer that. I don't know....

By far, the biggest problem in the chronic conditions section occurred with the questions on various heart conditions. These questions contained medical jargon, and while participants would know that they had problems with their hearts or

beating real fast... That's what he said. He gave me some nitroglycerine pills.

INTERVIEWER: Okay. So, you don't know if you have coronary heart disease?

SUBJECT: No, I don't.

This particular survey included other questions that required respondents to provide information outside their personal knowledge base. It was possible to rephrase some so they were oriented toward respondents' experiences. For example, the question, "In the past 12 months have you taken tranquilizers such as Valium?" could be rewritten as "In the past 12 months, have you taken medicine for anxiety or to calm your nerves?"

Problems remained, however, with questions inherently based on medical discourse, as were those concerning chronic conditions. At the very least, it

improving questionnaires so that survey research can advance the quality of estimates for this and other atypical subpopulations:

- Embed simple and appropriate instructions within the question.
- Avoid the use of abstract words.
- Provide multiple types of response categories to avoid mathematical calculations.
- Ask questions that are about respondents' direct experience.

On a more theoretical level, however, the identification of the various ways in which Mississippi participants were unable to negotiate the survey interaction provides clearer insight into the intricacies of the question-response process itself—interactive aspects that are otherwise invisible. Because a number of the Mississippi respondents had never participated in a survey and were entirely unfamiliar with the expected patterns of interaction, these interviews helped to articulate basic expectations of the survey respondent.

From this kind of work, we can begin to understand how respondents' particular social location influences the ways in which they make sense of and answer survey questions—information necessary for developing questions intended for diverse populations, and international and multicultural surveys. ●

"I got these ridiculous categories..."

that they indeed had heart disease, they were uncertain if they had, for instance, "coronary heart disease."

When asked, "Do you have coronary heart disease?," one woman responded:

SUBJECT: I know I have heart disease, but I don't know—I don't know what you call it, but I know he said I had a bad heart.

INTERVIEWER: Okay. So you—tell me what you know. You know you have a bad heart?

SUBJECT: He said one of the valves wasn't pumping fast or something. Needs to open and close better, and when I walk a lot or I even try to run, it pumps, you know, my heart starts to

had to be understood that there might be an under-report of conditions asked about in such questions (e.g., congestive heart disease) among those with lower education.

Survey interviews, as they are conceptualized as social interactions with normative patterns of expectations, are necessarily bound within a system of knowledge. Those respondents who do not have access to that particular system of knowledge will struggle in the interaction, will need to be educated about what is expected of them, or may simply not be able to complete the interaction within the standardized format required of survey design.

On a practical level, cognitive analysis of interviews with rural poor respondents suggests several guidelines for

Paul Beatty, Karen Whitaker and Catherine Simile, Ph.D. (along with the author) comprised the cognitive interviewing team that traveled to Mississippi. Many thanks go to each of my colleagues—the success of this project is a direct result of their dedication, astute interviewing skills and knowledge of questionnaire design as well as their ability to adapt in trying circumstances.