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# DEVELOPING TAILORED COGNITIVE PROTOCOLS: CAN COGNITIVE INTERVIEWS BE CONDUCTED OVER THE TELEPHONE?

CAROL COSENZA

What's the best way to do cognitive testing? This question, both explicitly and implicitly asked by researchers world-wide, may not have an easy answer. Although intuitively it makes sense that there may be not only one single correct way to cognitively evaluate a survey, research is just beginning in this field. Those interested in question evaluation are experimenting with different methods and modes trying to determine what works best under what conditions. Tests are being conducted looking at interviewer effects, effects of type of probes used, and effects of the mode of administration. This paper will focus on an experiment looking at what differences, if any, are found comparing phone to in-person administration of a cognitive interview protocol.

Survey researchers know that when they conduct a study, there is no monolithic "correct" way to collect the best data. There are variables, such as mode of administration, length of interview, and types of questions asked, that can influence the cost, response rates, and even the quality of the data. Just as survey researchers juggle these different variables when designing a study, we are beginning to see that we have many of those same options when planning cognitive testing. *Who* does the interview influences not only how the interview is conducted, but may also be a factor in what we learn from the interview. *When* probes get asked in relation to the test questions can also vary. Cognitive information can be obtained retrospectively (either immediately after a question, following a series of questions, or at the end of the entire interview), concurrently (using the think-aloud model), or prospectively (when, before asking the test question, the interviewer elicits some background information about the respondent that is not based or tied directly to any one specific question). The *structure* of the protocol and cognitive probes can range from a completely unstructured interview, where interviewers have no

pre-scripted probes to a totally structured interview, with a pre-scripted protocol. There are also many ways for *researchers to learn or “get results”* from cognitive interviews, including interviewer debriefings, individual summaries written by the interviewer, reviewing audio or video tapes, and coding the interview.

At the Center for Survey Research (CSR), when deciding which cognitive testing method to use, we consider both content and operational issues. For example, when we have pre-identified concerns about item phrasing or vocabulary, we have found that we often learn more by asking more standardized probes that focus specifically on areas of interest. When doing surveys with a particular sub-group or population that we may not have had a lot of experience with, our interest may be more centered on topics and questions actually make sense to respondents in their particular situations. In these cases, we feel it's important to understand the respondent's situation and often start the cognitive interview by asking some prospective questions. Issues of usability are very important in self-administered surveys. Different cognitive methods can be used to find out about the cognitive process a respondent goes through when filling out a survey as well as how the individual questions are cognitively understood.

In addition to content specific issues, as in any research, there are operational issues that must be considered. How much money and time you have to complete the cognitive interviews, who is part of the sample (and where are they located), and what mode of administration you are using all have some impact on the study design.

Our experiences using different methods of cognitive interviewing have led us to tailor our cognitive protocols based on our needs. One recent interest has been the effect of doing cognitive interviews over the telephone. CSR has used telephone administration in several studies in the past - a decision most often driven by the population we are studying. For example, we've done telephone cognitive interviews with doctors and residents about end-of-life care and with CEOs of building supply companies about their inventory. Often these populations are very busy and don't have the time or inclination to come in to be interviewed. By conducting the interviews over the phone, we have greater access to more people. Doing cognitive interviews over the phone also breaks down physical barriers to participating. Everyone knows that the best test of a survey is done with the population that will be doing the survey, not necessarily a general population cognitive pool of respondents. However, this is often difficult to accomplish if the sampled population is not in your area (for example, studying workers with injuries in another state) or they are unable to come into a lab setting because of health issues (respondents who had recently been released from the hospital). We were able to accomplish both of these using telephone cognitive interviewing. We've also used the

telephone cognitive interview as part of a methodological test - comparing closed-ended/structured interviewing to open ended/unscripted interviewing.

There are both advantages and disadvantages to doing cognitive interviewing over the phone. We've found that the main advantages are sample accessibility and possible monetary savings. Being able to talk to cognitive respondents over the phone allows a greater range in whom we can interview. We are not limited by geography. Respondents can live nearby or across the country. It allows us to get a better representative sample of potential respondents than if we were forced to use only those near our center. It also allows people with limited physical mobility the opportunity to participate. There are also potential savings in interviewer time, and travel costs.

There are also significant drawbacks that center on not being able to see the respondent. Visual cues from the respondent, such as nodding, looks of confusion, or attention loss, are all things that could lead an interviewer to do additional probing. These cues are unavailable to the interviewer when doing phone interviews. If testing usability of the instrument is a concern, phone interviews are not helpful since the interview cannot be video taped and the interviewer does not have the ability to watch the respondent fill out the forms. Also, any of the other visual components of a cognitive interview, such as using show cards or doing card sorts are impossible in this mode.

## **The Experiment**

While we understood there would be trade-offs when doing cognitive testing over the phone, we didn't know how, or even if, these trade-offs would influence the cognitive information we learned. Our original plan was to conduct cognitive interviews for the same study, both in person and on the phone, and see if there were differences in what we learned. The plan was built in to a large study of job skills and training. Unfortunately, the study was delayed and was not ready to be tested before QUEST. A last-minute alternative plan, a mini-experiment, was developed in the hopes that it would provide leads about the protocol for future research

The mini-experiment was conducted as part of a study of doctors asking about their views on aggressive treatment and testing for certain health issues. Six cognitive interviews were done by 2 senior staff members. Three were done in-person by one of the interviewers and the other 3 were done by the other interviewer over the phone. We found no differences in the length of the interviews or in what we learned from the respondents (the same questions were found to be problematic by both those that did the interview over the phone and in-person). The one possible difference we saw was that doing it in-

person might have helped establish rapport with the respondent more quickly. In-person respondents may have been a little quicker to slip into their role as cognitive respondent and see themselves as part of the “team” evaluating the questionnaire.

Obviously there were major limitations with this mini-study. First, was the scale of the study. The sample size was extremely small and there were only 2 interviewers. There was also a lack of clear, objective criteria for identifying differences. We found it very hard to tease out interviewer differences from mode differences.

## **The Next Step: A Bigger Study**

The original study on job training will be happening and will include cognitive interviewing on a larger scale. Four trained cognitive interviewers will do 3 interviews each - 2 doing them on phone and 2 in-person. All interviewers will all be briefed together so that everyone receives the same information about the study and the same goals for each question. The phone and in-person interviewers will be debriefed separately in the hopes that we will be able to focus on what was found (or not found) using each mode. We will try to distinguish whether the types of cognitive difficulties respondents had differ by mode and whether the number of problems found in the instrument differ.

At CSR, we use a model of cognitive interviewing that involves creating cognitive goals for each test question so that the interviewer understands what the researcher is trying to find out. The use of these cognitive goals may decrease the interviewer effects since both groups of interviewers will be using the same instrument.

Questions we hope to be answer with this research include:

1. What differences, if any, will be found between what we learn from the cognitive interviews done on phone interviews and those done in-person?
2. How will phone cognitive interviews work for a non-elite population?
3. Will using different modes mean we have to alter our cognitive interviewing protocol structure?

## **Next Steps: Defining Outcome Measures: It's different but is it better?**

Outcome measures of validity are always hard to define for cognitive interviews (and for most other question evaluation techniques as well). What criteria should be used to figure

out whether one method is better than another? Possible criteria could be whether the number or types of cognitive problems differ between modes. For example, do some modes find more comprehension or retrieval problems than other modes. Still, the question remains about whether finding more problems necessarily equates with a better mode. We could also look at interviewer or respondent behavior. However, this may be more influenced by specific characteristics of the respondent rather than a mode effect. We could try to create some kind of interviewer assessments, asking how the interviewers felt the interactions went and whether they thought the respondent had any cognitive difficulty at specific questions.

Future research in cognitive testing will need to focus not only on comparing different methods and modes but, perhaps more importantly, on how to interpret the differences that are found.

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