

Cognitive Interviews in Languages Other Than English: Methodological and Research Issues

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1. Introduction

With the increasing demand of survey translations in multiple languages, pretesting translated survey instruments and supporting documents in languages other than English is becoming critical to ensure high data quality. Obtaining high quality data from households where English is not the home language and where some or all of its members have a limited knowledge of English requires more than just having a correctly translated data collection instrument. Recent research on the Spanish language American Community Survey computer assisted personal interview instrument indicated that some correctly translated questions still pose conceptual problems and other difficulties for Spanish speaking respondents (Carrasco, 2003). Research findings point to the need for conducting cognitive testing on all translated data collection instruments (de la Puente & Pan, 2003).

Cognitive interviewing is one of the methods survey methodologists use in the process of survey development to improve questions by examining respondent comprehension. As a pretesting technique to observe respondents' thinking process cognitive interviewing was developed based on the English language and western cultural practice. Cultural differences in cognitive interviews have not been discussed much by survey methodologists. There is some evidence that cognitive interviewing techniques commonly applied in English may need to be modified when they are enacted in other languages (e.g., Kudela, et. al., 2003; Willis, 2004). For example, specific probes may not work or work differently. Sociolinguistic conventions appropriate to different cultures may require changes in practice. These issues are currently not well understood. Thus, conducting cognitive interviews in languages other than English poses new challenges and methodological issues for survey researchers. We need to identify how cognitive methods would perform in other cultures/languages to ensure we can use this method to identify problems with translations of English survey forms and make improvements to them to ensure the quality of data collected from non-English speaking populations.

The aim of this pilot study is to examine Chinese-speaking respondents' responses and their reactions to cognitive interviews and to different types of probes and to identify some methodological issues in cognitive interviews in languages other than English. Through this research, we intend to develop a framework for analyzing cognitive interviews in languages other than English by addressing the following points:

1. What is the effective procedure in developing cognitive interview protocols: whether to develop the protocols in English, and then translate them into a target language, or to develop the protocols directly in a target language?
2. What types of cognitive interviewing probes are applicable in a target language? And what types of probes cause potential problems?
3. What linguistic and cultural issues should be taken into consideration when conducting cognitive interviews in languages other than English?

2. Cognitive interviews in Chinese

In this project, we recruited 10 Chinese-speaking respondents from local Chinese communities in the Greater Washington, D.C. area. These respondents have a range of differences in the length of stay in the U.S. (from one year to 16 years), level of education (from a high school education to an advanced degree), age (from 20+ to 60+), gender, and occupation. Respondents were recruited by word-of-mouth and with the assistance from staff at the Chinatown Service Center in Washington, D.C.. (See Appendix for a summary of respondents' characteristics.)

From fall 2002 to spring 2003, we conducted 10 cognitive interviews, using a self-administered form. Respondents were asked to answer the first 20 questions on the Census 2000 Chinese form (a translation of the Census 2000 English form). The cognitive interviews were conducted in Mandarin Chinese.

The interview protocol was first developed in English, and then translated into Chinese, using a

direct translation method. Probes were drafted in English first and then translated into Chinese. Cognitive interviews were conducted in a self-administered mode. We used both concurrent and retrospective think-aloud techniques and probing methods during the interview.

3. Major Findings

From this pilot study we found that cognitive interviewing is effective in testing form navigation issues. We identified major form navigation problems that respondents encountered due to their unfamiliarity with form conventions. But this is done mainly by observation. We also identified some translation problems during the cognitive interviewing. On the whole cognitive interviewing techniques can work in another language, but needs some modifications.

We encountered challenges that are related to language and cultural issues. These issues will be discussed here in the following three categories:

- (1) Respondents' orientation towards cognitive interviews
- (2) Respondents' general behavior in a cognitive interview
- (3) Effectiveness of cognitive interview protocol and probes: language and cultural effects

3.1 Respondents' orientation towards cognitive interviews

Cognitive methods are designed to get input from respondents about their response formulation processes. Respondents provide detailed information on how they understand questions, recall information, decide upon its relevance, and formulate answers as a result of probing either during the interview or immediately after it (DeMaio and Rothgeb, 1996). The premise is that respondents have a basic understanding of surveys and how surveys are conducted. The assumption is that respondents are willing to report their opinions and thoughts and are willing to give accurate information.

This premise and assumption are based on the social practice of administering surveys as a method of data collection. Ordinary citizens are exposed to survey practices and they have the experience of being interviewed or being asked questions. However this experience may not be shared by recent immigrants.

From this project, we learned that most of our respondents had never had the experience of completing a survey, neither in a face-to-face

interview nor in a self-enumeration mode. They didn't have that experience in China and never participated in any surveys or survey interviews in the United States. Out of ten respondents, only one respondent participated in U.S. Census 2000. Since these respondents had never done a survey interview, they lacked important background information about surveys in general. In addition cognitive interviews are different from survey interviews. It is a challenge to explain the purpose of a cognitive interview to these respondents who do not have the basic knowledge of surveys. When they were put in a cognitive interview situation, they tended to treat the cognitive interviewing as a test.

In spite of the effort that the researcher made to explain the purpose of a cognitive interview in the introduction section and during the interview, respondents tended to focus their attention on how to complete the task as a test. One respondent commented:

“This is like a TOEFL (Test of English as a Foreign Language) test. When I was taking TOEFL class, the teacher taught us how to pick the most likely answer in a multiple choice item. That's what I'm doing. I'm trying to pick the most likely answer in the shortest possible time.”

3.2 Respondents' behaviors in a cognitive interview

Respondents' task orientation has an effect on how they perceive a cognitive interview and how they act in a cognitive interview. We have observed three behavior patterns of our respondents.

One is that respondents seem to be pre-occupied with providing the right answer, the answer that the researcher is looking for, not necessarily the respondent's opinion.

Second is that they constantly asked for assurance, because they wanted to give the “right answer.” They always asked: “Is this the right answer?” “Is this the answer you want me to provide?” We assured them over and over: “There is no right or wrong. We're just interested in how you think.” In spite of this, the respondents focused on formulating the right answer, and often asked for assurance to see if they were doing “right.”

The third is that the respondents appeared defensive when they were asked probing questions. They started to justify their answers when the interviewer asked them to describe their decision or thinking processes or asked them to paraphrase a question. They tended to say that they were doing what the question was asking them to do and that they were just following the instructions on the form.

These behaviors indicate that our respondents had a different task orientation when

they were engaged in a cognitive interview. They perceived it as a test. In the context of taking a test, the main task is to provide right answers instead of providing an individual's thoughts and feelings.

3.3 Effectiveness of cognitive interviewing probes

As mentioned earlier, the interview protocol was first developed in English and then translated into Chinese. When administering the interviews, we noticed that some notions or probes, although properly translated into Chinese, presented problems to elicit the intended information. This section focuses on the analysis of the effectiveness of cognitive interviewing probes, which are categorized in terms of functionality: think-aloud probes, process-oriented probes, and meaning-oriented probes.

3.3.1 Think-aloud technique

The think-aloud technique encourages respondents to describe their thinking process while answering questions (Willis, 1994). In our project respondents were instructed to "think out loud" before beginning the interview and during the interview. However we found it difficult to convey this concept to our respondents. There is no equivalent term of "think out loud" in Chinese. The translation we came up with is "*xiangdao shenme jiu shuo shenme*" ("say whatever you can think of"). This translation has the implication of "be frank with your opinion." The emphasis on thought processes in the English term is lost in translation.

Respondents demonstrated problems with "think-aloud" probes. When asked "what are you thinking?" respondents often read aloud the question or response options. Some respondents replied: "I'm thinking how to answer this question", or "why do they ask me this question?" It is not often that respondents reported their thoughts.

3.3.2 Process-oriented probing

Process-oriented probes are used to elicit the process by which a respondent calculates an answer, decides between alternative answer categories, or makes a judgment about an answer. Standard process-oriented probes are "How did you arrive at that answer?" "How did you choose that answer?" "How did you come up with that answer?" (Willis, 1994)

In our investigation, we noticed that in questions with multiple response options, the probe "how did you choose that answer" works well to identify how respondents chose one answer over the others. The strategy they often used in making the

decision is to eliminate other choices and pick the one that is most likely to apply to their case. The response to the probing question "How did you choose that answer?" is "Because the other options do not apply to me. Only this one seems most likely to fit my case."

It is difficult to get respondents to talk about the process of how they arrived at a specific answer. The probe "how did you arrive at that answer?" elicited the reply "because it asks me this question in the form. That's how I came up with the answer." Some respondents appeared to be annoyed by such probes.

e.g., Q10. "What is this person's ancestry or ethnic origin?"

Probe: "How did you arrive at that answer?"

Response: "Because this question asks this person's ancestry."

We also noticed that there may be language problems in translating the probes of "how did you arrive at that answer?" and "how did you come up with that answer?" These probes encourage the respondents to describe their choice of strategy in making the judgment about their answer. The English word "arrive at" has a figurative meaning of going towards a direction and getting there, with an emphasis on the process. We came up with two translations of these two probes: "*ni shi zenme dedao nage huida de?*" ("How did you get/obtain that answer?") and "*Ni shi zenme xiangdao nage huida de?*" ("How did you think of that answer?"). The two Chinese verbs "*dedao*" (obtain) and "*xiangdao*" (think of) emphasize the result of getting the answer. Focus on the process is missing in the translation. We found it hard to transfer the figurative meaning of "arrive at" into Chinese. This question sounds very unnatural in Chinese. Respondents didn't have a clue how to handle the probing question. We found it difficult to get the respondents to talk about the judgment process and retrieval process with these two probes.

3.3.3 Meaning-oriented probing

Meaning-oriented probes are used to get to know how respondents interpret a particular term or how they understand a question. There are probing questions on the comprehension of specific words or phrases, and on the comprehension of the entire question.

Probes for specific words or phrases (e.g., "What does the term/phrase X mean to you in this question?") are effective in getting respondents' interpretation of specific words or phrases. Respondents can interpret the meaning of the word or

concept in question. For example, when asked “What does the term “a U.S. citizen by naturalization” mean to you in this question?” the respondents could give their interpretation of the naturalization process (“you have to be a green card holder for five years, and then approved by INS to become a citizen.”)But probes for question interpretation or paraphrase of an entire question do not work that effectively. For example, the probe “Can you tell me in your own words what this question is asking you?” elicits three kinds of response from the respondents:

- Repeating the question word-by-word
- Trying to justify their answer
- Reading the response options

Example 1. Q11. “Does this person speak a language other than English at home?”

Probe: “Can you tell me in your own words what this question is asking you?”

Response: 8 respondents (80%) repeated the question word-by-word

Example 2. Q6. “What is this person’s race?”

Probe: “In your own words, what this question is asking you?”

Response: “This question asks if this person is White, is Black, African American, American Indian or Alaska Native, or is Asian India, or is Chinese ...”

This shows that paraphrasing probes may not be as effective in Chinese as they are in English to get respondents to report their comprehension of the question. It is worth mentioning that the patterns highlighted in this project are also seen in English-speaking respondents, but they are often associated with those respondents who have lower education attainment. But from this project, we can see that these patterns are more prevalent with Chinese-speaking respondents regardless of education level. The group of respondents in our project is of relatively high education attainment. In this group, only two respondents who work with language and language teaching demonstrate ability to think aloud and paraphrase questions. The other respondents, regardless of education level, have difficulty in reporting thinking processes and in paraphrasing questions in their own words.

4. Discussion

4.1 Cognitive interview as a speech event

A speech event is a situation in which participants use language to communicate for a

specific purpose. A speech event is conditioned by socio-cultural contexts and language use conventions. From a sociolinguistic perspective, a cognitive interview is a speech event. It uses language to get to understand respondents’ thinking processes. Its socio-cultural contexts include background knowledge of surveys, socialization experience, preferred ways of thinking, and ways of expressing one’s opinions.

Respondents’ behavior in a cognitive interview is, to some degree, affected by how they perceive the speech event of a cognitive interview. For respondents who have never had the experience of participating in any surveys, they do not have the necessary background knowledge to put a cognitive interview in a meaningful context. It is difficult to understand some basic concepts such as interviews and surveys. They would then interpret the speech event of a cognitive interview in their own frame of reference and complete the task as what they perceive it to be. Understanding non-English speaking respondents’ task orientation towards a cognitive interview allows us to design interview protocols that address this issue in a particular language and gear respondents towards the goal of a cognitive interview.

Cross-cultural studies show that each culture has its preferred ways of thinking and expressing opinions. American society places high value on analytical thinking and explicitly expressing one’s opinions, while Chinese society emphasizes on following authorities and avoiding conflicts (Scollon & Scollon, 2001). In a classroom Chinese students are taught to memorize and repeat a text and to strictly follow textbooks and teachers. They are not taught to openly express their opinions and are not supposed to challenge authorities (government surveys are perceived as a representation of authorities). This can explain, to some degree, why probes that direct the respondents to report decision process, thoughts, and feelings are more challenging to the respondents while probes asking for specific information (e.g., word meaning) seem to work better.

4.2 Language issues

There are also limitations related to language and translation issues. Some concepts make sense in one language, but it is difficult to translate them into another. Some questions sound natural in one language, but unnatural in another language. Some methods may elicit different reactions when translated into another language. The effectiveness of developing the interview protocol in English and then

translating it into a target language is worth further investigation.

Based on this exploratory research, I suggest a different approach for future cognitive interviews in non-English languages to test survey translations:

1. Conduct an expert review of the questions to identify issues to be tested, and pinpoint potential problems. Expert review should include cultural experts' input on the appropriateness of questions in a target language.
2. Develop an introduction to the interview that takes into consideration sociolinguistic conventions of cognitive interview as a speech event of the target culture. Make necessary adjustments on how to introduce the topic, what to include in the introduction, and how to explain the purpose of the cognitive interview;
3. Use English probing questions as a general guide. Develop probing questions in the target language to get to the issues instead of directly translate each probing questions.

5. Implications for Future Research

Over the past 20 years, the utility of cognitive methods has been shown again and again. These methods help identify problems respondents may have in the comprehension, retrieval, judgment and response processes related to answering a survey question. For example, Jenkins (1992) showed that inconsistencies between administrative records and survey reports on the Schools and Staffing Surveys in pupil counts reflected the fact that respondents did not always define their "school" the way the survey did. Research on the Survey of Income and Program Participation questions about cash balance pension plans (Hunter and Hughes, 2002) showed that respondents did not recognize their pensions plans from among the options presented in the initial version of the question. Revisions based on respondents' input were necessary to obtain accurate reporting of pension plans.

This investigation exposed challenges and limitations in taking the methods developed in one language and culture and directly translating them in another. The challenges include how to familiarize respondents who have a different task orientation with the goals of a cognitive interview, and the procedure in developing interview protocols and probes. Findings from this exploratory research will have methodological implications in non-English cognitive interviews and will lead to a more extensive research effort studying cognitive

interviews in multiple languages. Future research should include:

1. Understanding non-English speaking respondents' perception of government surveys and interviews;
2. Investigating the sociolinguistic conventions appropriate to different cultural groups in conducting interviews;
3. Examining the efficacy of different approaches to protocol development (direct translation vs. adaptation);
4. Testing the effectiveness of probing questions in a target language.

Appendix

Characteristics of respondents in cognitive interviews

ID	Gender	Age	Education	Years in USA	Occupation
R1	Male	51	MA	16	Language instructor
R2	Male	47	College	14	Editor
R3	Female	47	Middle school	1	Nanny
R4	Female	47	Middle school	> 1	Nanny
R5	Female	45	High school	5	Nanny
R6	Male	60+	College	> 1	Retired Professor
R7	Female	48	Some college	13	Social worker
R8	Female	52	College	4	Teacher
R9	Female	28	MA	1	College student
R10	Female	40+	College	3	Unemployed

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