Implications of socio-cultural factors in the question response process

Miller, Kristen

IMPLICATIONS OF SOCIO-CULTURAL FACTORS IN THE QUESTION RESPONSE PROCESS

KRISTEN MILLER

A primary advantage of survey research methodology lies with its potential to depict characteristics of large and diverse populations as well as to make comparisons between distinctive subgroups within those populations. Respondents' differing conceptual and linguistic abilities, however, can present potential barriers to the comparability of survey data. Those with little formal education and who have little familiarity with the survey process are likely to be unsure of the overall intent of survey questions and the intended meaning of specific words. Similarly, respondents' cultural orientation toward particular concepts may vary from that of questionnaire designers; consequently, respondents could experience confusion or miss the intended meaning of those questions. If survey administration and questionnaire design is not adapted to cultural or socio-economic subgroups, data quality and the ability to make accurate representations of subpopulations are compromised.

Theoretical models depicting the phases of question response, however, are primarily informed by psychological, not sociological, principles. These models primarily focus on factors internal to the individual and highlight such concepts as perception, event memory, semantic memory, and means of computation. Socio-cultural conditions are typically regarded as tangential to these cognitive processes; the processes are seen as occurring outside and independently of social and cultural context. Question response models, therefore, characteristically treat question response as a universal process that is generalizable to all survey respondents regardless of social position.

Indeed, the problem of response error in estimates of cultural minority groups or poorer, less educated subpopulations has historically received relatively little attention in the field of survey methodology. The issue is notably absent in literature pertaining to survey measurement error. Only recently has the issue of standards for translations been raised by federal surveys. Federal research review boards have recognized the differing

intellectual abilities of respondents and, consequently, require nation-wide surveys to present their introductory materials at lower reading levels; respondents' clear understanding of their rights as survey participants is seen as an ethical obligation for government researchers. This level of consideration, however, has not been given to the readability of the survey questions themselves and the relationship to response error, though there is little doubt that the use of shorter, simpler words would likely reduce respondent burden and response error. Readability, however, represents only one dimension of difficulty that economically disadvantaged or culturally varied respondents could experience in the question-response process. Providing accessible reading levels does not address respondents' familiarity (or lack of familiarity) with survey protocols, their abilities to understand and respond to a question within the provided format, or the differing interpretations of key terms.

Through analysis of cognitive interviews conducted in 4 different racial and ethnic communities, this paper will illustrate how social and cultural factors can impact the question-response process and, in turn, the comparability of survey data. This paper is based on a study which is currently being conducted in Northwest Ohio's Latino community and suburban and rural poor Anglo communities by the Cognitive Methods Staff at the National Center for Health Statistics. In part, the current study is a follow-up study to previous work conducted January 2002 in rural Mississippi among participants who were primarily poor and had little formal education. The current work expands on the Mississippi project by more closely examining the role of culture, language and socio-economic factors in the question response process for general health surveys. The paper will describe preliminary findings comparing cognitive interviews in these three distinct communities along with interviews that were also conducted in Hyattsville, MD at the National Center for Health Statistics. In this discussion, the paper will illustrate that psychological models of the question-response process are not fully comprehensive; social context impacts the processes by which respondents answer survey questions and, as such, can impact the quality and usefulness of survey data. The paper ultimately calls for greater attention to the relationship of response error and respondent social location.

Methods

This paper is based on two cognitive interviewing projects: one conducted in rural Mississippi in January 2002 and the other conducted in Hyattsville and Northwest Ohio in Summer 2003. Interviews conducted in Mississippi were conducted for the Joint Canada and United States Health Survey and were based on a general health questionnaire for that survey. Interviews conducted in Summer 2003 were based on a collection of general

health, diet, exercise and wealth/income questions that were taken from various national surveys. All of the Latino interviews conducted in Northwest Ohio were conducted in Spanish; translations of the questions were taken from the translations used in their respective fielded survey. Along with the standard objectives of cognitive testing, the primary goals of both projects were to 1) identify the interpretive dimensions of each question, 2) identify various patterns of cognitive processing and 3) identify any indications that data from the various groups would not be comparable. While analysis is currently being conducted on interviews conducted this summer, analysis of the Mississippi interviews utilized grounded theory and the constant comparative method, a common technique for analysis of qualitative data. Patterns of interpretation and cognitive processing are currently being coded in the Ohio and Hyattsville interviews and will eventually undergo quantitative analyses to further investigate comparative differences between the 3 social groups.

Cognitive Interviewing Methods

The purpose of cognitive interviewing is not to obtain survey data or controlled experimental data, but rather to obtain information about the processes individuals use to answer survey questions as well as to identify potential problems that might lead to survey response error. As such, the methods provide insight into: 1) the ways in which cognitive tasks posed by a question are handled by respondents (i.e. comprehension of the question, retrieval of information, and formation of the answer), and 2) whether the answer given by the respondent represents what the question intended.

Data collection for cognitive methods differs dramatically from that of survey methods. While survey interviewing must adhere strictly to scripted questionnaires, cognitive interviewing uses the scripted survey question as only a starting point to begin a more detailed examination of the question response process. Additional probe questions, whether they are concurrent or retrospective, elicit the ways in which participants interpret key concepts, their abilities to recall the requested information, and the appropriateness of response categories. Because the interviews generate narrative responses rather than statistics, results are analyzed using qualitative techniques. This type of in-depth analysis can reveal potential response errors in survey questions and, as a result, can help to improve the overall quality of surveys and survey estimates.

Interview Participants

Twenty-one interviews were conducted in southern, rural Mississippi; 16 were conducted in participants' homes and 5 were conducted in a private room of a community center. All of the participants had telephones in their homes, yet lived in a very rural environment –

many lived down dirt roads that were several miles off main thoroughfares. Additionally, the social services for the area were relatively scant, and most of the very poor were dependent on a local church outreach group to provide food and medicines. All but 6 participants were African American. Most of the participants (15 of them) were in their 50s or 60s. Five were in their 30s or 40s, and one woman was 74 years of age. Of the 21 interview participants, 5 were employed in blue collar or service positions. The remaining participants were either retired, on disability, or unemployed. While we were unable to discern their actual incomes (a few participants, clearly the poorest, were unable to even give an estimate), it was clear from their living conditions that most participants were very 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. As for education, two of the participants had at least some college education and six others had graduated from high school. However, thirteen 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.

To date, 52 interviews have been conducted for the Northwest Ohio/Hyattsville project. Twelve interviews were conducted in Hyattsville at the National Center for Health statistics and 40 were conducted in Northwest Ohio. Of the Ohio interviews, half were conducted English and the other half were conducted in Spanish. Though a few Hyattsville participants were economically disadvantaged, Northwest Ohio participants were poorer and had the least amount of education. Many of the interviews conducted in Spanish were among first generation immigrants from Mexico who spoke little to no English. Unlike the Mississippi participants, the Northwest Ohio participants had access to social service programs. For example, many of the Mexican participants were taking English classes in a larger metropolitan area, and many of the Anglo participants were receiving services from the local county health department. The following charts outline the demographic characteristics of participants from the four interview groups:

Southern Mississippi Participants, January 2002

	Race/Ethnicity	Income	Education	Gender
Mississippi (English) 21 Participants	White = 6 Black = 15	<20K = 19 20-30K = 2	Elementary = 2 Some H.S. = 13 H. S. Grad. = 6 Some College = 2	♀ = 15 ♂ = 6

Northwest Ohio & Hyattsville Participants, Summer 2003

	Race/Ethnicity	Income	Education	Gender
Hyattsville (English) 12 Participants	White = 7 Black = 5	11-20K = 4 21-30K = 1 31-50K = 3 51-80K = 1 61-80K = 0 81K+ = 3	Elementary = 0 Some H.S. = 2 H. S. Grad. = 4 Some College = 6	♀= 7 ♂= 5
NW Ohio (English) 20 Participants	White = 20 Black = 0	0-10K = 8 11-20K = 7 21-30K = 5	Elementary = 2 Some H.S. = 13 H. S. Grad. = 3 Some College = 2	♀ = 12 ♂ = 8
NW Ohio (Spanish) 20 Participants	Mexican = 11 Puerto Rican= 1 Mex. Am. = 8	0-10K = 7 11-20K = 5 21-30K = 3 31-50K = 4 51-80K = 1	Elementary = 2 Some H.S. = 12 H. S. Grad. = 4 Some College = 2	♀ = 16 ♂ = 4

Findings: Comparisons Among the Cognitive Interview Groups

Three primary themes form the basis for a preliminary comparison of the 4 different interview groups: 1) Lacking knowledge of question-response protocol and respondents' expected role, 2) Responding outside the expected cultural frame of reference, and 3) Responding outside questions' systems of knowledge. Unlike the other three groups, most Mississippi participants lacked even a general knowledge of the survey process and were unaware of the protocol for their role as the respondent. As such, Mississippi participants, unlike any of the other participants, needed to be instructed and guided by interviewers in order to participate in the question-response process. Latino respondents, on the other hand, (especially those who were first generation Mexican immigrants) differed in their cultural orientation toward various questions – most markedly questions regarding meals and diet. Their differing cultural frame of reference caused differing interpretations and confusion in the response process to these questions and, in many cases, lead to response error. Finally, Mississippi and both Northwest Ohio groups (in comparison to the Hyattsville interviews) had difficulty responding to questions that were written through foreign systems of knowledge – in this case from a medical perspective. Though Mississippi and Latino responses generated more errors, Northwest Ohio Anglo participants also had difficulty reporting whether they had specific chronic conditions and whether they had received mammogram or PSA tests.

It is important to note that, while all three comparative themes involve cognitive processes, they are rooted specifically within sociological processes. It is the social and cultural position of the respondent that informs the cognitive processes. This is seen most clearly in the comparison of differing social and cultural groups. The remainder of the paper will more fully describe these themes, drawing comparisons of the question-response process between the 4 interview groups.

Lacking Knowledge of Question-Response Protocol and Respondents' Expected Role

It has long been recognized, within the field of survey research, that the interview is best conceptualized as a social interaction, bound by social norms and patterns of expectations; the survey interview is viewed as a social system, involving two roles (the interviewer and the respondent) who are united in a common task. This conceptualization of the survey process, one that lays out a relatively well-executed interaction between the respondent and interviewer (essentially strangers bound together by a shared purpose), lacks recognition that the interaction is dependent upon a pre-existing familiarity with surveys and the question-response process.

While this paradigm, in all likelihood, is an excellent depiction of the vast majority of survey interviews, it does not so clearly depict interactive patterns found in many of the Mississippi interviews. To be sure, the interviews illustrate that the normative patterns which frame a successful survey interview are *not* rooted within a universal system of knowledge. 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. Consequently, these participants 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 operating with 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:

> PARTICIPANT: 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.*
>
> PARTICIPANT: 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 response (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 which was also unmet by many Mississippi participants is that respondents should understand that they are to ultimately produce an answer that will fit within a provided response category. Additionally, they should understand, if their "real answer" does not squarely match the provided category, they can "make do" and adjust so that their answer is categorizable. Of course, this issue is a common consideration in questionnaire design; it is typical for a respondent to protest that no category adequately represents their experience. Some Mississippi participants, however, were unaware of this expectation. Because they did not understand the mechanics of survey research, they considered any type of answer (as long as it answered the question) as suitable. This is illustrated in an interview with a 34 year old woman who, throughout the course of the interview, increasingly became upset each time the interviewer asked for clarification or refinement of her initial response so that it could be appropriately categorized within the survey format. 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…*
>
> PARTICIPANT: Last year.
>
> *INTERVIEWER: Was it less than one year ago or one to two years ago?*
>
> PARTICIPANT: Last year!
>
> *INTERVIEWER: So, does that [mean]…*
>
> PARTICIPANT: A year ago!

To ease the situation, as well as to obtain a code-able response, the interviewer was compelled to explain the fundamentals of questionnaire design. The interviewer needed to convince the participant that she was not being rude (which was the woman's understanding), but was merely following a set of instructions that were 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…*
>
> PARTICIPANT: [Now understanding, the woman kindly pats the interviewer on the leg and interrupts] Put less than two years ago, then.

Now, understanding that there were pre-written response categories (response categories that were written by someone else and were, consequently, not changeable), the participant learned an aspect of the role of survey respondent – to provide a code-able answer. This lesson in questionnaire format was pivotal in the interview; from that point, the interaction was much more pleasant and easy-going.

Similarly, those unfamiliar with the format of survey questions had particular difficulty with scale questions that used generic, essentially non-descript, response categories, such as "mild," "moderate," "severe," and "extreme," but relied on incremental order to convey meaning. One 59 year old man, for example, had difficulty responding to such a question, contending that "to me, mild and moderate are about the same thing." It was also the case that one Northwest Ohio woman (of all Ohio interviews) did not know the meaning of the term "moderate" and, like Mississippi participants, did not intuit the meaning from the increasing order and, consequently, ignored that response category. Once the term was explained to her, she recognized that "moderate" was the most accurate response and requested to have her original answer changed. Most noticeably, the Mississippi woman who earlier had worried that she would not be able to answer the survey's questions also struggled with these response categories…

> *INTERVIEWER: Overall, in the last 30 days, how much difficulty did you have with work or household activities? Would you say none, mild, moderate, severe or extreme?*
>
> PARTICIPANT: I guess that's one I can't hardly get because my housework… is hard.
>
> *INTERVIEWER: Do these just – these categories just not fit you?*
>
> PARTICIPANT: It's the categories, you know, that I can't, you know, get them right, so I really can't just get them right.
>
> *INTERVIEWER: If you were to describe, in your own words, how much trouble you have with work and household activities, how would you describe that?*
>
> PARTICIPANT: Okay. In my own words, okay, when I get ready to do something, I can't do it. If I get ready to dust, now, I can do it if I sit down on the floor, scooting around. I can do it that way.

Because the woman was unable to make sense of the categories, the interviewer needed to explain the ordering of the categories; she needed to make explicit the implied meaning of the categories.

> *INTERVIEWER: Well, if this is like a little trouble, [interviewer puts her hand down toward the floor] and this is kind of like middle trouble [interviewer raises her hand to waist-level], and this is like a lot of trouble [interviewer raises her hand again to*

head-level], where are you? [Indicating again with her hand,] Are you near the top, are you near the bottom, are you kind of in the middle?

PARTICIPANT: I'm here, about [She puts her hand at head-level].

INTERVIEWER: You're like a lot of trouble.

PARTICIPANT: Right.

INTERVIEWER: So, it's difficult?

PARTICIPANT: It's difficult.

For many of the Mississippi participants, like the woman in the above passage, once they were taught about the survey interaction, the question-response process became much more straight-forward. This was not the case, however, for a few participants. These participants 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?

PARTICIPANT: What was that?

INTERVIEWER: Do you have any difficulty hearing or seeing?

PARTICIPANT: I don't understand.

INTERVIEWER: Okay.

PARTICIPANT: I don't understand, that's why I want my wife to take it. You can ask her the same thing, and you can get all that wrote down.

The interviewer chose to ignore the respondent's request to have his wife serve as a proxy. Instead, he restates the question so that it is communicated conversationally. In this less structured format the participant is able to clearly understand the question and relay rather detailed health information….

INTERVIEWER: Can you hear all right?

PARTICIPANT: 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?

PARTICIPANT: 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 skim over it. It's dim.

INTERVIEWER: Do you have any trouble walking?

> PARTICIPANT: I can walk all right. When I walk my back will hurt me. If I walk a little piece, a couple times like from here outdoors I'd have to sit down because all across my back here and my side it would be hurting so bad I would have to sit down at the end.

As these excerpts have illustrated, the survey process necessarily holds expectations for the respondent. Examining the ways in which respondents struggle with the interaction points to the types of expectations inherent in the question response process that typically go unnoticed (e.g., knowing that responses are impromptu, knowing to provide a code-able answer, or discerning the meaning of questions in a structured format). 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.

This type of difficulty was not seen to this degree in the Northwest Ohio group, among both the English and Spanish speaking participants. In only one English interview (a man in his 40s with Down's syndrome) and in one Spanish interview (a woman in her 50s who had spent her life as a homemaker) did Northwest Ohio participants need to be guided through the protocol of the question-response interaction. And, as described before, in only one English interview did an Ohio participant fail to intuit the meaning of vague Likert scale response categories. Because we had originally conceptualized this problem as being related to income and education-level, we were somewhat surprised to not observe the same degree in Northwest Ohio interviewees who had similar levels of formal education. Upon further reflection, however, we believe that Northwest Ohio participants, unlike the Mississippi participants, had much more exposure to other systems of knowledge and, consequently were much more adaptable and resourceful in new interactional settings. We expect that subsequent analysis of the Ohio interviews will illuminate more detail regarding this hypothesized relationship.

Responding Outside the Expected Cultural Frame of Reference

From the very beginning of Spanish interviews, it was clear that some translated survey questions caused interpretation difficulties for Latino participants. That is, particular words were translated literally from English and, because of cultural differences, did not convey the same meaning. For example, the phrase *frijoles con chile* was intended to mean chili beans, but was interpreted by most Latino participants as beans with hot sauce. Additionally, some words varied by particular region (e.g., Puerto Rican Spanish uses

nami for yam, while Mexican Spanish uses *camote*) or were more formal forms of Spanish (e.g., the word *fiambre* for lunchmeat). Consequently, these terms were not always understood by Latino participants. Similarly, some words in Spanish had more than one meaning and could easily be taken out of context. For example, the word *comida* can mean meal, food, and the name of a meal – like the Anglo word for dinner. Consequently, the question "Did you eat a morning meal?" was translated as *"¿ Ayer comío Ud. la comida de la mañana?"* but understood by participants as "Did you eat your dinner in the morning?"

In addition to recognizing the language differences, the Latino interviews revealed cultural differences (unrelated to translation problems) that impacted the question response process. For example, traditional Mexican meal patterns differ from the meal patterns of Anglo-Americans. Although customs around food or eating are tied to the social class of its consumer, as well as the time of year, several of Mexican meal patterns are an institutional part of the culture. These traditional Mexican meal patterns continue through migration to the United Sates and have managed to survive, to varying degrees, depending on acculturation to the working and eating patterns of western culture. (See Appendix A for a more detailed description of the meal patterns of many Mexican families.) Consequently, food and diet questions – that were structured in the questionnaire by the Anglo-American meals of breakfast, lunch and dinner – created difficulty for most of the Mexican participants who used their own cultural meal pattern as a frame of reference for responding. For example, this passage illustrates difficulty because of the confusion over the multiple meanings of the word "comida" but also because of the differing meal patterns:

INTERVIEWER:	*Digame, Ayer comio usted la comida de la manana?* Tell me, did you eat a meal in the morning?
PARTICIPANT:	No.
INTERVIEWER:	*Cuando digo "la comida de la manana" que viene a su mente. Teine un nombre esa comida de la manana?* When I say morning meal, what comes to your mind? Does it have a name, that morning meal?
PARTICIPANT:	*Pues, un nombre del estillo de la comida* Well, a name for the type of food?
INTERVIEWER:	*Tiene otro nombre Usted para distingir esta comida a otros comidas?* Do you have a name to distinguish this meal from other meals?
PARTICIPANT:	*No yo le diria que seria el mismo nombre pero no lo uso asi.* No, I would say that it is the same name but I do not use it that way.

INTERVIEWER: *Y la manana para Usted , que quiere decir, que tanto tiempo, de que horas a que horas*
And morning for you, what does it mean, what time frame or from what hour to what hour is it?

PARTICIPANTS: *Pues en la manana el desayuno es a las nueve.*
Well in the morning "el desayuno" is at nine .

INTERVIEWER: *So, el desayuno, lo nombra el desayuno, es a las nueve ?*
So, "el desayuno, you name it "desayuno", is at nine?

PARTICIPANT: *Si, por que you no doy el que le dicen….como le dicen…..... Braaq faat*
Yes, because I don't serve, what they call…… how do they say…….. Braaq faat

INTERVIEWER: Breakfast?

PARTICIPANT: *Si.*
Yes.

INTERVIEWER: *No hace breakfast sino que hace desayuno?*
You don't make breakfast, but you make "desayuno"?

PARTICIPANT: *Si, yo desayuno, asi estoy acustumbrada…doy mi desayuno y mi comida y en la cena como algo mas liviano.*
Yes, I have "desayuno," that is how I am accustomed… I serve "desayuno," and than my "comida" and for "cena," I eat something a lot lighter.

Even more understated, but perhaps more consequential for health surveys, we found that the concept of health, itself, differed dramatically from Latino and Anglo participants. While most of the Anglo participants (77%) conceptualized health as a physical phenomena, most of the Hispanic participants (90%) used a far more comprehensive conceptualization of health, incorporating emotional and spiritual dimensions. For example:

INTERVIEWER: *Diria que su salud en general, es excelente, muy buena, buena, regular o mala?*
Would you say your health in general is excellent, very good, good, fair or bad?

PARTICIPANT: *Excelente.*
Excellent.

INTERVIEWER: *Y porque dices excelente ?*
And why do you say excellent?

PARTICIPANT: *Porque me siento bien hasta ahorita, no tengo ningun ilimento fisico, este, tengo ganas de vivir cada dia. Me levanto con ganas de seguir adelante y evocar a mis hijos que sean Buenos hijos.*

Because I feel fine up to now, I don't have any physical limitations, and I have the desire to live each day. I get up with the desire to keep going and evoke my children to be good children

INTERVIEWER: *Y porque no " muy buena en lugar de excelente.*
And why not, very good in place of excellent?

PARTICIPANT: *Porque si diria no muy buena, me sentiria enferma. Y es todo a lo contrario, me siento bien. Fisicamente me siento bien, Moralmente tambian.*
Because if I said no very good, I would feel ill.
And it is totally contrary, I feel good. Physically I feel good, morally as well.

INTERVIEWER: *Cuando dises Moralmente que quires decir?*
When you say Morally what are you saying?

PARTICIPANT: *Quiero decir que moralmente, que yo me siento, o sea , mi espiritu, me siento bien con migo misma y con las personas que me rodian.*
What I mean to say is morally, I feel, that is my spirit, I feel good with myself and with the persons that surround me.

Upon reflection, it is not surprising that Latino participants – especially those who were raised in Mexico – would more closely associate health with spirituality. The tradition of Mexican medicine, *curanderisimo,* is directly connected with ritual and a more holistic sense of well-being. It is interesting to note that the two Latinos who did not hold a comprehensive view of health were second generation Mexican Americans and, consequently, had assumed more Anglo cultural customs. At this point, the extent to which differing conceptions of health may impact the quality of survey data for this general health question (and possibly other subjective health questions) is unclear. We hope that subsequent analysis of the Ohio and Hyattsville interviews will more fully illuminate this issue.

Responding Outside Questions' Systems of Knowledge

The final comparative theme regards respondents' abilities to form an answer to a question that is rooted within a knowledge system existing entirely outside their own frame of reference. That is, the question addresses a matter that, in no way crosses the respondents' own personal knowledge; the words or language used in the question is not what they normally use to describe their experience. As in the case of these particular questionnaires, the system of knowledge that respondents were required to address was medical knowledge, and the clearest example of this was in the chronic condition section of the questionnaire. In that section respondents are asked about various health conditions

in which they have been diagnosed. The particular intent of this set of questions is to track *doctor diagnosed conditions*, and respondents are required to report information told to them by their doctor. However, as is evident from the following passages, respondents – especially those with limited access to good health care or those who are unable to retain what was told to them by their doctor – are not always able to accurately report this information. This theme was present among all interview groups, though appeared less frequently among Hyattsville participants who, for the most part, had adequate health resources. For example, this 30 year old Mississippi man, like several participants from Mississippi and Ohio, confused the condition of "chronic bronchitis" with the condition of "acute bronchitis"…

> *INTERVIEWER: Do you have chronic bronchitis?*
>
> PARTICIPANT: I think I do. I'm not for sure.
>
> *INTERVIEWER: Okay. What -- tell me what you're thinking.*
>
> PARTICIPANT: As far as what? About the bronchitis?
>
> *INTERVIEWER: Yes.*
>
> PARTICIPANT: Well, I was just trying to think of, you know, you know, I think 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 Mississippi man who was recently diagnosed with chronic bronchitis. He knew that he definitely had chronic bronchitis, but when he was asked if he was diagnosed with asthma, he also answered affirmatively because he was under the impression that he was taking asthma medication:

> *INTERVIEWER: Do you have asthma?*
>
> PARTICIPANT: I guess I do. He's [the doctor's] got it down as that acute… [The 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, about five or six different types. All that has to do with the chronic bronchitis. It's acute, it's severe….
>
> *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?*
>
> PARTICIPANT: I could not answer that. I don't know. Wheezing of the chest is what I have. What it does is when you – smoking doesn't help, of course, we all know that. When I catch a cold, I am susceptible to pneumonia almost immediately.…

INTERVIEWER: Okay. Now, do you remember specifically if your doctor said you had asthma?

PARTICIPANT: No. He gave me asthma medication….I know for a fact, I had the… [respondent has trouble articulating the actual diagnosis] … acute blah, blah, blah chronic bronchitis.

INTERVIEWER: So, this question right here, do you have asthma? Is that a tricky question for you to answer?

PARTICIPANT: No, it's not a tricky question. It's just I can't answer it honestly. I can't say yes, I can't say no, because I don't know.

INTERVIEWER: Okay.

PARTICIPANT: I don't want to lie to you in this interview. All I can do is tell you the truth.

INTERVIEWER: Okay.

SUBJECT: That's all I can do.

INTERVIEWER: Okay.

SUBJECT: I can't answer that truthfully.

By far, the biggest problem in the chronic conditions section was the various heart conditions: coronary heart disease, angina, heart attacks, and congestive heart failure. These questions contained words that were filled with medical jargon, and while participants would know that they had problems with their heart or that they indeed had heart disease, they were uncertain if they had "coronary heart disease." For example, when asked, "Do you have coronary heart disease?," one woman responded:

PARTICIPANT: I have an enlarged heart. I don't know whether that would be [coronary heart disease] – it is a disease though. It is, but I don't know about that.

INTERVIEWER: And you know that's a disease?

PARTICIPANT: Yes.

INTERVIEWER: But, you don't know if it qualifies – if it counts as coronary heart disease?

PARTICIPANT: No.

When asked the same question, another woman responded:

PARTICIPANT: 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?

PARTICIPANT: 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 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?

PARTICIPANT: No, I don't.

In another interview, a man experienced the same type of difficulty:

PARTICIPANT: I really don't understand it, but I do have a problem with my heart. Sixty percent of it is closed, because they had to go in so they can see what was wrong, and they found out it was sixty percent closed, you know….

INTERVIEWER: Okay. Did your doctor tell you that you had coronary heart disease? Did he use those words?

PARTICIPANT: I don't know for sure what he used on that, but I knew he said I had heart problems.

INTERVIEWER: You just - you know you have a heart problem?

PARTICIPANT: I think it's on that thing there, too. I think what you said was that coronary whatever you want to call it, yes. I would say yes.

What this man refers to in this passage ("it's on that thing there") is a report from his doctor that describes his entire medical condition. From this report, we were able to learn that this participant was diagnosed with final stage emphysema, chronic bronchitis and congestive heart failure. He could not read the report and was unable to accurately report his conditions:

INTERVIEWER: Do you have congestive heart failure?

PARTICIPANT: No. I never had failure.

INTERVIEWER: Okay, you would say no to that?

PARTICIPANT: Yes.

INTERVIEWER: Okay. What does that mean to you? Congestive heart failure, what do you think that means?

PARTICIPANT: It means just like if you, you know, having a heart attack or something like that….. To me, you know, some people have heart pain and it doesn't kill them, but you know, I never had that problem.

INTERVIEWER: It's when your heart stops pumping, is that what you mean?

PARTICIPANT: And then they bring in - you know how they shock you and bring you back or something. I never had that problem.

These questions ask respondents about matters in which they do not know the answers. The answers to the questions lie outside their own system of knowledge; they are being asked to be informants for their doctors, (that is, other knowledge systems) and those who have little education have a particularly difficult time making that leap.

Those respondents who were economically well off were more likely to have health insurance, received more attention from their doctor, and consequently, were more likely to understand their medical condition. Interestingly, one woman from Ohio who had been diagnosed with congestive heart failure was able to describe her disease to great detail though she had only a high school education and was living in extreme poverty. The most telling difference between her situation and the others who were unable to correctly respond to this question was that she was under the care of the county health department and receiving many social services, including weekly visitations of a nurse practitioner who was able to educate her about the disease.

The inability for participants to provide answers brings attention to the fact that survey questions often ask respondents to provide information that is outside their personal knowledge base. In these two particular questionnaires, the problem was found not only in the chronic condition section, but also in questions about medical tests ("Have you ever had a PSA test?" "A mammogram?"), in causal questions ("Which one of the following is the best description of the cause of this condition: accident, existed from birth or genetic, work conditions, disease or illness, aging, or emotional or mental health problem or condition?"), and in medication questions ("In the past month did you take tranquilizers such as Valium?," "In the past month did you take an anti-depressant?") Participants who were taking Xanax for a variety of reasons ("for nerves," "to help me quit smoking," "to calm me so I can sleep") could name the actual medication, but could not properly classify the drug as a tranquilizer, an anti-depressant or a sleeping pill.

Conclusion

Conducting cognitive interviews with small subsections of the US population serves two functions for survey research. On a practical level, cognitive analysis of interviews with different cultural and racial/ethnic groups suggests several guidelines for improving questionnaires so that survey research can advance the quality of estimates for these subpopulations. On a more theoretical level, however, identifying various ways in which participants from various social groups were unable to negotiate the survey interaction provides clearer insight into the intricacies of the question-response process – interactive aspects that are otherwise invisible. Because a number of the Mississippi participants had never participated in a survey and were entirely unfamiliar with the expected patterns of interaction, these interviews help to articulate basic expectations of the survey

respondent. These interviews suggest that respondents' particular social location does influence how respondents make sense of and answer survey questions. Fully understanding this relationship between socio-cultural phenomena and the response process is vital for health disparities research as well as survey research occurring within international and multi-cultural contexts.

Appendix A: Mexican Meal Patterns

Desayuno	from the Latin term "dis-lunare" which means to break the fast, is consumed after a night's fasting, after one awakens in the morning. It often consists of something light such a cup of coffee and some bread, tortilla or hot cereal.
Almuerzo	follows the *desayuno* a heavier breakfast meal, which may consist of chorizo with eggs, fried potatoes, refried beans, tortillas, fruit, coffee, milk or juice. Not to be confused with western culture's lunch, this meal is consumed before 11:00 a.m Depending on a person's schedule, one does not necessarily have to have a desayuno before having almuerzo. A mother may fix a big almuerzo before the children go off to school while the father would have a light desayuno before going of to work. Yet in the summer months or on weekends, when school was out families might have the large Almuerzo later in the morning after having had a cup of coffee, milk, juice and some pan dulce shortly after awakening. On Sundays, women might prepare a large pot of "*Caldo*"chicken or beef vegetable soup with corn tortillas which the family would have for Almuerzo after attending early morning mass.
Comida	served any time in the afternoon between noon and 4 p.m., is the heaviest meal of the day. This large meal may consist of a "*sopa*" soup, a main dish or "*guisado"*, such as beef, chicken or pork with gravy accompanied by beans and rice, tortillas; a fruit beverage followed, perhaps, by *"postre"*, a desert. The comida is typically consumed at noontime during the school year, at 1 or 2 during the summer months except on Sundays where it might be late in the afternoon, before 4.
Cena	a lighter meal consumed at night. It may consist of milk, hot chocolate with some bread, a warm flour tortilla with some refried beans, some fruit or left overs from the Comida. If the amuerzo and comida were substantial and one had a merienda, the cena might be bypassed all together.
Merienda	is gathering moment with the family where they converse and partake of "pan dulce" sweet bread or pastries with coffee, Mexican chocolate or some other "*antojitos,"* whim such as " *champurrado*" a hot chocolate pudding. It was the custom in some families to have "merienda" at 3 in the afternoon. The clock could be set by this ritual. At 3 p.m., a mother would start the coffee or make Mexican chocolate and aunts, cousins and married siblings would arrive with a bag of "pan dulce" from the Mexican bakery and would visit as coffee, milk or chocolate are served with sweet bread. This merienda ritual resembles the European afternoon tea more than a Western afternoon snack.

Contact

Kristen Miller, PhD
National Center for Health Statistics
3311 Toledo Road
Hyattsville, MD 20782, U.S.A.
email: ktm8@cdc.gov