# Vignettes in Cross-Cultural Cognitive Testing: Adaptation for Spanish-Speaking Respondents of Lower Educational Levels<sup>\*</sup>

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## Abstract

Survey instruments often contain skip patterns that allow respondents to bypass questions that do not apply to them. In some cases, these questions are only applicable in rare or unusual circumstances. When cognitively testing an instrument containing questions for respondents in unusual situations, it can be difficult to recruit respondents with appropriate characteristics to effectively test all of the questions. Vignettes are a useful tool for testing frequently-skipped questions. A vignette is a brief story or scenario presented to respondents, who are then asked to respond to survey questions in the context of the imaginary situation.

Little research has been done on the use of vignettes to test survey translations. Of concern is whether the same vignettes can be successfully used across language and cultural groups, and if so, how to go about developing them. This paper describes the design of vignettes to be used with both Spanish and English speakers in the testing of a series of frequently-skipped American Community Survey questions at the U.S. Census Bureau. A design-related concern was the fact that the Spanish-speaking respondents would be of lower average educational levels than the English speakers. The vignettes needed to be comprehensible for both groups of respondents.

We conducted cognitive interviews with vignettes with a total of 46 Spanish speakers and 11 English speakers. This paper takes an in-depth look at whether and how respondents understood the vignettes across language groups. We found that the use of both pictures and verbal descriptions in our vignette construction allowed for the majority of respondents of both groups to understand and use the vignettes successfully. The paper concludes with a discussion of areas in need of further research.

**Key Words:** Vignettes, Bilingual cognitive testing methodology, Spanish survey research

## 1. Introduction: Vignettes in Cognitive Testing

Cognitive testing is a form of survey instrument pretesting which involves in-depth, faceto-face interviews with respondents of different backgrounds. The survey instrument is administered to respondents, who answer the questions and then later are asked to give feedback and comments. The goal of cognitive testing is to uncover question wording or terminology which might have unintended meanings, and could therefore affect comprehension of the survey instrument.

<sup>&</sup>lt;sup>\*</sup> This report is released to inform interested parties of research and to encourage discussion. The views are those of the authors and not necessarily those of the U.S. Census Bureau.

Cognitive testing can be made difficult by question topics which respondents may consider to be sensitive or by the sheer complexity of a question. There are also questions that are asked infrequently that only apply to respondents with rare circumstances. It can be costly, time consuming, and difficult to recruit cognitive interview respondents who meet all of the characteristics in question for a given study. Vignettes are helpful in these instances.

A vignette is a brief imaginary story or scenario that is presented to respondents. When vignettes are used as part of cognitive testing, respondents are asked to answer survey questions in the context of the imaginary situations outlined for them. A vignette can be presented using written descriptions, pictures, diagrams, and/or other visual imagery.

#### 1.1 Review of the Literature on Vignettes and Survey Research

A number of researchers have used or studied the use of vignettes in cognitive testing in the past. The U.S. Census Bureau in particular has employed vignettes in the cognitive testing of sensitive, complex and/or unusual questions (Pascale & Mayer, 2004; Gerber et al., 1996; Gerber, 1994; Bates & DeMaio, 1989; Martin, 2004). A number of other researchers have also examined the use of vignettes in various disciplines (Finch, 1987; Lee 1993). However, there is very little research that looks at vignettes for use across different languages and/or cultures.

Two recent studies discuss the use of "anchoring vignettes" in cross-cultural surveys, (Kapteyn, et al., 2008; van Doorslaer et al., 2007). Anchoring vignettes are imaginary situations embedded in field versions of survey instruments and they allow researchers to compare respondent answers about their own personal situations with how they evaluate the same issue in the context of an imaginary situation. This is particularly useful when a survey is conducted across cultures, as it provides researchers with a baseline of how people from a particular cultural group evaluate a given situation. Respondents' evaluation of the hypothetical situation can then be compared with their evaluations of their own real life situations and their responses can be calibrated for interpretation across cultures. Both of these studies look at self-reported health status across countries and cultural groups.

Despite these new anchoring vignettes studies, there is a decided lack of research related to the use of vignettes in the cognitive testing of survey translations. Two exceptions are Goerman and Clifton (2009) and Sha and Pan (2009).

Because of the dearth of research on vignettes for use in pretesting multilingual survey instruments, we developed the following questions to guide us in our research: 1) Are vignettes a useful tool for testing survey translations?; 2) Are vignettes equally effective across language groups?; and 3) Do vignettes need to be modified for use across language groups and if so, how?

## 2. Research Problem

As a part of a larger U.S. Census Bureau project, we were asked to cognitively test a series of uncommonly asked questions. The research was conducted between 2007 and 2009 in a collaboration between researchers from the U.S. Census Bureau and RTI International, and it involved the pre-testing of both the Computer Assisted Telephone

Interview (CATI) and Computer Assisted Personal Interview (CAPI) Spanish-language versions of some American Community Survey (ACS) questions. The testing focused on the Spanish translation of the survey instrument, but also included a smaller number of English-language cases as a baseline for comparison. This was done to make it easier to determine whether a problem encountered in Spanish-language interviews was due to an issue with the translation or to an underlying problem with the survey instrument in general (see Goerman and Caspar, forthcoming, for more on the inclusion of source language interviews in the testing of a translation). This paper focuses on a subset of the larger project, in which 46 Spanish and 11 English interviews were conducted using vignettes.

## 2.1 The Decision to use Vignettes

The series of questions for which we chose to use vignettes was comprised of a filter question to be asked of all respondents followed by two rarely-asked questions about physical access to housing meant to be asked only of respondents in unusual circumstances. We will call these the "direct access" questions for the purposes of this paper. On the whole, these questions were designed to identify people living in a separate section within a respondent's home, whom the respondent may not consider to be a part of his or her household. The "extra" inhabitants would presumably not have direct access to their living quarters; instead, they would have to go through someone else's home to get to theirs (see Figure 1 below for the original question wording to be tested).

Figure 1: Original "Direct Access" Question Wording

- 1. Do you have direct access to your living quarters from the outside or through a common hall, or must you go through another unit to enter your living quarters?
- 2. How is access to the sample unit achieved?
- 3. Does any other household at this address live with your household?

Not having direct access to one's home is a relatively uncommon situation and we realized that it would be difficult to recruit large numbers of cognitive interview respondents whose living arrangements fit this description in order to test the second and third questions in a realistic manner. Instead of spending extra time and resources to recruit this type of person, we decided to create vignettes for use in our pretesting. In this way, we could test the direct access questions with respondents, regardless of the type of housing unit they inhabited.

#### 2.2 Changes between Rounds 1 and 2 Question Wording

We conducted two rounds of cognitive testing with minor question wording changes in between (see Figure 2 for the Round 2 wording of the direct access series).

Figure 2: Revised Version of "Direct Access" Questions for Round 2 Testing

- 1. Do you have direct access to [RESPONDENT'S ADDRESS] either from the outside or through a common hall?
- 2. Do you have to go through someone else's living quarters to get to yours?
- 3. Are there any other living quarters either occupied or vacant at [RESPONDENT'S ADDRESS]?

Since all of our respondents heard and answered question 1 in the context of both their real life and the vignette situations, we focus our analysis in this paper on question 1.

Because the question wording was not changed substantially between the two rounds of testing and respondents continued to experience the same problems across the rounds, we have combined the results of the two rounds for our discussion here.

## 3. Sample

#### **3.1 Description of Respondents**

For this project we conducted cognitive interviews using vignettes with a total of 57 respondents across the two rounds of testing. Of those people, 46 were Spanish speakers and 11 were English speakers. The respondents ranged from having some formal education but less than a high school degree to having a college or advanced degree. A greater proportion of respondents had a high school degree or lower (81%) than those who had completed college or taken some college courses (19%). We intentionally recruited more respondents with lower educational levels since this is the type of respondent who would be more likely to be interviewed using the ACS CATI or CAPI instrument. The Spanish-speaking respondents were from a number of different national origins: Mexico, Puerto Rico and various countries in Central and South America. English speaking respondents were white or black and there was one multi-racial respondent who identified himself as white and black.

#### 4. Materials

#### **4.1 Direct Access Vignette**

The direct access questions were created to uncover "hidden" living quarters within a housing unit, whose inhabitants may otherwise go uncounted because a respondent may consider them to constitute a separate household. As previously mentioned, several factors had to be considered when designing the vignettes for use in the cognitive testing. We wanted to test the instrument with the types of respondents most likely to be interviewed with this instrument in the field. While a paper ACS instrument is mailed to most addresses selected for the survey, the initial mailing is in English. Respondents may request that a Spanish-language questionnaire be mailed to them, but the vast majority of monolingual Spanish speakers who complete the ACS survey are ultimately interviewed using the CATI or CAPI instrument. Because monolingual Spanish-speaking immigrants in the U.S. are of lower average educational levels than the general population, we

needed to keep literacy levels in mind in the design of our vignettes. We also needed to keep in mind that the vignettes would be administered to both Spanish and English speakers, and we wanted to avoid any confusion that could arise based on linguistic or cultural differences between the groups. We chose to design a single vignette in the two languages for use with respondents of all types. We therefore strove to create as simple a scenario as possible that would illustrate the situation that survey designers were trying to capture with these questions. Because of the inclusion of lower literacy level respondents in our sample we decided to include a drawing to help illustrate the imaginary situation.

## 4.1.1 English Version of the Vignette

In setting up our imaginary situation, we created both written text and a picture (see Figure 1 below). Both the written text and picture were printed on a piece of paper that was given to respondents to review, and the text was also read aloud to respondents by the interviewers to avoid potential problems caused by low literacy.

Imagine that you are renting a small apartment in the back of a house from a couple who also lives in the house. You have your own private space: a large room that you use as a bedroom, a kitchen and a bathroom. There is no door from your area to the outside. In order to go outside you have to walk through the couple's living room.



Figure 1: English Version of "Direct Access" Vignette

#### 4.1.2. Spanish Version of the Vignette

We designed the Spanish- and English-language versions of the vignettes simultaneously and strove for equivalency of meaning across versions. The Spanish-language version is included in Figure 2, below. Suponga que usted esté alquilando un pequeño apartamento en la parte de atrás de la casa de una pareja que también vive en la casa. Usted tiene su propio espacio privado: una habitación grande que tiene un dormitorio, una cocina y un baño. La habitación no tiene una puerta que da hacia afuera. Para ir afuera, usted tiene que pasar por la sala donde vive la pareja.



Figure 2: Spanish Version of "Direct Access" Vignette

## 4.1.3 Responses to the Vignette

The vignette was designed to have definite "correct" answers. In response to the first direct access question, "Do you have direct access to your living quarters from the outside or through a common hall, or must you go through another unit to enter your living quarters?" we anticipated that respondents would answer, "Through another unit."

# 5. Methods

In cognitive testing, respondents were first asked the direct access questions, in addition to many other unrelated survey questions, regarding their own personal, real-life situations. Respondents were essentially asked all survey questions on related topics in segments followed by retrospective probing on each given segment of questions. The testing included both scripted and unscripted cognitive interview probes. Scripted probes were planned in advance and included in a cognitive interview protocol, while unscripted probes arose in response to unusual or interesting issues that respondents brought up in the course of the interview.

The goal was to administer the instrument in as realistic a manner as possible but to ask for respondent interpretation of key terms and questions while their thought processes in answering the questions were still fresh in their minds. Because of this, the interviewers broke in with probes after each group of related questions had been administered. After the entire interview had been administered in terms of respondents' real-life situations, they were asked to look at the vignette situations as a part of a debriefing section. The real-life direct access questions were administered very early in the interview with a long gap between this and the vignette administration involving the same questions. After respondents had answered the direct access questions in the context of their real-life situations they were asked some debriefing probes related to how they had interpreted the questions and key terms in them. They were also asked to elaborate when an unusual situation had arisen or when they had said that they did not have direct access in response to question 1. This way we could determine whether they had seemingly interpreted the question correctly or whether they had experienced difficulty.

After answering the questions again in the context of the vignette, respondents were again asked to tell the interviewer what they thought the question had been asking, particularly in cases where they had given an "incorrect" response to any of the questions. They were also asked if there were other terms they might use to express the concepts of interest in the questions.

The goal was to compare respondents' real-life answers to the direct access questions to their answers to the same questions in the context of the vignette. We wanted to see, first of all, if respondents were able to answer the real-life version of the questions correctly in the context of their living situations. We expected that most, if not all, respondents would have direct access to their living quarters and would skip questions 2 and 3. Through administering the same questions in the context of the vignettes we hoped to see evidence of whether respondents who did not have direct access (or were imagining that they did not) would interpret question 1 correctly as well. We also hoped to get feedback on questions 2 and 3, which should have been skipped by most of our respondents in the context of their real-life situations.

#### 6. Results

Since question 1 in the direct access series was asked twice of all respondents during the cognitive testing, we were able to compare respondents' answers in what should be a real-life direct access situation in most cases and an imaginary non-direct access situation.

We found that this series of questions proved confusing for respondents and that a large number of them answered question 1 incorrectly in the context of their real-life situations, stating that they did not have direct access to their living quarters when, in fact, they did. The fact that they had answered incorrectly became apparent during our probing, in which respondents were asked to describe their housing situations in their own words. Many respondents were then led down the wrong skip pattern, and they were asked questions 2 and 3 from the series (see below for more specifics on the incorrect answers).

#### **6.1 Spanish Speakers**

There were a total of 46 Spanish speakers who were asked the direct access questions both about their real-life housing situations and in the context of the vignette. Table 1 shows how many people answered correctly or incorrectly in response to both the reallife questions and the vignette questions. Reading across the rows enables one to compare a respondent's real-life answer with their answer given in the context of the vignette. **Table 1.** Count of Spanish-speaking respondents who answered question 1 of the direct access series correctly and incorrectly



There were four possible combinations of respondents' real-life answers to question 1 versus their answers in the context of the vignette: 1) the respondent could answer correctly for their real-life situation and for the vignette situation; 2) the respondent could answer correctly for their real-life situation but not for the vignette; 3) the respondent could answer incorrectly for their real-life situation but correctly for the vignette; and 4) the respondent could answer incorrectly for their real-life situation and incorrectly for the vignette situation.

A total of 33 respondents answered the real-life question correctly. Thirty-eight respondents answered the vignette question correctly. A total of 28 respondents answered both the real-life and the vignette questions correctly. Only three respondents answered both the real-life and the vignette questions incorrectly.

By comparing respondents' answers with follow-up probes which allowed respondents to describe their homes in their own words instead of using the survey instrument terminology, the researchers were able to gauge whether or not respondents had indeed answered the direct access questions correctly in the context of their own homes. Probing indicated that all of the respondents in our sample had direct access to their homes according to the Census Bureau's definition, so all ten incorrect real-life answers involved respondents' mistakenly saying that they did not have direct access.

Examples of "incorrect" real-life answers included apartment dwellers that either did not notice or did not understand the concept that direct access included having access "from the outside <u>or through a common hall</u>." Similarly, some respondents described situations in which they had to walk through gated courtyards to get to their homes and thus did not consider this to be direct access.

It is noteworthy that more respondents answered the question correctly in the context of the vignette than they had in their real-life situations. However, there were five respondents who actually answered the real-life question correctly and the vignette question incorrectly. This may be an indication that the vignette situation was confusing, but it may also be an indication of problems with the survey question wording. In the context of the vignette, one respondent explained that he had considered the living room of the front part of the house to be a "common hall" and therefore had reported that he did have direct access through a common hall in the imaginary situation. Another respondent who answered incorrectly in the context of the vignette thought that the question was asking whether or not everyone living in the house entered through the same door and she had responded "yes" in reference to that idea (which sounded to the interviewer like she was saying that "yes" she had direct access).

There were three respondents who answered both the real-life and the vignette questions incorrectly. They had all experienced the same problems described above but in both contexts.

## 6.2 English Speakers

There were a total of 11 English speakers who were asked the direct access questions both about their real-life housing situations and in the context of the vignette. Table 2 shows how many people answered correctly or incorrectly in response to both the reallife questions and the vignette questions. Again, reading across the rows enables one to compare a respondent's real-life answer with their answer given in the context of the vignette.

**Table 2.** Count of English-speaking respondents who answered question 1 of the direct access series correctly and incorrectly



A total of eight respondents answered the real-life question correctly and nine respondents answered the vignette question correctly. A total of six respondents answered the question correctly in both the real-life and vignette contexts. Unlike the case with the Spanish speakers, there was no respondent who answered the question incorrectly in both the real-life and vignette contexts.

Interviewers were again able to determine whether or not respondents had answered question 1 correctly in the context of their real-life situation based on their responses to the follow up probes. As with the Spanish speakers, all English speakers who had answered incorrectly had mistakenly reported that they did not have direct access to their homes. The reasons for misinterpretation amongst the English speakers were the same as for the Spanish speakers. Respondents apparently did not understand that there were two possible response options to this question "direct access from the outside or through a common hall" or having to "go through another unit"? People seemed to interpret going through a common hall or common area as not having direct access. There were also some English speakers who focused on the word "outside" and talked about access through different roads or parking areas. In any case, three of the 11 English speakers mistakenly went down the wrong skip pattern and heard questions 2 and 3 in the context of their real-life situations.

There were no respondents who answered the question incorrectly for both their real-life situations and for the vignette, although there were two respondents who had answered the real-life question correctly but went on to answer the vignette incorrectly. Similar to the Spanish speakers, these respondents looked at the living room in the drawing and interpreted it as constituting a "common hall." They therefore answered that they did have direct access in the context of the imaginary situation.

#### 6.3. Trends Based on Educational Level

Since the monolingual Spanish-speaking, immigrant population in the United States generally has a lower level of education than other groups, one of our testing goals was to see if certain aspects of the survey instrument caused problems only for people with lower educational levels. When the results of the testing were analyzed, it turned out that there were no clear trends by educational level. Most of the respondents, regardless of educational level, answered both the real-life and the vignette direct access questions correctly. It also appeared that vignette comprehension did not vary by educational level, leading us to view the picture plus verbal description approach a success.

#### 7. Discussion

For this study, the use of vignettes to test the rather complex direct access series of ACS questions proved to be useful as part of our larger cognitive testing study. The vignettes provided an opportunity to test questions which are seldom heard by respondents in field interviews due to the relative rarity of the living situation the question series was created to record. Recruiting specifically for respondents residing in living quarters which have no direct access from the outside would have been time-consuming and costly. Through the vignettes, we were able to test the whole series of questions with all of our respondents, regardless of their housing situations. In addition, we were able to test question 1 both with respondents who did have direct access and in an imaginary situation in which people did not have direct access.

A number of respondents unexpectedly answered the direct access questions incorrectly in terms of their real-life situations and we were then able to examine the issue of whether the questions might be easier to understand and answer when a respondent does <u>not</u> have direct access. We found that Spanish-speaking respondents were more likely to answer correctly when imagining non-direct access than when thinking about their own real direct access situations. In English the results were more similar across real-life and imaginary situations, with one more respondent answering correctly in terms of a real-life situation than in terms of the vignette. This provides some evidence that the questions maybe slightly easier for respondents to understand when they are living in the type of situation that survey designers had in mind when designing the question (a non-directaccess situation).

The overall findings pointed to the fact that there was considerable respondent confusion in terms of the survey questions themselves, regardless of whether a respondent was in a real direct access situation or whether he or she was imagining a non-direct access situation. It would have been interesting to compare these results to testing with respondents who lived in a real-life, non-direct access situation, but this was not possible in the context of our study.

This study has also enabled us to examine the use of vignettes in bilingual and crosscultural testing. We did not see evidence that there was a difference in respondent comprehension across languages or that we had designed the vignette inappropriately for a particular language, cultural or education level group.

Despite the apparent success of the vignettes in uncovering problematic question wording, in some cases it was difficult to say whether incorrect responses to the question in the context of the vignette were caused by complexity of the survey question wording, inability to grasp the concept of the vignette, or a combination of both. We do believe that comprehension was aided by presenting the vignette to respondents using both descriptive text (which was read aloud by the interviewer, as well as being printed on a sheet of paper given to the respondent) and a picture, especially for respondents with lower levels of educational attainment and/or literacy. In addition, in this case, using the same vignette situation across language and cultural groups appears to have been a success.

On the whole, we deemed the cognitive testing to be successful in identifying problems with both English and Spanish versions of the direct access questions. As a result, the survey sponsor decided that further research is in order with the possibility of a complete revision of the question series in both languages.

#### 8. Areas for Future Research

One of our research questions was whether or not vignettes would prove useful for cognitive pretesting across language groups. We found in this particular study that vignettes were indeed useful in testing with both Spanish- and English-speaking respondents. However, in future research it would be interesting to study situations where a vignette might not translate well across cultures. This could arise for example, out of situations where respondents are asked to judge distances using the Imperial measurement system, which is the de facto standard in the United States. Respondents who are more familiar with the metric system might have difficulty and this would differ across language groups. Along these same lines, more research could be done into the development of different vignettes for use across different cultural or language groups in an attempt to elicit the same information in terms of question functioning.

At large survey organizations, survey instruments usually undergo rigorous pretesting before they are used in the field. If vignettes are used as part of the cognitive testing of an instrument, for example, should the vignettes themselves undergo pretesting to look for potential cultural or education level differences in comprehension prior to the official pretesting? This is a question that arose out of our research that we feel is worth more investigation.

The vignette we used was administered orally and by using a drawing with text on a sheet of paper. Other recent vignette research has included the use of video vignettes in testing respondents' definition of how many rooms are in a house (Carter, 2008). It would be interesting to study the use of this method in multilingual or multicultural research as well.

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