



This document was prepared by and for Census Bureau staff to aid in future research and planning, but the Census Bureau is making the document publicly available in order to share the information with as wide an audience as possible. Questions about the document should be directed to Kevin Deardorff at (301) 763-6033 or kevin.e.deardorff@census.gov

August 30, 2011

2010 CENSUS PLANNING MEMORANDA SERIES

No. 150

MEMORANDUM FOR The Distribution List

From: Arnold Jackson *[signed]*
Acting Chief, Decennial Management Division

Subject: Behavior Coding of the 2010 Nonresponse Followup (NRFU)
Interviews Report

Attached is the Behavior Coding of the 2010 Nonresponse Followup (NRFU) Interviews Report. The Quality Process for the 2010 Census Test Evaluations, Experiments, and Assessments was applied to the methodology development and review process. The report is sound and appropriate for completeness and accuracy.

If you have questions about this report, please contact Jennifer Hunter Childs at (301) 763- 4927.

Attachment

June 27, 2011

Behavior Coding of the 2010 Nonresponse Followup (NRFU) Interviews Report

U.S. Census Bureau standards and quality process procedures were applied throughout the creation of this report.

Jennifer Hunter Childs and Nathan Jurgenson

Center for Survey Measurement



This page intentionally left blank.

Table of Contents

Executive Summary	
1. Introduction.....	1
1.1. Purpose of Study.....	1
1.2. Intended Audience.....	1
2. Background.....	1
2.1. Nonresponse Followup.....	1
2.2. Update Enumerate.....	2
2.3. Behavior Coding.....	2
3. Methodology.....	3
3.1. Research Question.....	3
3.2. Methodology.....	4
3.3. Inter-coder Reliability.....	6
4. Limitations.....	7
5. Results.....	8
5.1. Behavior Coding Results Tables.....	8
5.2. General Findings.....	12
5.3. Question-Level Analysis.....	15
6. Key Lessons Learned, Conclusions, and Recommendations.....	39
7. Acknowledgements.....	40
8. References.....	41
Appendix A: Framework of Behavior Codes and an Explanation of Their Analytical Function	44
Appendix B: The NRFU Questionnaire.....	46
Appendix C: The Information Sheet.....	50
Appendix D: Clifton Observation Report.....	51
Appendix E: Simplified Recommended CAPI NRFU Personal-Visit Script (Childs, 2008).....	57

List of Tables

Table 1. Behavior Coders' Kappa Scores by Language.....	6
Table 2a. Behavior Coding Data for Interviewer and Respondent Behavior.....	9
Table 2b. Behavior Coding Data for Final Outcome	10
Table 3. Percent of Cases in Which Enumerator Omitted Reference to Information Sheet by Question and Type of Behavior.....	12
Table 4. Percent of Cases in Which Interviewers in the Puerto Rico Spanish Sample Used the Information Sheet by Question.....	13
Table 5. Percent of All Major Changes to Question Wording for S2by Type of Change	15
Table 6. Percent of AllMajor Changes to Question Wording for S3by Type of Change	16
Table 7. Percent of AllInadequate Answers for S3 by Type of Answer	17
Table 8. Percent of AllMajor Changes to Question Wording for S5 by Type of Change	19
Table 9. Percent of AllMajor Changes to Question Wording for Q1 by Type of Change.....	21
Table 10. Percent of AllMajor Changes to Question Wording for the First Administration of Relationship by Type of Change	23
Table 11. Percent of AllInadequate Answers for the Relationship Question by Type of Answer	24
Table 12. Percent of AllMajor Changes to Question Wording for the First Administration of Age and Date of Birth by Type of Change	26
Table 13. Percent of AllMajor Changes to Question Wording for the First Administration of Hispanic Origin by Type of Change.....	28
Table 14. Percent of AllMajor Changes to Question Wording for the First Administration of Race by Type of Change	30
Table 15. Percent of AllMajor Changes to Question Wording for the First Administration of "Another Place"by Type of Change	32
Table 16. Percent of AllMajor Changes to Question Wording for the Undercount Question by Type of Change	35
Table 17. Percent of AllMajor Changes to Question Wording for the Home Ownership Question by Type of Change	36

This page intentionally left blank.

Executive Summary

The purpose of this study is to determine how accurately interviewers ask questions as well as how well respondents answer them. This will identify problematic question wording and guide future interviewer training.

The operation being tested is the Nonresponse Followup interview that occurs when a census form is not obtained from a household during the decennial census. The 2010 Census Nonresponse Followup was interviewer-administered, asked for the same information as the mailout/mailback census form, was conducted using pencil and paper, and each interview lasted approximately ten minutes.

Behavior coding is used to test the interviewer and respondent interaction while conducting the Nonresponse Followup interview. Behavior coding, as a method, systematically describes interactions between interviewer and respondent through the application of a set of uniform codes that make reference to the behaviors that take place during an interaction. There are codes for the ideal question-and-response situation where the question is read as worded and the response easily fits into response categories. However, other codes exist for when the interaction is less than ideal. Deviations might indicate potentially problematic questions and reduced data quality.

The primary research question for this study is: **How well do survey questions perform in interviews?** We examine this issue using data that consists of 204 audio-taped Nonresponse Followup interviews. We acknowledge that audio tapes leave out non-verbal communications that occur in face-to-face interviews and that this sample is of convenience and not statistically random. Six interviewers who speak both English and Spanish fluently were trained in behavior coding. They each coded approximately 40 interviews and both the first interaction between respondent and interviewer as well as the final outcome were coded in this study. Additionally, all coders coded the same seven cases (five in English, two in Spanish) to test for reliability, that is, when presented with the same interview, how often do the behavior coders independently apply the same codes? Using Fleiss' kappa statistic, we find moderate agreement between behavior coders, with the exception of the coding of Spanish respondents, which is lower. That coding is less reliable in Spanish-language versions of surveys has been demonstrated in previous studies.

Results

Strikingly, all questions except for the sex question exceeded the threshold for being considered "flawed" due to major changes made by interviewers to the question wording. One question was read incorrectly 83 percent of the time. **Across all questions, only 37 percent were asked in the ideal form**, or, said differently, they were read the way they are written. Respondent behavior was varied, with some questions having high degrees of adequate and easily codable answers and other questions having more problems. Seventy-nine percent of all questions asked in testing resulted in an adequate final outcome.

We also looked at how often interviewers did not make reference to the Information Sheet that should be provided to respondents to help them in answering certain questions. The relationship

question had the poorest use of the list of response categories contained on the Information Sheet, with interviewers failing to reference the list in 59 percent of all cases observed in this study. The residence instructions list was not referred to in 35 percent of cases. The Hispanic origin list was not referred to in 22 percent of cases, and the race list was not referred to in 28 percent of cases. Not using the Information Sheet may result in deteriorated data quality for these questions.

Some of the major results will be listed here, and many more are found in the full report. In Question S2, we found a serious problem in that many interviewers did not say both “live” and “stay” when reading the question. Question S3 has been revised since 2006, but still exhibited major problems both with interviewers reading it as worded as well as with respondents providing inadequate answers. One critical error often made by interviewers in the roster question is that many did not ask the respondents to start with an owner or renter of the household. The questions asking about Hispanic origin and race were entirely omitted nearly half of the time when asking questions about other members in the household aside from the respondent. We suspect that interviewers are wrongly assuming that when the respondent answers Hispanic origin and race for themselves, that the rest of the household will have the same answer. Last, in the question that asks about other people staying in the household, “break ins”, or respondent interruptions, were prevalent due to the complex nature of the question itself.

Overall, interviewers often changed the wording of the questions. The encouraging note coming out of this study is that the Information Sheet appears to have been used more often as a visual aid in this study than it had been during the census tests.

1. Introduction

1.1. Purpose of Study

In order to learn how well census interviewers ask and respondents answer census questions, a series of behavior coding studies were planned for three of the interviewer-administered survey questionnaires during the 2010 Census (Nonresponse Followup (NRFU), Coverage Followup, and Census Coverage Measurement Person Interview). The purpose was to identify problems with how interviewers ask, and respondents answer, questions. This study focuses on the Nonresponse Followup (NRFU) to the 2010 Census.

By behavior coding these interviewer-administered questionnaires, we will know whether census questions are being asked as intended and will identify problems with question wording and interviewer training. These studies can further help the U.S. Census Bureau interpret apparent disparities in data that may arise between different operations. In addition, these studies will help us prepare questionnaires for use in the 2020 Census.

1.2. Intended Audience

The intended audience for this paper is Census Bureau staff, as well as anyone interested in the particulars of questionnaire wording, design, and evaluation.

2. Background

2.1. Nonresponse Followup

As a part of the decennial census operations, the Census Bureau delivers census forms to all known housing units in the country. Addresses from which no census return was received (either by mail or phone) are visited by a census interviewer who comes to record their data during a personal-visitor, by special request, a telephone interview. This interview is a part of the NRFU operation. The 2010 NRFU interviews lasted approximately 10 minutes per household, depending upon household size and a small sample of them were audio-taped for this behavior coding project. The 2010 NRFU questionnaire can be seen in Appendix B.

Researchers were interested in using the behavior coding method to evaluate how well the NRFU questions performed in the 2010 Census. Essentially, NRFU contains questions from the mailed out or delivered self-administered census form. However, question wording in NRFU differs slightly from the self-administered form and interviewer instructions have been added. NRFU is an interviewer-administered personal interview that is relatively short and begins with some household-level questions (i.e., questions relevant to the entire household). It then switches to person-level questions (i.e., questions about each person who lives in the household), and then back to a couple of household-level questions to finish the interview.

As a part of the development of the 2010 NRFU questionnaire, Statistical Research Division (SRD)staff, (now Center for Survey Measurement, or CSM, staff)conducted behavior coding during the 2004 and 2006 Census Tests (Hunter and Landreth, 2005 and Childs et al., 2007-b,

respectively). These behavior coding studies examined interviewer and respondent behavior between iterations of the questionnaire. During the 2004 and 2006 Census Tests, the NRFU interview was conducted via Computer Assisted Personal Interview (CAPI). In 2010, NRFU was conducted via a paper and pencil interview. Because this required significant changes to question wording from the questionnaires that have been previously behavior coded, we conducted a behavior coding study with the 2010 NRFU questionnaire, similar to those conducted in 2004 and 2006. In addition to being able to compare questionnaire performance between the studies, this behavior coding study provides a baseline for the design of the 2020 Census NRFU questions.

Past tests have demonstrated a need for a visual aid to assist the respondent in answering some of the questions in this interview (for further discussion, see Childs, 2008, and Childs et al., 2009). These questions include one that presents the rules for who should be counted in the household according to the Census Bureau and the questions on relationship, origin, and race. During the development of this questionnaire, Census Bureau staff used a flashcard booklet to visually present the additional information for those questions (Childs, 2008). During the 2006 Census Test, SRD testing demonstrated that interviewers did not show respondents the flashcard booklet in the majority of observed cases (Rappaport, Davis, & Allen, 2006). Because it is important to convey this information consistently, the Census Bureau followed SRD's recommendations to change the format of the flashcard booklet from a visual aid (that the interviewer kept) to a handout (that the respondent was allowed to keep). SRD researchers observed, informally, during the 2004 and 2006 Census Tests, that interviewers provided respondents with the mandatory Confidentiality Notice, which conveys legally required information. Thus, the researchers recommended taking advantage of this and creating an information sheet that contained the Confidentiality Notice as well as the key information presented in the former flashcard booklet. In this report, we have some peripheral data on the use of the Information Sheet in the 2010 Census. See Appendix C for the Information Sheet used in the 2010 Census.

2.2. Update Enumerate

In certain parts of the country that are either very rural or have a high seasonal occupancy, the Census Bureau conducts a single operation to deliver census forms and enumerate the population, rather than mailing out census forms and then recontacting the households that do not respond for a personal visit interview. This operation is called Update Enumerate, or UE¹. The UE operation uses the same questionnaire that NRFU uses. Though this evaluation was aimed at evaluating the NRFU questionnaire, a small sample of interviews from the UE population (from an American Indian reservation) were obtained and coded as well.

2.3. Behavior Coding

The behavior coding method is used in survey research to analyze the interactions between interviewers and respondents during the administration of survey questions (Cannell, Fowler, and Marquis, 1968). The method involves the systematic application of codes to behaviors (in this

¹ Special operations are conducted in very rural areas and in remote parts of Alaska, these are referred to as Rural Update Enumerate and Remote Alaska, respectively. These operations also use the same questionnaire, but were not examined in this study.

case, verbal behaviors) that interviewers and respondents display during the question/answer process and is often used to identify problematic questions (Oksenberg, Cannell, and Kalton, 1991; Sykes and Morton-Williams, 1987).

Behavior coding is a useful method for gathering information about the quality of the survey questionnaire and the data it collects. If questions and response options are worded and structured in ways that respondents can easily understand and answer, then confidence grows regarding the ability of the survey questionnaire to meet its intended measurement objectives. In an ideal interaction between an interviewer and a respondent, the interviewer asks the question exactly as worded and the respondent immediately provides an answer that is easily classified into one of the existing response categories. When the interaction deviates from this ideal, we begin to suspect there may be problems with the question and/or response options that may be causing comprehension or response difficulties. These difficulties could lead to measurement error. The application and analysis of behavior codes for these types of interactions allow researchers to pinpoint where such issues are occurring in the survey questionnaire (Fowler and Cannell, 1996).

A framework of behavior codes is designed to account for and capture instances of ideal and non-ideal interactions and to indicate particular types of problems that can occur (Fowler and Cannell, 1996). Codes assigned to interviewer behavior illustrate whether questions were asked exactly as worded; when they are not, this may indicate that questions are awkwardly worded (Fowler and Cannell, 1996) or overly complex. In addition, skipping questions that should be asked might indicate that interviewers judge the information to be redundant or the question to be sensitive. Codes assigned to respondent behavior document whether the answer met the measurement objective as well as when the response was more complicated. For instance, when terms are unclear, respondents may ask for clarification (Fowler and Cannell, 1996) or when a question is lengthy or complex, respondents may ask interviewers to reread all or a portion of the question. Alternatively, respondents may provide an answer that does not answer the question at all. This would be indicative of a cognitive problem experienced by the respondent either comprehending the question or mapping their own situation onto the response categories.

3. Methodology

3.1. Research Question

The research question for this study was: **How well do survey questions perform in interviews?** This question is answered by generating behavior coding data for a small sample of interviews to assess how often the interviewer successfully read the questions exactly as worded and how often the respondent generated a response that could easily be recorded into one of the response categories (i.e., codable) following standard practice (Fowler and Cannell, 1996; Oksenberg, Cannell, and Kalton, 1991; Sykes and Morton-Williams, 1987). At the Census Bureau, we often use a rate of undesirable interviewer or respondent behavior that exceeds a particular threshold (e.g., 15 percent of cases) as an indication of a problem with a particular question (Fowler, 1992; Landreth, Krejsa, and Karl, 2006; Oksenberg, Cannell, and Kalton, 1991). Questions that exceed this threshold of problematic behavior are analyzed in detail to understand what particular problems the interviewers and/or respondents are experiencing. This study seeks to learn whether

the questions are easy to administer and respond to and, if not, what the specific barriers to question administration and response are.

3.2. Methodology

We planned to code the behaviors of a sample of 200 audiotaped, non-proxy, personal-visit, English-language 2010 Census NRFU interviews. We collected audiotaped recordings of interview cases that were already being observed as part of another evaluation, the Comparative Ethnographic Studies of Enumeration Methods and Coverage evaluation. The audiotaping of interviews was conducted by researchers in that study. For more details, see Schwede (2009).

A total of 193 audiotaped interviews were gathered from eight sites across the United States during observations for the Comparative Ethnographic Studies of Enumeration Methods and Coverage evaluation. The sample included interviews from eight racial and/or ethnic communities including American Indian, Alaska Native, Asian, Black, non-Hispanic White, Native Hawaiian and Other Pacific Islander, and Hispanic.² The sample was not intended to be a representative sample, but rather a sample of convenience (see Schwede, 2009 for how the sites were selected and for other findings from the study itself, including information on refusals). In addition, eleven tapes were gathered from the NRFU operation in Puerto Rico solely for this project to examine a small sample of Spanish-language interviews.³ This generated a total of 204 taped interviews for analysis.

Six telephone interviewers from the Census Bureau's Tucson Telephone Center were selected to complete a three-day behavior coding training session provided by the lead researcher. Coders were selected based on their ability to speak both English and Spanish fluently, supervisors' judgment of their reliability as interviewers, and past behavior coding experience. The training was designed and conducted by CSM staff.

Coders were assigned a caseload comprised of approximately 40 randomly-selected interviews, with the exception that each caseload included seven interviews that were coded by every interviewer for the purposes of reliability assessment. Five of these tapes were in English and two were in Spanish. Coders did not know which cases were the production cases and which cases were for reliability.

Behavior coders applied a prescribed framework of behavior codes to interviewer and respondent behaviors by listening to the audiotapes and following the interview's progress by reading along with a blank NRFU questionnaire. By comparing the written document to the interviewers'

² The eighth site was a "generalized" site that represented different racial and ethnic groups within the site.

³ Because there was not a full Spanish-language questionnaire outside of Puerto Rico, a full evaluation of the Spanish translation was not possible for this study. State-side Spanish NRFU interviews are within the scope of another evaluation of enumeration of non-English-speaking households by Pan (2010). In addition to the 11 Puerto Rico Spanish cases, four cases were recorded as mixed language. These were primarily conducted in English, but had some Spanish in parts of the interview as well.

recitation of the questions, coders made assessments about whether and to what extent the interviewers read the questions exactly as worded or made slight changes that did not change the meaning of the question. Coders also made assessments regarding whether or not the respondents' answers to the questions could be easily classified into the existing response categories, i.e., are "codable." In an ideal interaction, the interviewer read the question exactly as worded, and the respondent answered the question with a perfectly clear, codable response. Any deviation from this ideal interaction indicates a possible problem with either question wording or response options.

It should be noted that the coders based their evaluations solely on the information on the audiotapes; they did not have access to the completed forms or the data, so they did not know how interviewers ultimately recorded respondents' answers on the form. Appendix A shows the interviewer and respondent behavior codes used for this project.

Behavior coding can be as complex or as simple as the researcher deems necessary. Coding can be implemented at the first level of interaction only (i.e., when an interviewer first asks the question and the respondent provides feedback before the interviewer speaks again) or several levels of interaction may be analyzed. Typically, when research intends to identify problem questions, coding the first level of interaction is sufficient because major problems are often evident either when the question is first read or during the initial response from a respondent (Burgess and Paton, 1993; Esposito, Rothgeb, and Campanelli, 1994; Oksenberg et al., 1991; Smiley and Keeley, 1997). For this project, we coded the "final outcome" of the interaction as well as the first level of interaction between interviewers and respondents. The final outcome provides information on whether the interviewer and the respondent were ultimately successful in resolving difficulties with the question-and-answer process, if any, before moving on to the next question. This measure uses a similar set of codes to the initial respondent behavior, but also uses information gleaned from the interaction to determine whether or not the respondent has answered the question in a way that is easily categorized into the response categories. This presents another measure of success for each question. Below are two hypothetical examples demonstrating the level of exchanges:

Example 1:

Interviewer (first level): Does someone usually live at this (house/apartment/mobile home), or is this a vacation or seasonal home?

Respondent (first level): What?

I (second level): Do you usually live here?

R (second level and final outcome): Yes.

Example 2:

I (first level): What was Johnnie's age on April 1, 2010?

R (first level): He is 13 now.

I (second level): Was he 13 on April 1?

R (second level): No, he turned 13 last week.

I (third level): So he was 12 on April 1, right?

R (third level and final outcome): Yes, sir.

In addition to entering codes to describe interviewer and respondent behaviors, coders were trained to identify “non-ideal” interactions and instructed to take notes any time that non-ideal interactions occurred throughout the interview. Non-ideal interactions are any interviewer-responder interactions that deviate from an adequate question reading and a perfectly codable response. These notes were used for qualitative analysis by CSM staff to identify potential problems with question wording or response options.⁴ During this qualitative analysis, one researcher made ad hoc categories to classify the types of non-ideal behavior observed and coded all of the notes accordingly. A second researcher performed a quality check on this coding. Discrepancies were resolved by the primary researcher.

The framework of behavior codes that were used for this project was adapted from Oksenberg, Cannell, and Kalton (1991).

3.3. Inter-coder Reliability

To assess reliability for the behavior coding results in general, we must determine whether the coders were sufficiently trained to apply the same codes to the same observable behaviors. The bilingual coders independently coded the same seven interviews, five in English and two in Spanish, and agreement statistics were generated with the resulting data. For this project, inter-coder reliability was assessed using Fleiss’ kappa statistic. The Fleiss’ kappa provides a conservative measure of agreement among two or more coders in their application of the behavior codes, because it accounts for the possibility of agreement by chance (Fleiss, 1981). While there is no universally accepted method of evaluating a kappa statistic, according to Landis and Koch (1977), kappa scores greater than 0.81 indicate an almost perfect level of agreement across coders, 0.61 to 0.80 indicate substantial level of agreement, scores ranging from 0.41 to 0.60 indicate a moderate level of agreement, scores from 0.21-0.40 indicate fair agreement, and scores below 0.20 represent slight to poor agreement.

We focused the reliability analysis on “interviewer behavior” and “first respondent behavior,” because these are the key variables analyzed in this report. Table 1 displays individual kappa scores aggregated by language. Kappa scores for the English-language interviews ranged from 0.51 to 0.67. Kappa scores for the Spanish-language interviews ranged from 0.38 to 0.53. These scores reflect generally a moderate level of agreement.

Table 1. Behavior Coders’ Kappa Scores by Language

Interview Language	Interviewer Behavior	First Respondent Behavior
English	0.67	0.51
Spanish	0.53	0.38

As the qualitative analysis was conducted, notes that indicated that the coder had miscoded a particular interaction were recoded accordingly. This happened more frequently for respondent

⁴ A special thanks goes to Katie Drom for assisting with the qualitative analysis.

behavior than interviewer behavior, as one might expect, given the poorer reliability scores for coding respondent behavior.

Keeping in mind that there were only 11 Spanish cases in this study, the Spanish kappa statistic is presented here is not critical to this study. Nevertheless, it is presented here in the interest of demonstrating a continuing tradition of evidence that behavior coding in Spanish typically has worse reliability than behavior coding in English, even given the same coders. See Goerman, Childs and Clifton (2008) for more discussion of this particular problem.

4. Limitations

Certain aspects of our research design introduce limitations to this study and necessitate some caution in interpreting and understanding the results. First, audio recording restricts observable behavior to verbal communication only. We were not able to capture the nonverbal behavior and communication that occurs naturally as part of the face-to-face interviewing process. This limitation may be alleviated by data collected and analyzed as a part of the Comparative Ethnographic Studies of Enumeration Methods and Coverage evaluation (Schwede, 2009).

Second, the act of taping an interview may have introduced unknown effects into the interview process. For instance, interviewers may have been more vigilant in reading questions exactly as worded and in administering the survey in the prescribed manner in circumstances when they knew their behavior was being recorded and evaluated. Additionally, the presence of an observer may have had an effect on interviewers' or respondents' behaviors (e.g., respondents may have been less likely to inquire about vague terms or complex questions in the presence of two Census Bureau employees than they would have been in a one-on-one interview). As a result, this might cause reported results to underestimate actual rates of problematic behavior in the field. However, based on past experience in behavior coding face-to-face interviews, we expect to be able to uncover problematic questions, nonetheless.

Aside from a very small sample of Spanish-language interviews, this study will not address interviews conducted in languages other than English. The absence of other-language versions of the NRFU questionnaire within the United States is a limitation because many non-English-language speakers were probably enumerated in the census via NRFU. Without questionnaires in other languages, behavior coding is not an ideal method for evaluation because of the need for behavior coding to follow a standardized script. Without a standardized script, it is more difficult (and less objective) to judge exact readings of questions against major changes to question wording.

Finally, these results are limited in their ability to be generalized. Results are not generalizable to whole-household proxy or telephone interviews, as the behavior coded interviews were only non-proxy, in-person interviews. This sample was not expected to be representative nor completely random and thus may not be suitable for generalization to non-proxy or in-person interviews across the entire United States. Because the data were not collected randomly, statistical tests are not performed on the data.

5. Results

To present the results of the behavior coding, first we present tables containing rates of behavior types by question and describe how to interpret them. We present general findings, looking at overall assessments of the performance of these questions. Finally, we present detailed question-by-question findings and recommendations for each substantive question in the NRFU questionnaire.

5.1. Behavior Coding Results Tables

The aggregate results of the behavior coding for interviewer and respondent behaviors are contained in Tables 2a and 2b. The left half of Table 2a contains interviewer behaviors by question parsed across the six possible types of interviewer behavior. The information in this table accounts for approximately 100 percent of interviewers' behavior (taking into account rounding error). These include:

- Exact or slight changes to question wording (E/S);
- Major change (MC);
- Correct verification (V+);
- Incorrect verification (V-);
- Inaudible or uncodable (I/U); and
- Skip (S).

The right half of Table 2a presents respondent behaviors at the first-level exchange for each question parsed across the seven possible types of respondent behavior. These include:

- Adequate answer (AA);
- Inadequate answer (IA);
- Qualified or Uncertain answer (QA);
- Clarification or Request to re-read question (CL);
- Don't know (DK);
- Refused (R); and
- Inaudible or uncodable (I/U).

Table 2a. Behavior Coding Data for Interviewer and Respondent Behavior

Question ⁵	Interviewer Behavior							Respondent Behavior [*]								Break In
	N ⁶	E/S	MC	V+	V-	I/U	S	N	AA	IA	QA	CL	DK	R	I/U	%
S2	204	9%	61%	1%	0%	3%	26%	150	70%	3%	3%	7%	1%	0%	15%	3%
S3	195	33	44	2	1	1	21	155	52	32	8	1	0	0	8	9
S5	196	26	58	2	1	1	13	171	73	11	4	4	0	0	9	8
1	196	12	83	1	1	2	1	194	72	22	1	3	0	0	3	3
Relationship Person 2	142	28	37	16	10	1	8	131	61	30	2	2	0	0	6	3
Relationship Person 3-5	191	33	21	13	4	4	27	145	60	31	1	1	0	0	8	7
Sex Person 1	193	20	12	36	4	1	26	140	57	7	0	3	0	0	33	0
Sex Person 2-5	302	22	13	27	1	3	35	202	71	5	0	2	0	0	24	1
Age Person 1	194	19	78	0	0	1	2	192	34	52	4	3	5	2	2	2
Age Person 2-5	322	51	33	0	2	4	10	301	37	53	5	0	4	0	1	1
Hispanic Person 1	193	44	54	0	0	0	3	187	69	18	3	1	0	1	9	10
Hispanic Person 2-5	295	41	2	4	2	2	49	148	75	15	1	1	0	1	8	7
Race Person 1	192	19	63	5	2	2	10	172	73	11	2	4	2	1	7	14
Race Person 2-5	310	26	4	4	5	1	59	126	78	12	0	0	0	0	9	8
Overcount Person 1	191	45	50	0	0	1	4	184	78	8	3	2	0	1	9	25
Overcount Person 2-5	328	35	16	3	3	1	42	158	73	13	2	1	0	0	11	4
H1	191	31	66	1	0	0	2	186	76	9	3	1	0	0	10	30
H2	192	26	67	0	1	2	5	181	69	17	2	2	1	0	9	20
Summary		37	53	4	1	1	5		71	21	2	3	1	0	4	9
* Respondent behavior excludes questions that were skipped by the interviewer.																

⁵ Questions that were not on the path for non-proxy occupied housing units were out of scope and not behavior coded.

⁶ N refers to the number of coded question administrations. Questions S2 through 1 that were not coded were likely missing due to coder error, and may have been skipped by the interviewer or inaudible. For the remaining questions, the number of administrations depends directly on how many people were in each household. Variation in the number of coded questions likely reflects coder error and may reflect skipped or inaudible administrations. Respondent behavior excludes questions that were skipped by the interviewer and may also reflect missing data due to coder error.

The percent of respondent interruptions (i.e., “break-ins”) to the initial question administration is also provided in Table 2a. These calculations were based on the total number of first-level respondent behaviors for each question. Questions do not have respondent or outcome data if the question was skipped by the interviewer. Break-ins are calculated separately from the seven respondent behaviors mentioned above because we also code the content of the respondent’s utterance when a respondent breaks-in (e.g., the respondent could break in with an answer that may be codable or uncodable or they may interrupt for clarification).

Table 2b contains percentages for the final outcome and contains the same types of behavior included for the first-level respondent behaviors, excluding requests for clarification and/or re-reading of the question, and including an additional code for Problematic Answer (PA).

Table 2b. Behavior Coding Data for Final Outcome

Question	Final Outcome*							
	N ⁷	AA	IA	QA	PA	DK	R	I/U
S2	149	81%	3%	3%	2%	0%	0%	12%
S3	154	65	20	7	0	0	0	8
S5	167	86	6	3	0	0	0	5
1	189	96	2	1	0	0	0	1
Relationship Person 2	131	85	8	1	0	0	0	7
Relationship Person 3-5	145	81	7	4	0	0	0	8
Sex Person 1	139	63	6	1	0	0	0	30
Sex Person 2-5	205	73	3	0	0	0	0	23
Age Person 1	194	75	10	9	1	2	2	2
Age Person 2-5	301	67	17	10	0	4	0	2
Hispanic Person 1	184	82	9	2	1	0	1	6
Hispanic Person 2-5	151	79	11	3	0	0	1	6
Race Person 1	171	81	5	2	1	1	1	8
Race Person 2-5	128	75	14	1	0	0	0	9
Overcount Person 1	179	83	4	2	1	0	1	9
Overcount Person 2-5	150	80	4	4	1	0	0	11
H1	187	87	3	1	0	0	0	9
H2	179	80	7	3	1	1	0	8
Summary		79	8	4	.4	.6	.4	9
* Respondent behavior excludes questions that were skipped by the interviewer.								

These tables represent 204 households (containing a little over 500 people in total) interviewed for NRFU or UE⁸. The first four questions (S2, S3, S5 and 1) are household-level questions and are

⁷ See note on Table 2a.

⁸ The number of data points (N) for each question is presented next to the question name and often sums to less than 204 or 500 due to missing coder data. In addition, some coders may have failed to code a question in certain instances (including proxy cases that were mistakenly included in the

asked only once of the respondent. The next six questions are person-level questions. Data for these questions are gathered from the respondent for every member of the household with the exception of the relationship question, which is collected for Person 2 and higher. The final two questions are also household-level questions and asked once per household.

In analyzing behavior coding data, the standard practice for identifying flawed survey questions is to flag questions for which non-ideal interviewer and respondent behaviors exceed 15 percent for any behavior type (e.g., major change or inadequate answer). Though this is a somewhat arbitrary cut-off point, this level of non-ideal behavior suggests that a question has a “high level” of a problem that merits some attention (Oksenberg et. al, 1991; Fowler, 1992). This was the standard for analysis of problematic behavior in this study.

5.2 General Findings

5.2.1 Interviewer Behavior

The interviewer behavior results in this study are quite striking: all questions except for the sex question exceeded the 15 percent threshold for major changes made by interviewers to the question wording, at least for the first time it was read (see Table 2a). Interviewers altered wording to the extent that question meaning could have been interpreted differently than intended up to 83percent of the time (for the question that asked for household roster, question 1). In fact, on average, ideal question-asking behavior across all of the questions that we analyzed was only 37percent. This demonstrates that for most of the NRFU interviews, the interviewers in this study did not achieve standardized question reading at satisfactory levels. Particular issues related to each question are discussed in greater detail in the question-level presentation of results.

5.2.2 Respondent Behavior

In terms of respondent behavior, the results indicate quite a variation in adequate, or easily codable, answers on the first exchange, ranging from 34 percent of the time (for the age and date of birth question, Age Person 1, which required both data points to be adequate) to 78 percent of the time (for the overcount question, Overcount Person 1). On average, adequate respondent behavior occurred on the first exchange 71 percent of the time. Particular issues related to each question are discussed in greater detail in the question-level presentation of results.

Respondent break-ins, that is, when the respondent interrupts the interviewer during the question reading, occurred at an average of nine percent of the time across questions. It was most prevalent for the questions on coverage and ownership (at rates of 25 percent for overcount, Overcount Person 1, 30 percent for undercount, H1, and 20 percent for ownership, H2), which are, notably, among the longest questions and appear at the end of the interview.

dataset or when an interviewer asked a person-level question as a household level question), causing missing data. These instances were not corrected for the analysis. Inconsistency in how these types of issues were coded would have been accounted for in the reliability analysis.

5.2.3 Final Outcome

Final outcome, defined as the resolution between interviewer and respondent discussions, was much improved over initial respondent behavior. Adequate or codable answers were achieved in the end in 79 percent of all cases on average. These ranged from a low of 63 percent for the sex question, Sex Person 1, (which often resulted in an inaudible response) to 96 percent for the question that asked the respondent to list names of household members, question 1. Note that these numbers have the potential to be misleading. In many cases, the respondent may have answered the sex question or confirmed a verification in a way that was inaudible (e.g., a nod of the head), lowering the number of adequate answers. Additionally, the question that gathered the household roster was nearly always successful in gathering names, but these data do not show the quality of the roster that was gathered.

5.2.4 Information Sheet Use

Though explicit data on Information Sheet use were not obtained for this study on the whole, we do have some indications of when the Information Sheet was referred to on a question-by-question basis. The question gathering a household count, the relationship question, the Hispanic origin question, and the race question all had visual aids present on the Information Sheet – these can be specifically seen in Appendix C. While we do not have data on the use, or lack of use of the Information Sheet in NRFU, we do have data on whether or not the interviewer referred to each list. Table 3 shows the proportion of the time, for each of these questions, that the appropriate list was **not** mentioned or referred to. Since this could happen across different types of interviewer behavior, the table is disaggregated accordingly and then a total can be seen in the right column.

Table 3. Percent of Cases in Which Enumerator Omitted Reference to Information Sheet by Question and Type of Behavior

	Type of Interviewer Behavior*			Total
	MC	V+ or V-	Omitted Question	
List A: Residence Instructions	19%	3%	13%	35%
List B: Relationship	32%	19%	8%	59%
List C: Hispanic Origin	19%	0%	3%	22%
List D: Race	14%	4%	10%	28%

*Not all major changes or verifications omitted the reference to the list. This is the subset of all major changes and verifications that omitted the reference to the list.

As you can see in Table 3, the relationship question had the poorest use of the list, with interviewers failing to reference the list in 59 percent of all cases observed in this study. The residence instructions list was not referred to in 35 percent of observed cases. The Hispanic origin list was not referred to in 22 percent of observed cases, and the race list was not referred to in 28 percent of such cases.

In the 2006 Census Test, there was an observational study that examined flashcard use. It found the following rates of use by question: Residence Instructions – 25 percent, Relationship flashcard – 28 percent, and Ancestry – 37 percent (Rappaport, Davis and Allen, 2006). Alternatively, to make the comparison more easily observable, the flashcards were NOT used at the following rates: Residence Instructions – 75 percent, Relationship flashcard – 72 percent, and Ancestry – 63 percent (which compares roughly to the 35 percent, 59 percent, and 22/28 percent (for race and Hispanic origin) listed in Table 3).

The changes in the visual aid and administration procedures from the 2006 Census Test Flashcard Booklet to the Information Sheet were aimed at increasing use and they appear to have been effective. The 2006 Flashcard Booklet was a bound booklet that the interviewer was supposed to show respondents at appropriate times and then take back for use in the next interview. Because of the observed poor rate of use of this booklet, and because cognitive testing has showed that these visual aids help respondents answer in ways consistent with the mail form and other visual modes, the format of the flashcards was modified for 2010 to be on a single page “handout” that the respondent could keep. Assuming that every time the interviewer referred to the list, the respondent had the list in their hand, the Information Sheet was more successful than the 2006 Flashcard Booklet. For each question, use of the visual aid seems to have increased between the 2006 and 2010 data.

In addition to the behavior coding data itself, during data collection of the Spanish-language tapes in Puerto Rico, the researcher conducted a small-scale observational study on Information Sheet use in Puerto Rico. This short report is included in this report as Appendix D. The researcher observed that in all 18 cases the Information Sheet was presented to the respondent. Out of the 16 occupied housing units that he saw interviews for, Table 4 documents how often respondents looked at the Information Sheet for each question with a visual aid.

Table 4. Frequencies of Cases in Which Interviewers in the Puerto Rico Spanish Sample Used the Information Sheet by Question (Total N=16)

List A: Residence Instructions	5
List B: Relationship	4
List C: Hispanic Origin	11
List D: Race	13

Interestingly, from Tables 3 and 4, it seems that both interviewers and respondents may have made more use of the Hispanic origin and Race visual aids than the Residence Instructions and the Relationship list. Though we can only speculate why this might be the case, we suspect that interviewers may use the visual aides more on questions that they find uncomfortable or difficult to administer. This is problematic for the questions where they chose not to use it because we know that while respondents usually have an idea about whom they consider to be household members, their ideas do not always match with Census residence instructions (Gerber, Wellens, and Keeley, 1996). Without seeing the Residence Instructions list, respondents may not be able to accurately report who lived there in accordance with Census rules. Additionally, we suspect that

respondents are more likely to give codeable responses to the relationship question when viewing the response options on the Information Sheet. We expect failure to use this sheet would deteriorate data quality to this question.

5.3 Question-Level Analysis

In this section, we provide a question-by-question analysis of each question in a non-proxy personal visit NRFU interview. Where relevant, we compare these findings to those from the 2004 and 2006 Census Tests.

5.3.1 Household-Level Initial Questions

It is important to note that with the first set of household-level questions, the interviewers would need to modify the question wording if they are talking to a non-household member. Though we intended only to sample and assess nonproxy interviews, there were a few proxy interviews recorded and these necessitated some changes to the question wording as written.

S2: Live Here

I'm here to complete a Census questionnaire for this address. It should take about 10 minutes. (Hand respondent an Information Sheet.) The first part explains that your answers are confidential. I'll refer to the other parts later. Did you or anyone in your household live or stay here on April 1, 2010?

The introduction to this question describes the Information Sheet that the respondent should receive at this point in the interview. The Information Sheet contains the legally required confidentiality notice as well as “lists” for the respondent to refer to when generating a household count, reporting relationships, reporting Hispanic origin, and reporting race.

The question is looking for the appropriate person to complete the interview – the respondent should either have lived at the unit on Census Day (April 1, 2010) or be living with someone who did.

Interviewer Behavior

This question was the very first one taped and coded. In about a quarter of the cases, this question appeared to be skipped on the tape. However, we do not know if the question was asked prior to the tape being started. Since this question conveys multiple concepts, it is possible that the interviewer read some of it prior to starting the tape, increasing the percentage of instances of major change in question wording. It is difficult to initiate taping of the interview concurrently with the start of the interview, especially when using a separate device for taping than what is used for data collection. In addition, the person who answered the door may not have been an appropriate respondent, so some additional exchanges may have taken place prior to the start of the tape recording. With those caveats, the question appears to have been read with a major change to question wording in about 61 percent of cases (see Table 2a).

Of the major changes, in 67 percent of the cases, the introduction sentences were omitted or not

captured on tape and in another 23 percent of cases, they were reworded (see Table 5). In many of the rewording cases, the interviewer focused on the confidentiality of the census, and did not mention the 10 minute time estimate. A very small percentage (7 percent) of these cases omitted the question text, but 40 percent omitted the word “stay,” and an additional nine percent omitted the word “live.” In about 30 percent of cases, the concept of “other people” was omitted from the question. Finally, ten percent omitted the reference date of April 1st and 44 percent omitted the year. These problems are not mutually exclusive. Approximately 60 percent of the major change cases had two or more problems.

Table 5. Percent of All Major Changes to Question Wording for S2 by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Change</u>
1. Omitted the introduction	67
2. Reworded the introduction	23
3. Omitted the question text	7
4. Omitted “stay”	40
5. Omitted “live”	9
6. Omitted concept of other people	29
7. Omitted April 1	10
8. Omitted 2010	44

These problems range from minor (e.g., rewording the introduction sentences) to major (e.g., omitting the concepts of “live,” “stay,” and the reference date). We will focus on the major problems. This question uses both terms “live” and “stay” for a particular reason. Past studies have shown that if you only include the word “live” in this question, you may fail to capture people who only consider themselves staying at the place until they have another place to live. This can apply to an individual or to an entire household. Omitting the word “stay” could create the problem of getting a false “no” to this question and ending the interview prematurely.

This question is the first time that the reference date is introduced in this questionnaire. This is a key concept in this questionnaire because it references a date that is always at least a month in the past. The NRFU operation began in May and lasted through July of 2010. Because this is a time when many people could have moved, and living situations may not be the same as they were on April 1, it is key to introduce the reference date early and often. Consequences of not emphasizing the reference date are recording peoples’ census day residence incorrectly and potentially duplicating them if they had been enumerated at their previous residence, where they really were on April 1.

Respondent Behavior

Respondent behavior to this question was not problematic. It is a yes/no question, so presumably it was easy to answer regardless of how the interviewer asked it. The most obvious issue in this

area was a relatively high rate of inaudible responses (15 percent), but this is not surprising in response to a yes/no question.

Compared to Census Tests

This question appears to have suffered from poorer performance in 2010 than in the 2004 and 2006 Census Tests (26 percent MC and 40 percent MC, respectively); however, in 2010 the introduction was included with this question whereas it was not before. In prior tests, the introduction was not taped or coded, so these administrations are not directly comparable.

S3: Usual Residence

Does someone usually live at this (house/apartment/mobile home), or is this a vacation or seasonal home?

This question asks whether the unit is someone’s usual residence or whether it is only seasonally or occasionally occupied.

Interviewer Behavior

This question also exhibited poor interviewer behavior. In 44 percent of cases, a major change in question wording was made and in an additional 21 percent of cases either the question was omitted by the interviewer, or inadvertently not captured on tape (See Table 2a). Table 6 describes what happened in the major change cases. Of the major change cases, 66 percent of the time interviewers asked only about the person they were talking to (e.g., “did you usually live...”) instead of asking if “someone” usually lived there. This is problematic because the question attempts to gather the unit status – and whether it is a unit that is occupied year-round or whether it is only occupied seasonally by people who may have a usual home elsewhere. A false response to this question could result in the unit not being enumerated correctly (if it is recorded as a seasonal residence and it is not) or duplication, if the people do have a usual home elsewhere and that is not reported here.

Table 6. Percent of All Major Changes to Question Wording for S3 by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Change</u>
1. Asked about “you,” specifically	66
2. Omitted “seasonal”	62
3. Omitted “vacation”	53
4. Reword - “usual/regular home”	25
5. Reword - “regular/usual/permanent residence”	7
6. Reword - “second home”	12

In many of the major change cases, terminology was changed in the question. Just over half of the major change cases omitted the word “vacation” and 62 percent omitted the word “seasonal.”

Interviewers sometimes replaced these with different terms. In 25 percent of major change cases, the interviewer used the term “usual” or “regular” home instead of asking if someone usually lives there. In a very few cases, interviewers used the terms “regular,” “usual,” or “permanent” residence instead of the prescribed phrase. In about 12 percent of major change cases, the interviewer used the term “second home” instead of the alternate wording in the question. Though some of these changes are less problematic than others, the lack of standardization is concerning.

Respondent Behavior

Table 2a also shows that respondents gave an inadequate answer to this question in 32 percent of cases. Table 7 describes the types of behaviors noted, when the response was deemed inadequate. In 31 percent of the inadequate answers, the respondent answered by telling the interviewer who owned the house, who lives in the house, or by saying “it’s my home.” These three alternatives mean slightly different things, but all convey that the respondent did not answer the question in the terms used in the question and may have been answering a slightly different question than the one that was intended. An additional approximately 20 percent of these respondents answered with how long they had lived at the unit, clarification on the unit, that they were moving soon, or that they were there “most of the time.” All of these suggest that the respondent did not understand the question as asking whether the unit was a usual residence or a seasonally occupied unit. Two percent answered with “primary residence” which does convey the answer to the question, though in different terms. All of these responses demonstrate that the question is not worded in a way that respondents are comfortable answering. However, most of these responses do, likely, indicate that it is the respondent’s usual residence.

Table 7. Percent of Inadequate Answers for S3 by Type of Answer

<u>First Response</u>	<u>Percent of All Inadequate Answers</u>
1. Who’s house/Who lives there/“My home”	31
2. How long lived here	13
3. Clarification on unit	4
4. Moving soon	2
5. “Most of the time”	2
6. “Primary Residence”	2
7. “No”	24
8. “Yes”	7

More problematic are those who answered “no” to the question (24 percent of all inadequate answers) – demonstrating that they did not understand the choices offered or how to respond. Similarly, seven percent of these respondents simply answered “yes” without specifying which type of unit it was. These cases required more probing on the part of the interviewer to determine the unit status.

Compared to Census Tests

This question has received considerable revision since the early decade testing. In 2004, the question asked “Is this house/apartment/mobile home the usual residence of someone in your household, or is it a vacation home, seasonal home or held for occasional use?” This question was read with major changes 63 percent of the time and elicited inadequate answers 21 percent of the time (Hunter and Landreth, 2004).

Based on these findings and cognitive test data showing that respondents had difficulty with this question, in 2006 it was revised to “Is this house/apartment/mobile home a vacation home, seasonal home, held for occasional use or does someone usually live here?” (see Childs, 2008 for more background). In the 2006 study, it suffered from major changes 42 percent of the time and inadequate responses in 21 percent of the time.

The 2010 version seems to have had approximately the same level of major changes to question wording, though we cannot be sure if the percentage of omitted questions were really skipped questions or questions that had been asked prior to the beginning of the tape. There seem to be more inadequate answers in the 2010 version, though many of the inadequate responses might reasonably be classified into “someone usually lives there.” For example, if someone responds to this question that it is “my home,” they are probably implying that it is the place they usually live.

S5: Household Count

We need to count people where they live and sleep most of the time. Please look at list A. It contains examples of people who should and should not be counted at this place. Based on these examples, how many people were living or staying in this (house/apartment/mobile home) on April 1, 2010?

List A	
WHO TO COUNT ON APRIL 1st	
We need to count people where they live and sleep most of the time.	
Do NOT include:	Do include:
<ul style="list-style-type: none">• College students who live away from this address most of the year• Armed Forces personnel who live away• People in a nursing home, mental hospital, etc. on April 1, 2010• People in jail, prison, detention facility, etc. on April 1, 2010	<ul style="list-style-type: none">• Babies and children living here, including foster children• Roommates• Boarders• People staying here on April 1, 2010 who have no permanent place to live

The goal of this question is for the respondent to read the instructions on who to count in list A of the Information Sheet and to provide the interviewer with the number of residents in the household. This question was revised from past Census Tests to include a direct reference to the Information Sheet to improve the consistent use of this visual aid.

Interviewer Behavior

This question was read with a major change in 58 percent of the cases in this study. Table 8 describes the types of major changes that interviewers often made to this question. Of these, 63 percent omitted the first sentence, which states the residence rule for the census. In an additional 13 percent of these cases, the interviewer omitted parts of and reworded the first sentence, but conveyed the basic meaning, almost always using the key terms “live” and “sleep.”

In half of the major change cases, the interviewer omitted the reference to list A. This is problematic because these respondents may not have been informed of the very particular rules that the Census Bureau wants them to use in listing residents of the unit. An additional 46 percent of the major change cases had a rewording of the instruction to look at list A. This is not as problematic, however, since the respondent was instructed, in some way or another, to look at the list for further information and usually involved a very minor rewording asking the respondent in one way, or another, to look at List A and then answer the question. In many cases, this rewording involved combining the second and third sentence into a single sentence. For example, “so if you look at List A on that form, it contains examples of who you should and shouldn’t count...”

Interestingly, in most of the cases where the List A reference was omitted, the first sentence of this question was also omitted. These cases are particularly problematic because none of the Census residence instructions are presented to respondents in these cases. Additionally, about half of these cases also omit the reference dates, changing the question quite a bit, for example “How many people live here?” or “How many people are in this household?”

Table 8. Percent of All Major Changes to Question Wording for S5 by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Change</u>
1. Omitted 1 st sentence	63
2. Reworded 1 st sentence	13
3. Omitted List A reference	50
4. Reworded List A reference	46
5. Omitted question text	17
6. Omitted reference date	43
7. Omitted “living”	32
8. Omitted “staying”	57

In 17 percent of these cases, the interviewer did not ask the question that followed the introductory sentences, either because they were interrupted with an answer already, or they simply referred the respondent to the list and waited for an answer.

In an additional 43 percent of these cases, the interviewer omitted the reference date. This could be a critical error because if the reference date had not been mentioned in the interview, people who moved around the time of the census could have been counted in the wrong place.

As mentioned before, two critical concepts are present in the question text – both terms “living” and “staying” are used because together they have been shown to convey the concept of usual residence better than either word separately. In 32 percent of the major change cases, the word “living” was omitted and in 57 percent of these cases, the word “staying” was omitted (in some cases both words were omitted by simply asking how many people were there are at the address). This is problematic because in either situation, an important concept was not included in the question.

This question and List A feature alternate wording to convey the concept of usual residence. They both use phrases “live and sleep” and “living and staying,” on purpose. Past testing has shown that all three words (live, sleep, and stay) convey important parts of the Census concept of usual residence (see Childs, et al., 2009). For some respondents, they are seen as synonyms, but for others, they carry important distinctions. Interestingly, and perhaps unexpectedly, the permanence associated with any of these words may differ amongst respondents. Because of this, all three terms are used in the question and on the card to convey the complexity of the meaning of usual residence.

Respondent Behavior

Respondent behavior was not problematic to this question. There were small percentages of inadequate answers (11 percent), qualified answers (4 percent) and requests for clarification (4 percent), but none of these exceeded the 15 percent threshold for problematic behavior. This is not a measure of the quality of the respondent’s response, however, and only reflects that they were able to easily provide an answer – not that the answer was necessarily accurate.

Compared to Census Tests

This question did not include a reference to the flashcard in the 2004 Census Test, nor did it include the first sentence in the current question, so those results are not directly comparable.

In 2006, the question text included more information on who to count, but again, did not directly reference the flashcard. This question was administered with a major change in 45 percent of cases and exhibited similar problems to the current question administration.

Q1: Household List

Let’s make a list of all those people. Please start with the name of an owner or renter who was living here on April 1. Otherwise start with any adult living here.

At this question, the respondent should list all of the people living at the unit on April 1.

Interviewer Behavior

This question had the least scripted interviewer behavior in this study. In 83 percent of cases, interviewers reworded the question. Table 9 shows how the interviewers changed the question. In 71 percent of these cases, the interviewer omitted the first sentence. This, in itself, is not a critical error, as long as the interviewer lists all the people counted in the previous question. The high rate suggests that interviewers did not think it was necessary to make this statement.

In 84 percent of major change cases, interviewers omitted the date. We consider this a critical error. Because these interviews happen one to three months after Census Day, reminding the respondent of the reference date is critical to obtaining a Census Day roster (as opposed to a current day roster, if they differ). Without any other information, we cannot assess whether respondents gave a Census Day roster or a current day roster, or if they differed.

Table 9. Percent of All Major Changes to Question Wording for Q1 by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Change</u>
1. Omitted 1 st sentence	71
2. Omitted last sentence	95
3. Omitted owner/renter reference	70
a. Start with respondent	57
b. Start with “head of household”	7
c. Does not say who to start with	6
4. Omitted reference date	84

Other critical errors include the 70 percent of the major change cases where interviewers did not tell the respondent to start with the owner or the renter. In 57 percent of the major change cases, the interviewer told the respondent to start with themselves. In a smaller number of cases, approximately seven percent, interviewers requested that the respondent start with the “head of household” – a term that the Census Bureau purposefully does not use because of gender-bias connotations. In an additional six percent of cases, the interviewer did not tell the respondent who to start with. All of these cases could yield problematic data, because the Census Bureau reports data on family and non-family households based on household member’s relationship to the first person listed. In addition, because respondents in the mail mode were instructed to start with an owner or renter, failure to provide this instruction could create a mode difference in family data coming out of NRFU.

In 95 percent of major change cases, the interviewer did not read the very last sentence. We do not consider this a critical error because that sentence is only necessary information if an owner or renter does not live in the unit, which is a rather rare occurrence. The high rate of omissions of this statement and the low prevalence of this situation suggests that this sentence could be an interviewer note instead of required reading.

Respondent Behavior

There is a slightly elevated level of inadequate response provided by respondents to this question (22 percent). Most of these cases involved the respondent providing first name only. Interviewers probed for last name and were successful in most cases, generating an adequate response (complete first and last names) in 85 percent of cases. Further research should be conducted on requesting “full names” to eliminate the need for this back-and-forth exchange.

Compared to Census Tests

This question was administered with major changes in 61 percent of cases in the 2004 Census Test and 64 percent of cases in the 2006 Census Test (Hunter and Landreth, 2005, Childs et al, 2007-b, respectively). Interestingly, the last sentence in the current study was not part of the question text in the 2004 or 2006 Census Tests and this may account for most of the difference in

major change behavior. In both those studies interviewers most often omitted or changed the instructions for whom to start with. The 2006 Census Test also exhibited problems with interviewers not reading the date in the question, which was attributed to the redundancy of having the date in several questions. However, after observing interviewers omit the date in several places, we are concerned about the respondent not understanding the importance of providing the residents as of April 1 and believe that redundancy may be necessary.

5.3.2 Person-Level Questions

The next series of questions are asked for each person in the household. Coders were instructed to code interactions for up to five people in each household. These questions were asked in a topic-based sequence. In many cases, the interviewer was allowed to shorten the question after they had read it in full for the first person in the household. For this reason, analysis focuses primarily on how the question was administered the first time.

Q2: Relationship

**Please look at list B on the Information Sheet. How is (Person 2) related to (Person 1)?
How is (Person 3) related to (Person 1)?**

List B
<p style="text-align: center;">RELATIONSHIP</p> <ul style="list-style-type: none"> <input type="checkbox"/> Husband or wife <input type="checkbox"/> Biological son or daughter <input type="checkbox"/> Adopted son or daughter <input type="checkbox"/> Stepson or stepdaughter <input type="checkbox"/> Brother or sister <input type="checkbox"/> Father or mother <input type="checkbox"/> Grandchild <input type="checkbox"/> Parent-in-law <input type="checkbox"/> Son-in-law or daughter-in-law <input type="checkbox"/> Other relative <input type="checkbox"/> Roomer or boarder <input type="checkbox"/> Housemate or roommate <input type="checkbox"/> Unmarried partner <input type="checkbox"/> Other nonrelative

In this question, the interviewer should refer the respondent to the Information Sheet and then ask how each person is related to the first person that was listed. The interviewer should fill the appropriate names in the question and not say “Person 1” or “Person 2.” After the interviewer reads the full question for the first time, the interviewer can shorten the question for later people, but still needs to read both names in the question so that the respondent is certain who the relationships are between.

Interviewer Behavior

This question had a major change, in 37 percent of the cases. Table 10 shows the interviewers’ behavior, when they did not administer the question as expected. In 87 percent of these cases, the interviewer did not refer to List B, which displays all of the acceptable responses. Again, we do not have direct evidence of the usage of the Information Sheet, but failing to reference it in the question is problematic because respondents may not know they can look at the sheet for more information, even if they have it in front of them (there are two sides to

the sheet and this list is on the reverse). We know from past research that when respondents refer to the list of relationship categories, they are better able to respond to the relationship question in a way that meets the question objectives (Childs, et al., 2007-a).

Table 10. Percent of all Major Changes to Question Wording for First Reading of Relationship Question by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Change</u>
1. Omitted List B reference	87
2. Did not reference both names in question	19
3. Reordered question	9
4. Asked about everyone’s relationship at once	4

In 19 percent of the major change cases for the first administration and in almost all of the major change cases for the remaining administrations (95 percent, data not shown), both names were not provided in the question. This is problematic because past testing has shown that respondents (and interviewers) sometimes mistakenly assign relationships to the wrong person. It is a cognitively more difficult task to describe relationships among other people than relationships to oneself (see discussion in Childs, 2008). In situations where relationships are being asked of someone else, it is necessary to repeat the names so that it is clear about whom each relationship is being requested.

Even when the respondent is one of the people in question, the direction of the relationship is important and from past research we know that relationships are sometimes reported as the inverse of what is being requested (e.g., the respondent reports “father” instead of “son”; see discussion in Childs, 2008). Because direction is important, not reading the names can inadvertently cause respondents to report the opposite relationships. In an additional nine percent of major change cases, the interviewer reworded the question so as to make reporting the correct direction of the relationship more difficult for the respondent. In a very small number of cases, the interviewers asked the respondents to report all of the relationships in one question. This could also cause difficulty with the directional reporting.

Respondent Behavior

Respondents also exhibited some difficulty with this question. In approximately 30 percent of administrations, respondents gave an inadequate answer. Table 11 shows some of these inadequate answers. In 56 percent of these cases, the respondent answered that the person was a son or daughter, without specifying whether the child was a biological, adopted, or step-child. In most cases, the interviewer probed and found out this information. However, in a problematic few (n=3) cases, the interviewer did not probe, and may have made an assumption and reported accordingly.

In about 12 percent of inadequate answer cases, the respondent answered with boyfriend, girlfriend, fiancé, or significant other – all categories that the Census Bureau includes in “unmarried partner.” The important finding here is that these respondents chose words other than

unmarried partner to describe their relationship. This is consistent with much past research on this topic (Hunter, 2005).

In a few other cases, respondents also reported terms not found on the census form – spouse/married (seven percent), nephew, stepfather, cousin, great grandchild, and friend (together accounted for nine percent). Small percentages (four percent) described a complex relationship married/non-married situation.⁹ An additional four percent provided information suggesting that a relationship inversion was possible.¹⁰ You can see from the outcome behavior that most of these issues were cleared up by the end of the interaction.

Table 11. Percent of all Inadequate Answers for Relationship Question by Answer

<u>First Response</u>	<u>Percent of All Inadequate Answers</u>
1. Daughter/son	56
2. Boyfriend/girlfriend/fiancé/significant other	12
3. Spouse/married	7
4. Nephew/stepfather/cousin/great grandchild	7
5. Complex married/not married	4
6. Relationship inversion possible	4
7. Friend	2
8. Other responses	6

Compared to Census Tests

In the 2004 Census Test, the relationship question used a reference list, but neither mentioned the list of relationship categories directly, nor required the respondent to differentiate between biological, adopted, and stepchildren. The question was asked with a major change in approximately 33 percent of cases and inadequate answers were given in 17 percent of cases. Both are slightly lower than in the current study, but most of the problems experienced in the current study (failing to mention the reference card and to differentiate biological relationship to children) were not required in the 2004 Census Test.

⁹ In one Spanish case, the respondent stated that Person 2 was his wife (“esposa”). The interviewer clarified whether it was his legal wife or unmarried partner (“es esposa legal o pareja no casada”) and the respondent stated unmarried partner (“pareja no casada”). In the second case, the respondent stated that they had been together for over 15 years, but the interviewer never clarified whether or not they were married. In the third case, the interviewer assumed that Person 1 and Person 2 were married. The respondent said that they were not and then the interviewer asked if they were housemate/roommate and the respondent agreed.

¹⁰ In all three of these cases, the inversion would have been a parent-child inversion. Two of them seem to have been clarified by the interviewer, based on the coder notes, but the third may or may not have been clarified.

In the 2006 Census Test, the question was broken into two parts, which was found through behavior coding and cognitive testing to be problematic. Because the questions were not equivalent to those fielded here, they will not be discussed.

Q3: Sex

Is (Person 1) male or female?

How about (Person 2)? (Is (Person 2) male or female?)

Sex should be asked or verified of all people. For this question, coders were instructed that it was acceptable to verify based on name and/or relationship whether or not the respondent has explicitly said the person's sex if the sex is unambiguous from what has been stated. This is the only question where verification without explicitly stating the answer previously is allowed. After the first person, the interviewer can shorten the question to "How about NAME?" We realize that this is a liberal interpretation of correct question asking behavior for this question, but we believe it is appropriate and allows for a fair assessment of interviewer behavior.

Interviewer Behavior

This question was skipped at an unacceptable rate – 26 percent of the time for the first person and 35 percent of time for later people. This was against interviewers' training, which required asking or verifying at a minimum. Most interviewer behavior, when they did not omit the question, was either exact wording (21 percent) or verification (13 percent, which was acceptable for this question).

Respondent Behavior

Respondent behavior was recorded as mostly adequate (65 percent) or inaudible (28 percent). For this question, inaudible is not particularly problematic, given the high rate of verification.

Compared to Census Tests

In the 2004 Census Test, this question was skipped 48 percent of the time and in the 2006 Census Test, it was omitted 11 percent of the time. It is unclear why the rate of omissions of this question differed so much between the studies. Perhaps it is due to simple variance of three very small studies or due to differences in training materials. Rates of verification were similar across studies, and exact reading was best in the 2006 study, at 38 percent, compared to 21 percent in the 2004 study and 21 percent in the 2010 Census Test.

Q4: Age and Date of Birth

What was (Person 1's) age on April 1, 2010? What is (Person 1's) date of birth?

How about (Person 2)? (What was (Person 2's) age on April 1, 2010? What is (Person 2's) date of birth?)

This item is two questions in one. Full date of birth *and* age are required for an adequate answer. Month and day of birth only is an inadequate, or incomplete, answer; similarly if the respondent

only reports age. After the first person, the interviewer can shorten the questions, but must ask the questions of each person.

Interviewer Behavior

Because the interviewer was required to read this question in full for the first administration, we will pay special attention to the first administration. This question was asked with a major change in almost 80 percent of the first administrations (see Table 2a). Table 12 shows interviewer behavior when it was a major change to question wording. In over half of these cases (57 percent) the interviewer did not ask for date of birth (he or she only asked for age). When the interviewer did ask for date of birth, he or she changed the terminology and asked for “birth date” in about 13 percent of cases, and “birthday” in about six percent. The former is not troubling, but the latter could be problematic, because it does not specifically ask for year of birth, as the other questions imply.

Table 12. Percent of all Major Changes to Question Wording for the First Administration of Age and Date of Birth by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted asking for Date of Birth	57
2. Asked for “birth date”	13
3. Asked for “birthday”	6
4. Omitted asking for Age	25
5. Asked for Age, but not on April 1	26
6. Asked “how old” the person was/is	19
7. Asked about everyone’s age/date of birth at once	6

In about 25 percent of the major change cases, the interviewer did not ask for age. In an additional 26 percent of cases, the interviewer asked for age, but not on April 1st, the reference date for the census. In about 20 percent of cases, the interviewer changed the question to ask “how old” the person was. The latter two instances are problematic because the census needs to capture age as of Census Day, which, as mentioned previously, would have been one to three months prior to interview day. In six percent of the major change cases, the interviewer asked for everyone’s information at the same time.

For later administrations, the interviewer did not need to repeat the question. Most often when the interviewer chose to repeat the question, he or she omitted asking for date of birth (in 75 percent of major change cases for later people, data not shown), and often left off the reference date when asking for age (in 55 percent of major change cases for later people). Other patterns are similar-- occasionally the interviewer asked only for date of birth (13 percent) and sometimes asked “how old” (36 percent) or for “birth date” (2 percent) or “birthday” (8 percent).

Respondent Behavior

Respondents provided inadequate answers to this question about half of the time (approximately 53 percent of the time; see Table 2a). The inadequate answer provided most often was to initially only provide age (in 46 percent of the cases). In 42 percent of inadequate answers, respondents provided only date of birth. These are very likely due to the ways in which the interviewers changed the question to request only a single piece of information.

In a much smaller number of cases, the respondent did not know some or all of the answer (3 percent of the inadequate answers, and an additional 4 percent of the entire responses, data not shown).

Interestingly, a small number of respondents (2 percent of the inadequate answers) exhibited confusion about reporting age as of a date in the past. This is consistent with past research (see Nichols, Childs and Rodriguez, 2008).

Ultimately, adequate answers were achieved in 70 percent of cases and 14 percent of cases remained as inadequate answers (aggregated from Table 2b). In most of these cases, either one piece of data was missing entirely or a partial date of birth was reported.

Compared to Census Tests

Age and date of birth were asked separately in the 2004 and 2006 studies, so results are not directly comparable. They were combined when the questionnaire was switched from CAPI to paper, driven by the need to save space on the paper. However, similar problems were observed in previous tests with leaving off the reference date (Hunter and Landreth, 2005; and Childs, et al., 2007-b) and asking for a “birthday” or “how old” (Childs, et al., 2007-b).

Q5: Hispanic Origin

Please look at list C. Is (Person 1) of Hispanic, Latino, or Spanish origin?

How about (Person 2)? (Is (Person 2) of Hispanic, Latino, or Spanish origin?)

List C

HISPANIC, LATINO, OR SPANISH ORIGIN

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican American, or Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin – *For example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.*

The interviewer should refer the respondent to List C at this question. It should be asked of each household member. If the respondent answers for the whole household, the interviewer should still ask or verify for each person. After the first person, the interviewer can shorten the questions.

Interviewer Behavior

This question was read with a major change in approximately half of the cases (54 percent) for the first administration (see Table 2a). For later administrations, it was read acceptably 41 percent of the time, but completely omitted approximately half of the time (49 percent). This was, by far, the biggest problem for later household members and suggests that interviewers are making assumptions about Hispanic origin that they should not.

For the first administration, the interviewer was required to refer the respondent to List C. Table 13 shows that in about half (49 percent) of the major change cases, the interviewer did not do this. This reference is important, because in past studies, we have noted that sometimes both interviewers and respondents are unclear as to what is classified as “Hispanic” (Childs et al., 2007-b). List C provides some guidance on this, as well as the same visual stimulus that is present in the self-administered form. Without this, respondents may answer incorrectly or inconsistently with how they would have responded to the self-administered form, causing a mode difference.

Table 13. Percent of all Major Changes to Question Wording for the First Administration of Hispanic Origin by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted reference to List C	49
2. Asked of whole household	26
3. “Consider yourself”	11
4. “Any” Hispanic origin	11
5. Omitted all three terms	8
6. Omitted “Hispanic”	3
7. Omitted “Latino”	18
8. Omitted “Spanish origin”	26
9. Omitted “origin” but read “Spanish”	16
10. Read countries unprompted	11
11. “What country...”	3

In about a quarter (26 percent) of the major change cases, the interviewer asked the question of the whole household rather than asking it of each person. In some cases, interviewers changed the wording, slightly changing the meaning, to ask if they “consider themselves” to be Hispanic (11 percent) or if they have “any” Hispanic origin (11 percent).

In some cases interviewers omitted one or more of the three terms in the question. In eight percent of major change cases, interviewers omitted all three terms (only referencing the list). In three percent, they omitted the word “Hispanic.” In 18 percent, they omitted the word “Latino.” In 26 percent they omitted the term “Spanish origin” and in 16 percent they read “Spanish” but omitted the term “origin.” We know from past research that people interpret these three terms differently and that sometimes people may identify as one of them, but not the other two (see a summary in Childs, 2008). Failure to use all three terms creates a different stimulus for this question than the one that is on the self-administered form, especially when the List C is not used.

In 11 percent of these cases, the interviewer spontaneously read some of the examples and in three percent of these cases the interviewer asked what country they were from. In all of these instances, the interviewers are changing the stimulus to this question, which could create mode differences between the interviewer and self-administrations of these questions.

Respondent Behavior

Across all household members, inadequate answers were given approximately 16 percent of the time. When inadequate answers were given, they were primarily reports of race (in 67 percent of inadequate answer cases). In approximately 13 percent of these cases, the respondent answered with “Hispanic,” “Latino,” or, simply “yes” without providing detailed origin. These required more probing to get a codable answer.

In seven percent of cases, the respondent reported “Spanish” but that they were not of Spanish origin – these are the most problematic cases since “Spanish” descent could have been recorded inaccurately. In a different seven percent of cases, the respondent provided non-Hispanic origins – Portuguese or Italian. Very small numbers of respondents answered with “other” or “American” which may be an indication of discomfort with the question or misunderstanding.

Compared to Census Tests

In 2004, this question was asked differently. It was prefaced by two sentences stating that the interviewer would ask about both Hispanic origin and race and to answer both. This makes it difficult to compare interviewer reading behavior, but similar problems with omitting some of the terms in the question were noted in 2004. Respondent behavior is also difficult to compare because there were explicitly two questions in that study – one to generate a simple yes or no and a second to acquire detailed origin.

The question in the 2006 study did not contain a reference to the flashcard, or information sheet, but the question text was otherwise the same. The rules for question administration also differed in 2006 – requiring the interviewer to repeat the entire question text for each person. This was the source of most of the error in 2006 and was not a requirement in the 2010 study. Comparing the respondent behavior in the 2006 and 2010 studies, it appears that in the 2006 study more of the uncodable answers dealt with citizenship and nationality, while in the 2010 study more of them dealt with race. We attribute these differences to the differences in localities of the study. The 2006 study was conducted in a highly Hispanic area, and the 2010 study involved communities meant to cover many of the large race and ethnic groups across the country.

List D
RACE <i>(Choose one or more races.)</i>
<input type="checkbox"/> White
<input type="checkbox"/> Black, African American, or Negro
<input type="checkbox"/> American Indian or Alaska Native
<input type="checkbox"/> Asian Indian
<input type="checkbox"/> Chinese
<input type="checkbox"/> Filipino
<input type="checkbox"/> Japanese
<input type="checkbox"/> Korean
<input type="checkbox"/> Vietnamese
<input type="checkbox"/> Other Asian – <i>For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.</i>
<input type="checkbox"/> Native Hawaiian
<input type="checkbox"/> Guamanian or Chamorro
<input type="checkbox"/> Samoan
<input type="checkbox"/> Other Pacific Islander – <i>For example, Fijian, Tongan, and so on.</i>
<input type="checkbox"/> Some other race

Q6: Race

Please look at list D and choose one or more races. For this census, Hispanic origin is not a race. What is (Person 1's) race? How about (Person 2)? (What is (Person 2's) race?)

The interviewer should refer the respondent to List D at this question and also should read the statement about Hispanic origin not being a race. This question should be asked of each household member, regardless of how they answered the previous question. If the respondent answers for the whole household, the interviewer should still ask or verify for each person. After the first person, the interviewer can shorten the questions.

Interviewer Behavior

First, we will examine interviewer behavior for the first administration of this question. Table 2a shows that in 63 percent of these cases, the interviewer made a major change to question wording. For the first person, the interviewer should have read the two sentences preceding the question. Table 14 shows that in 30 percent of these cases, the interviewer omitted the reference to the List D. In 53 percent of the major change cases, interviewers dropped the concept of “choosing one or more” races. In 85 percent of these cases, the interviewer dropped the concept of Hispanic origin not being a race. In each of these cases, the interviewer is changing the question stimulus from what is shown on the mail form and could introduce mode differences between those who answered the census by mail and those who answered in NRFU.

Table 14. Percent of all Major Changes to Question Wording for the First Administration of Race by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted reference to List D	30
2. Omitted “one or more” concept	53
3. Omitted Hispanic origin statement	85
4. Omitted question text itself	51
5. Omitted “race”	11
6. “Consider yourself”	11
7. Guessed a race or races	9
8. Read races unprompted	9
9. Asked for whole household	5
10. Which “apply to you”	5
11. “Describe your race”	2

In 51 percent of the major changes, the interviewer read some (or all) of the preceding sentences and then omitted the question – letting those sentences imply the question. In 11 percent of cases, the interviewer omitted the term “race” – perhaps suggesting that they were hesitant to use the word. In another 11 percent of cases, the interviewer rephrased the question in terms of how you “consider yourself.” In nine percent of these cases, the interviewer guessed a race or races, either based on previous information or observation. In another nine percent of cases, the interviewer read some of the races. Smaller percentages of cases included asking for the whole household (5 percent), asking which of the races “apply to you” (5 percent), and asking the respondent to “describe your race” (2 percent).

Over half of the time (59 percent), this question was skipped for later household members without verifying their races. This is particularly problematic because it seems as though interviewers are assuming that everyone in the household is of the same race. When it was asked for later household members, it was most often asked in an acceptable way, either by reading the entire question or shortening it according to how they were taught in training.

Respondent Behavior

Respondent behavior did not reach the 15 percent level of inadequate behavior. Overall, inadequate answers were only present in about 11 percent of cases. When inadequate answers were given, most often the respondent provided a non-listed nationality (e.g., Portuguese, Norwegian, Irish, Scottish, English, Dutch) or a Hispanic origin as their race (e.g., Mexican, Puerto Rican). Another response that occurred in some of the Spanish cases was “trigueña” (22 percent of the 27 inadequate answers). A few respondents (15 percent) responded only with “mixed race” without specifying which races or by asking how you would record mixed race. Only two respondents answered with “American” and one each with “Caucasian,” “none,” and “born in the U.S.”

Compared to Census Tests

Again, these questions differed significantly from what had previously been tested, as well as the populations that had been studied in past behavior coding tests. In past testing, when a computer assisted personal interviewing (CAPI) questionnaire was used, this question text used a branching structure to expose respondents to the race categories. When the paper form was adopted, the focus was on referring respondents to the reference list for exposure to the categories.

Respondent behavior appears to be better in this study than in past studies. In the current study, approximately three quarters of responses were adequate, or easily codable. In the 2004 study, this was 42 percent, and 38 percent in the 2006 study (Hunter and Landreth, 2005; Childs et al., 2007-b, respectively). The problems noted in those studies mirror some of the same problems we see in 2010. Respondents in all studies sometimes provided nationality or Hispanic origin. The improved response in 2010 undoubtedly reflects the different populations studied, but also may reflect the improved use of the List D visual aid to show respondents what types of responses are requested.

Q7: Another Place

Does (Person 1) sometimes live or stay somewhere else for any of these reasons? – In college housing? In the military? At a second or seasonal residence? For child custody? In jail or prison? In a nursing home? For another reason?

How about (Person 2)? (Does (Person 2) sometimes live or stay somewhere else for any of these reasons?)

This question serves as a flag for the Coverage Followup (CFU) operation. If the respondent indicates certain types of situations that may have coverage implications, the case is sent to CFU to clarify the residence status of each person on the roster.

The interviewer must read all response options for the first person. Response options are optional reading for later people. For this question, the interviewer can either read each type of place and pause for an answer or he or she can read all of them together and then wait for an answer. Either approach is considered to be an exact reading.

This question must be asked of each household member. If the respondent answers for the whole household, the interviewer should still ask or verify for each person. After the first person, the interviewer can shorten the questions.

Interviewer Behavior

Because the interviewer was required to read the question in full only for the first administration, the analysis focuses primarily on the first administration. It was read with a major change in 50 percent of cases in this study (see Table 2a). Table 15 shows what types of changes were made. When it was read with a major change, most often some (or all) of the response categories were omitted. Frequency of reading appears to drop off as the list goes on, indicating that interviewers are only reading the first categories and failing to read the later ones. In cases where the interviewer changed the question wording, in 25 percent of cases, they left off the college housing option, in 18 percent of cases, they left off the military option, in 40 percent of cases, seasonal or second home was omitted, in 48 percent of cases child custody was omitted, in 49 percent of cases, jail or prison was omitted, and in 57 percent of cases “for another reason” was omitted. This is obviously problematic in situations where the respondent would have said “yes” to a category that was not mentioned. This is particularly problematic considering that the last two substantive response options – “in a jail or prison” and “in a nursing home” – are different types of places than the earlier options, where respondents may feel that a household member is or was at one of those places for a very short amount of time and may not mention it if not specifically prompted.

Table 15. Percent of All Major Changes to Question Wording for the First Administration of “Another Place” by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted college	25
2. Omitted military	18
3. Omitted seasonal	40
4. Omitted custody	48
5. Omitted jail	49
6. Omitted nursing home	48
7. Omitted “another reason”	57
8. Asked for whole household	46
9. Omitted “sometimes”	26
10. Omitted “live”	28
11. Omitted “stay”	22
12. Focused on only living here	8

Another problem was asking the question one time for the entire household, which occurred in 46 percent of these cases where major changes were made. This is problematic because we know

from past research that sometimes not all household members are considered when the question is asked at a household level (Kerwin, Franklin, Koenig, Nelson, and Strickland, 2004). For example, if the interviewer asks if anyone in the household stayed somewhere else, the respondent may think only of key household members and not realize that they should also be answering for the grandmother that stays there most of the time, but goes to her other children's homes as well.

In fewer cases, interviewers left off key words to the question stem. In 26 percent of cases, interviewers left off the word "sometimes," in 28 percent of cases, the word "live" was omitted and in 22 percent of cases the word "stay" was omitted. In each of these cases, the stimulus was changed, and words that are important in conveying the concept were left off.

A relatively small number of cases (8percent) showed a different type of problem, where the interviewer changed the focus of the question to focus on people who live at the unit for those reasons, rather than living somewhere else for those reasons.

All of these problems could result in underreporting of other places to stay. Since this question serves as a flag for CFU, ultimately, failing to report another place here could miss the opportunity to be included in the CFU universe and could result in counting the person twice or at the wrong place.

After the interviewer read the question in full for the first administration, he or she did not need to read the question again for later people. When they did read the question again, and did so with a major change, the trend followed those mentioned above – very often not reading the response categories (though this was not necessary) and changing the key words in the question stem. However, the most common problem with later administrations was omitting this question all together, which happened in 42 percent of cases.

Respondent Behavior

Respondent behavior for this question was good compared to other questions. Respondents gave a codable answer on the first exchange in about 75 percent of cases (see Table 2a). An additional ten percent of responses were inaudible, likely with respondents shaking their heads "no."

One interesting component of respondent behavior is the high rate of break-ins, at about a quarter of all cases (see Table 2a). Respondents often broke in at the end of the question stem or during the response categories, suggesting that the list may seem too long or unnecessary. Frequent respondent interruption may have impacted the interviewers' behavior in later interviews, causing them to drop response categories all together.

Compared to Census Tests

In 2004, this question was asked, but with only five response options instead of the seven that exist in the 2010 questionnaire. Despite this, interviewer behavior appears to have been worse in the 2004 study, with major changes occurring 66 percent of the time (Hunter and Landreth, 2005). Very similar problems were noted in the coder notes. This question also had the 2004 study's

highest break-in rate, at about 13 percent of cases, which is lower than the current study’s break in rate of 25 percent. This is likely due to the increased number of options in the current study.

The 2006 study had eight response options. The major change rate was only slightly higher than in the current study, at 59 percent (Childs, et al., 2007-b). Similar problems were noted with interviewers omitting some or all of the response options and making the individual question into a household level question.

In both prior studies, like this study, respondents did not have unacceptable rates of inadequate behavior.

5.3.3 Housing-Level Final Questions

The final questions are asked once for the whole household.

H1: Other People

We do not want to miss any people who might have been staying here on April 1. Were there any additional people that you didn’t mention, for example:

- | | | |
|--|------------------------------|-----------------------------|
| Babies? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Foster children? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Any other relatives? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Roommates? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Any other nonrelatives? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| How about anyone else staying here on April 1 who had no permanent place to live? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

This question is another flag for inclusion into the CFU universe. Certain types of situations are sent to CFU to determine whether additional people should have been included on the household roster. Any “yes” responses to this question were followed up by the interviewer asking for the names of the people being referred to.

For this question, the interviewer should read each sub-question and wait for an answer.

Interviewer Behavior

Interviewers changed the question wording to this question in two thirds of cases in this sample (66percent). When they made major changes, often they omitted some or all of the sub-questions, or response categories (see Table 16). There appears to be a linear relationship with these categories – fewer were read the later they appear in the question. The final category, which is important because it includes a group of people believed to be the most often omitted from the census, was not asked about in 57 percent of the major change cases. Interestingly, when the last category was read, in an additional 30 percent of cases, the wording was changed. Interviewers rephrased the question in several different ways, asking about “homeless” people, people “without a home,” or “anyone needing a place to stay.” Some of these capture the essence of the question, but others leave out important concepts, such as the reference date and the concept that they have no other “permanent” place to live. Thus, in 87 percent of the major change cases, this

category was omitted or reworded to not convey the entire concept. Most of the other categories were not reworded, but were often omitted. They were omitted in the following percentages of the major change cases: Babies (17 percent), Foster children (20 percent), Other relatives (27 percent), Roommates (40 percent), and Other nonrelatives (51 percent).

Table 16. Percent of All Major Changes to Question Wording for the Undercount Question by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted babies	17
2. Omitted foster children	20
3. Omitted other relatives	27
4. Omitted roommates	40
5. Omitted other nonrelatives	51
6. Omitted anyone with no permanent place	57
7. Reworded last option	30
8. Omitted first sentence	34
9. Omitted April 1	26
10. Reworded question	82

The stem of the question was also often reworded. In 34 percent of major change cases, the first sentence was omitted. In 26 percent of major change cases, the reference date was omitted. In a majority of major change cases (82 percent), the question itself was reworded, often in minor ways presumably with the interviewer trying to either shorten the question or make it more conversational. Many of these changes most likely did not change the core meaning of the question, but they contributed to a high overall major change rate.

Respondent Behavior

Respondent behavior to this question was adequate in 76 percent of cases. There was a very high break-in rate to this question at 30 percent, which is not surprising given that we know from past research that this can happen if questions are posed to the respondent prior to the end of the official question (Beatty, Cosenza, and Fowler, 2006). Almost all break-ins were respondents answering “no” prior to hearing the entirety of the question. Sometimes the break-ins were so persistent that it caused the interviewer to stop reading the question.

Compared to Census Tests

This question was phrased very differently from the 2004 Census Test, but the results were quite similar, with a 66 percent major change rate. The respondent break-in rate was lower in 2004, but the question was structured differently, so this is not surprising (Hunter and Landreth, 2005).

In 2006, the question text was similar, but it was placed in the beginning of the interview instead of at the end. In the 2006 test, this question would have added people to the roster for the interview, whereas it came at the end of the 2010 Census to serve as a flag for CFU. Nevertheless, problems were very similar in both studies, with a major change rate of 64 percent in 2006 (Childs et al., 2007-b). Interestingly, based on the 2006 data, the question was revised to have shorter response categories (though more of them). The four longer categories in 2006 were divided into six shorter categories in 2010, but it does not seem to have had an impact, positive or negative, on interviewer behavior.

H2: Ownership

Do you or does someone in this household own this (house/apartment/mobile home) with a mortgage or loan, including home equity loans; own it free and clear; rent it; or occupy it without having to pay rent?

The question that asks if the unit is owned with a mortgage, owned free and clear, or rented is the last question in this study.

Interviewer Behavior

The very last question in the questionnaire was read at a very high major change rate of 67 percent (see Table 2a). In the majority of these cases, 77 percent, the interviewer omitted the concept of “someone else” in the household being the owner or renter (see Table 17). One limitation of this classification as a major change is that if the household is a single person household (which the interviewer would have known), it would have been quite reasonable to make this change. This was not built into the script as optional text, nor was it considered in coding, but it is worth noting that with an automated questionnaire, the reference to “someone in this household” could be a fill that is only read in a multi-person household.

Table 17. Percent of All Major Changes to Question Wording for the Home Ownership Question by Type of Change

<u>Interviewer Behavior</u>	<u>Percent of All Major Changes</u>
1. Omitted concept of someone else	77
2. Omitted “home equity loan”	65
3. Omitted occupy without paying rent category	62
4. Only asked “own or rent”	23
5. Omitted “mortgage or loan”	36
6. Omitted “free and clear”	43
7. Omitted rent category	32

More problematic is when the interviewer omitted some, or parts of some, response categories. The next largest problem shown in Table 17 was omitting the phrase “including home equity loans.” This part of the question was included because it is unclear to respondents if they have

paid off their first mortgage, but have a home equity loan, whether that is considered “free and clear” or “with a mortgage or loan.” At almost the same rate, 62 percent of major changes, interviewers left off the category “occupy it without having to pay rent.” Though this is a situation that rarely occurs, interviewers would have no way of knowing if it were the case for a given person without asking. Failing to ask could cause the respondent to give the incorrect answer. In 43 percent of major change cases, interviewers did not use the phrase “free and clear” and in 36 percent of cases, interviewers did not ask about a “mortgage or loan.” In many of these cases, the interviewer simply asked if they rented or simply asked if they owned the unit, without asking how.

Similarly, in 23 percent of major change cases, interviewers simply asked if the respondent “owned or rented” the unit, leaving out the mortgage or loan, free and clear, and the occupying without payment of rent concepts. This is an important component of the question because past testing has shown that sometimes respondents have difficulty with this question when they “are buying” the unit – meaning that they have large mortgages, so are hesitant to simply say that they “own” it. Respondents in this situation often joke that the bank owns the unit, but express discomfort at stating that they own it without further qualifications. It is for this reason that the question includes the “with a mortgage or loan” and “free and clear” distinction.

Respondent Behavior

Respondent behavior to this question was just over the undesirable limit, at 17 percent inadequate behavior (see Table 2a). In about 42 percent of these cases, the respondent answered the question with a simple “yes” or “no” answer that did not say which of the choices applied to them. This is evidence that the question was too complex and/or the meaning was not conveyed adequately. In about a quarter of the major change cases (26 percent), the respondent stated that they owned the residence, not specifying whether they had a mortgage or owned free and clear. These cases could not be adequately coded without further probing by the interviewer. In relatively few cases, respondents provided additional information on the rental situation, stated that it was “already paid” (perhaps indicating owning free and clear) or stated that they “don’t own it yet.” The latter is reminiscent of the problem described under interviewer behavior where respondents are not sure how to answer if they do not have the deed to the house, because of a mortgage.

This question, perhaps not surprisingly, also had a high rate of respondent break-ins, at 20 percent. Respondents often provided their answer once they realized what the question was asking, prior to hearing all the response categories. The problem surfaces here when respondents answer that they own the house prior to realizing that they need to specify whether they own with a mortgage or free and clear.

Compared to Census Tests

This question was phrased slightly differently from past census tests, but results are remarkably similar. In 2004, the major change rate was 67 percent and the inadequate behavior rate was 11 percent (Hunter and Landreth, 2005). Break-ins were slightly lower at ten percent. In 2006, major changes occurred 64 percent of the time and inadequate behavior occurred 19 percent of the time (Childs, et al., 2007-b). Break-ins were only seven percent in that case. Types of problems noted

were very similar to 2010. Though this question was reworded in 2010 to be in a more active voice, problems with administration and understanding persisted.

6. Key Lessons Learned, Conclusions, and Recommendations

The question-by-question analysis showed that, despite improvements made to the questions during the pre-census testing, interviewers still read most questions with major changes to question wording. In some of these cases, the changes may not have impacted data quality in a negative way, but it is nevertheless disconcerting that interviewers changed the question wording so often. Respondent behavior also seems quite similar to previous tests, with a few exceptions that may indicate improvements based on the use of the Information Sheet.

The encouraging note coming out of this study is that the Information Sheet appears to have been used more often as a visual aid in this study than it had been during the census tests. We suspect that this is attributable to two improvements in the operation. First, the structure of the flashcard was changed and combined into a single handout for respondents that also contained the legally required confidentiality notice. Second, all questions that used the lists directly referenced the lists in the question text. Both features were expected to improve the use of the visual aides. Based on cognitive testing studies, we expect to see improved data quality with the use of these visual aids for the questions that use them.

Behavior coding illuminated many important question-specific findings as well. Often the terms “live” and “stay” were both not used when gathering the number of household members. Also, the questions asking about Hispanic origin and race were entirely omitted nearly half of the time when asking questions about other members in the household aside from the respondent. We suspect that interviewers are wrongly assuming that when the respondent answers Hispanic origin and race for themselves, that the rest of the household will have the same answer. Last, in the question aimed at traditionally undercounted types of people (the one that asks about other people staying in the household), “break ins,” or respondent interruptions, were prevalent due to the complex nature of the question itself.

As mentioned in the introduction to this report, most of the developmental work this decade was on a CAPI NRFU questionnaire. We hope to reinitiate testing in this vein as we approach the 2020 Census. We saw evidence of non-standardized interviewing from behavior coding using the 2004, 2006 and 2010 Census NRFU questionnaires. However, we believe that a more standardized interview can be achieved if we fully exploit automation. This was the goal behind the development of the 2008 CAPI NRFU script that was prepared and tested prior to the decision to use a paper NRFU form in 2010. Appendix E shows an example of the 2008 CAPI NRFU script that was developed, tested, and recommended for implementation in 2008 (see Childs, 2008). We believe that a CAPI interview that can take full advantage of automation will lead to improved standardization and data quality.

Because we have evidence that the interviewers do not always ask the roster and coverage questions as intended, we developed a series of shorter questions to convey residence rules. This would eliminate the need for an information sheet for these questions. In addition, many other questions can take advantage of automation to fully exploit fills and edits to make the

questionnaire more natural-sounding, which should improve interviewers' ability to read from the approved script. Longer questions should be broken down, and branched, to facilitate respondent understanding and interviewer good behavior. We believe all these things will lead to improved standardization and data quality.

Future research also needs to test this questionnaire with populations of lower literacy. The 2010 Census NRFU questionnaire relies heavily on the Information Sheet, in the absence of a customized, automated questionnaire. This implementation is certainly suboptimal for populations with lower literacy. In those cases, interviewers were instructed to read the Information Sheet aloud as needed, but research should be conducted on this method as well as other methods that may work better, including an automated script that can branch complex questions into simpler ones.

7. Acknowledgements

This report is released to inform interested parties of research and to encourage discussion. The views expressed on methodological issues are those of the authors and not necessarily those of the U.S. Census Bureau.

The authors would like to acknowledge Laurie Schwede and Matt Clifton for their assistance gathering recordings for this evaluation and Lorraine Randall for preparing the audio tapes for behavior coding. In addition, we thank the Telephone Center Communications Office, particularly John Magruder and Olga Koly, as well as the staff from the Tucson Telephone Center for the manual behavior coding work. We appreciate comments from our critical reviewers as well, Sarah Heimel, Ashley Landreth, Dave Sheppard, Hilda Dimmock, Geoff Jackson, Florence Abramson and Nancy Bates. And finally, we thank Katie Drom for her assistance with the qualitative analysis and Sarah Wilson for her editorial assistance and fact-checking.

8. References

- Beatty, P. C., C. Cosenza, F. J. Fowler, (2006). Experiments on the Structure and Specificity of Complex Survey Questions. Proceedings of the Survey Methods Research Section. Alexandria, VA: American Statistical Association.
- Burgess, M. and D. Paton, (1993). Coding of Respondent Behaviours by Interviewers to Test Questionnaire Wording. Proceedings of the Survey Methods Research Section. Alexandria, VA: American Statistical Association.
- Cannell, C., F. Fowler, and K. Marquis, (1968) "The Influence of Interviewer and Respondent Psychological and Behavioral Variables on Reporting in Household Interviews." Vital and Health Statistics, Series 2 (26). Washington, DC: US Government Printing Office.
- Childs, J. H. (2008). 2010 NRFU Questionnaire Development: From the 2004 Census Test to the 2008 Dress Rehearsal. *Statistical Research Division Study Series (Survey Methodology # 2008-5)*. U.S. Census Bureau.
- Childs, J. H., et al., (2007-a). Cognitive Test of the NRFU Round 3: Revised Questions. SRD Research Report Series RSM2007/09.
- Childs, J. H., et al, (2007-b). Behavior Coding Analysis Report: Evaluating the English and the Spanish Versions of the Non-Response Followup (NRFU) for the 2006 Census Test. *Statistical Research Division Study Series (Survey Methodology # 2007-16)*.
- Childs, J. H., et al, (2009). 2010 Nonresponse Followup Enumerator Questionnaire Cognitive Test Findings and Recommendations. *Statistical Research Division Research Report Series (Survey Methodology # 2009-5)*. U.S. Census Bureau.
- Esposito, J., J. Rothgeb, and P. Campanelli, (1994). The Utility and Flexibility of Behavior Coding as a Methodology for Evaluating Questionnaires. Paper presented at the American Association for Public Opinion Research Annual Meeting, Danvers, MA.
- Fleiss, J. (1981). *Statistical Methods for Rates and Proportions*. John Wiley & Sons, New York.
- Fowler, F. (1992). "How Unclear Terms Affect Survey Data." *Public Opinion Quarterly*, 56: 218-231.
- Fowler, F. and C. Cannell, (1996). Using Behavioral Coding to Identify Cognitive Problems with Survey Questions. In N. Schwarz and S. Sudman (Eds.), *Answering Questions: Methodology for Determining Cognitive and Communicative Processes in Survey Research*. San Francisco, CA: Jossey-Bass.
- Kerwin, J., et al, (2004). "Cognitive Testing of the Proposed 2006 Census Coverage Measurement Person Interview: Final Report," internal Census Bureau report prepared by WESTAT: Rockville, MD.

- Gerber, E., T. Wellens, and C. Keeley, (1996). "Who Lives Here?": The Use Of Vignettes In Household Roster Research. *Statistical Research Division Study Series: Survey Methodology #1996-02*.
- Goerman, P., J.H. Childs, and M. Clifton, (2008). Explaining Differences in Inter-coder Reliability between English and Spanish Language Behavior Coding Research. Proceedings from the 2008 Joint Statistical Meetings, Section on Survey Research Methods, American Statistical Association.
- Hunter, J. (2005). Report on Cognitive Testing of Cohabitation Questions. *Statistical Research Division Study Series: Survey Methodology #2005-6*.
- Hunter, J. and A. Landreth, (2005). Behavior Coding Analysis Report: Evaluating Bilingual Versions of the Non-Response Followup (NRFU) for the 2004 Census Test. *Statistical Research Division Study Series: Survey Methodology #2006-7*.
- Landis, J. R. and G.G. Koch, (1977) "The measurement of observer agreement for categorical data" in *Biometrics*. Vol. 33, pp. 159–174
- Landreth, A., E. Krejsa, and L. Karl, (2006). Behavior Coding Analysis Report: Evaluating the Coverage Research Follow-Up (CRFU) Survey for the 2004 Census Test Administered Using Telephone and Personal Visit Survey Modes. *Statistical Research Division Study Series, Survey Methodology, #2006-1*, U.S. Census Bureau.
- Nichols, E., J.H. Childs, and R. Rodriguez, (2008). 2006 Questionnaire Design and Experimental Research Survey: Demographic Questions Analysis. Statistical Research Division Study Series (Survey Methodology # 2008-1). U.S. Census Bureau.
- Oksenberg, L., C. Cannell, and G. Kalton, (1991). New Strategies for Pretesting Survey Questions. *Journal of Official Statistics* 7 (3): 349-394.
- Pan, Y. (2010). Observing Census Enumeration of Non-English-Speaking Households in the 2010 Census. 2010 Census Evaluations, Experiments, and Assessments Study Plan.
- Rappaport, M., D. Davis and S. Allen, (2006). Final Report on an Observational Study of Census Non-response Follow-up Interviews during the 2006 Census Test in Travis County, Texas, Spring and Summer 2006. Report submitted by Development Associates to the Census Bureau, December 4, 2006.
- Schwede, L. (2009). 2010 Census (CPEX) Evaluation: Comparative Ethnographic Studies of Enumeration Methods and Coverage. 2010 Census Evaluations, Experiments, and Assessments Study Plan.

Smiley, R. and C. Keeley, (1997). Behavior Coding of the ICM Computer Assisted Personal Interview. 1996 Community Census Results Memorandum Number 23. U.S. Census Bureau, Washington, DC.

Sykes, W. and J. Morton-Williams, (1987). Evaluating Survey Questions. *Journal of Official Statistics* 3 (2): 191-207.

Zukerberg, A., D. Von Thurn, and J. Moore, (1995). Practical Considerations in Sample Size Selection for Behavior Coding Pretests. *Proceedings of the Section on Survey Research Methods*, Joint Statistical Meetings, Alexandria, VA, 1995.

Appendix A: Framework of Behavior Codes and an Explanation of Their Analytical Function

The behavior codes are designed to capture four main aspects of behavior for each question: 1) question-asking behavior for interviewers; 2) response behavior for respondents during the first-level exchange; 3) interruptions by respondents (i.e., “break-ins”); and 4) final outcome.

Interviewer Behavior Codes (first-level interaction)

- E/S Exact Wording/Slight Change: Interviewer reads question exactly as worded or with slight change that did not affect question meaning
- MC Major Change in Question Wording: Interviewer made changes to the question that either changed, or possibly could have changed, the meaning of the question
- V+ Correct Verification: Interviewer correctly verified information respondent had provided earlier and respondent agrees
- V– Incorrect Verification: Interviewer assumed or guessed at information not previously provided (even if correct) or misremembered information when verifying
- S Skipped question: Interviewer entirely omitted (answered without reading) an applicable question.
- I/U Inaudible/Uncodable: Interviewer was not audible on the tape

Respondent Behavior Codes (first-level interaction)

- AA Adequate Answer: Respondent provided response that can easily be coded into one of the response options
- IA Inadequate Answer: Respondent provided a response that cannot easily be coded into one of the response options—often requiring interviewer to probe for more information
- QA Qualified or Uncertain Answer: Respondent expressed uncertainty about the response provided or modifies response by placing conditions around their response (e.g., “If you mean this, then the answer is that.”)
- CL Clarification: Respondent requested that a concept or entire question be stated more clearly or repeated
- DK Don’t Know: Respondent stated they did not have the information

- R Refusal: Respondent refused to provide a response
- I/U Inaudible/Uncodable: Respondent was not audible

Final Outcome

- AA Adequate Answer: Respondent and interviewer seemed to agree on a response that can easily be coded into one of the response options
- IA Inadequate Answer: Respondent and interviewer did not agree on a response that can easily be coded into one of the response options
- QA Qualified or Uncertain Answer: Final answer contains uncertainty about the response provided or conditions around the response (e.g., “If you mean this, then the answer is that.”)
- PA Problematic Answer: Final answer was technically codable, but does not seem accurate
- DK Don’t Know: Respondent stated they did not have the information
- R Refusal: Respondent refused to provide a response
- I/U Inaudible/Uncodable: Respondent was not audible

Break-In

A break-in code is also used to capture respondent behavior separately, and in addition to, the actual nature of the response/feedback.

- BI Break-In: Respondent interrupted the reading of a question

Appendix B: The NRFU Questionnaire

OMB No. 0507-0919-C; Approval Expires 12/31/2011

United States
**Census
2010**

U.S. DEPARTMENT OF COMMERCE
Economic and Statistics Administration
U.S. CENSUS BUREAU

ENUMERATOR QUESTIONNAIRE

Unit ID

LCO State County

Tract Block

AA Map Spot

← APPLY LABEL HERE →

Are there any continuation forms for this address?

Yes → Number of forms

No

RECORD OF CONTACT

Type	Mo	Day	Time	Outcome	Type	Mo	Day	Time	Outcome
<input checked="" type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Telephone	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
<input type="checkbox"/> Telephone	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Telephone	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
<input type="checkbox"/> Telephone	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
<input type="checkbox"/> Personal	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<input type="checkbox"/> Telephone	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/> : <input style="width: 20px;" type="text"/>	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.

OUTCOME CODES: NV = Left Notice of Visit NC = No Contact RE = Refusal CI = Conducted Interview OT = Other

S1. Hello, I'm (Name) from the U.S. Census Bureau. (Show ID). Is this (Address)?

Yes - Continue with question S2.

No - Ask Can you tell me where to find (Address)? END INTERVIEW.

S2. I'm here to complete a Census questionnaire for this address. It should take about 10 minutes. (Hand respondent an Information Sheet.) The first part explains that your answers are confidential. I'll refer to the other parts later. Did you or anyone in this household live or stay here on April 1, 2010?

Yes - Continue with question S3.

No - Skip to question S4.

S3. Does someone usually live at this (house/apartment/mobile home), or is this a vacation or seasonal home?

Usually lives here - Skip to question S5.

Vacation or seasonal home or held for occasional use - Skip to "Respondent Information" on back page.

S4. (Only ask if no household member lived here on April 1.) On April 1, was this unit vacant, or occupied by a different household?

Vacant - Skip to "Respondent Information" on back page.

Occupied by a different household - Using a knowledgeable respondent, complete this questionnaire for the Census Day household.

Not a housing unit - Skip to "Respondent Information" on back page.

S5. We need to count people where they live and sleep most of the time.

Please look at list A. It contains examples of people who should and should not be counted at this place.

Based on these examples, how many people were living or staying in this (house/apartment/mobile home) on April 1?

= Number of people

USCENSUSBUREAU

140101

Form D-1(E)
(12-3-2008)

<p>5. Please look at List C. Is (Name) of Hispanic, Latino, or Spanish origin? Read if necessary: Examples of another Hispanic, Latino, or Spanish origin include Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.</p> <p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – What is that origin? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p>6. Please look at List D and choose one or more races. For this census, Hispanic origin is not a race. What is (Name's) race? Read if necessary: Examples of other Asian groups include Hmong, Laotian, Thai, Pakistani, Cambodian, and so on. Examples of other Pacific Islander groups include Fijian, Tongan, and so on.</p> <p><input type="checkbox"/> White <input type="checkbox"/> Black, African American, or Negro <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Some other race — What is that group? \longrightarrow</p> <p>What is the name of the enrolled or principal tribe? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Asian — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Pacific Islander — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p>7. Does (Name) sometimes live or stay somewhere else for any of these reasons? — Read response categories. Mark $\overline{\text{X}}$ all reasons that apply.</p> <p><input type="checkbox"/> In college housing <input type="checkbox"/> In the military <input type="checkbox"/> At a seasonal or second residence <input type="checkbox"/> For child custody <input type="checkbox"/> In jail or prison <input type="checkbox"/> In a nursing home <input type="checkbox"/> For another reason <input type="checkbox"/> No</p>
<p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – What is that origin? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> White <input type="checkbox"/> Black, African American, or Negro <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Some other race — What is that group? \longrightarrow</p> <p>What is the name of the enrolled or principal tribe? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Asian — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Pacific Islander — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> In college housing <input type="checkbox"/> In the military <input type="checkbox"/> At a seasonal or second residence <input type="checkbox"/> For child custody <input type="checkbox"/> In jail or prison <input type="checkbox"/> In a nursing home <input type="checkbox"/> For another reason <input type="checkbox"/> No</p>
<p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – What is that origin? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> White <input type="checkbox"/> Black, African American, or Negro <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Some other race — What is that group? \longrightarrow</p> <p>What is the name of the enrolled or principal tribe? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Asian — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Pacific Islander — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> In college housing <input type="checkbox"/> In the military <input type="checkbox"/> At a seasonal or second residence <input type="checkbox"/> For child custody <input type="checkbox"/> In jail or prison <input type="checkbox"/> In a nursing home <input type="checkbox"/> For another reason <input type="checkbox"/> No</p>
<p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – What is that origin? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> White <input type="checkbox"/> Black, African American, or Negro <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Some other race — What is that group? \longrightarrow</p> <p>What is the name of the enrolled or principal tribe? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Asian — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Pacific Islander — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> In college housing <input type="checkbox"/> In the military <input type="checkbox"/> At a seasonal or second residence <input type="checkbox"/> For child custody <input type="checkbox"/> In jail or prison <input type="checkbox"/> In a nursing home <input type="checkbox"/> For another reason <input type="checkbox"/> No</p>
<p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – What is that origin? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> White <input type="checkbox"/> Black, African American, or Negro <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Some other race — What is that group? \longrightarrow</p> <p>What is the name of the enrolled or principal tribe? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Asian — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p> <p><input type="checkbox"/> Other Pacific Islander — What is that group? $\overline{\text{A}}$</p> <p><input type="text"/></p>	<p><input type="checkbox"/> In college housing <input type="checkbox"/> In the military <input type="checkbox"/> At a seasonal or second residence <input type="checkbox"/> For child custody <input type="checkbox"/> In jail or prison <input type="checkbox"/> In a nursing home <input type="checkbox"/> For another reason <input type="checkbox"/> No</p>

H1. We do not want to miss any people who might have been staying here on April 1.
Were there any additional people that you didn't mention, for example:

- Babies? Yes No
Foster children? Yes No
Any other relatives? Yes No
Roommates? Yes No
Any other nonrelatives? Yes No
How about anyone else staying here on April 1
who had no permanent place to live? Yes No

If yes to any category, ask: What is that person's name?

First Name Last Name

Anyone else?

First Name Last Name

Do not list any people recorded for this question on the inside pages or on a continuation form.

H2. Do you or does someone in this household own this (house/apartment/mobile home) with a mortgage or loan, including home equity loans; own it free and clear; rent it; or occupy it without having to pay rent?

- Own with a mortgage or loan (including home equity loans)
 Own free and clear (without a mortgage or loan)
 Rent
 Occupy without payment of rent

H3. If there is not an address label affixed, or if the address label includes only a location description, ask –
What is the address of this unit?

House number Street name or rural route address

Apartment number

City State ZIP Code

Go to Respondent Information on back page.

Appendix C: The Information Sheet



List A

Your Answers Are Confidential

Your answers are confidential and protected by law. All U.S. Census Bureau employees have taken an oath and are subject to a jail term, a fine, or both if they disclose ANY information that could identify you or your household. Your answers will only be used for statistical purposes, and no other purpose. As allowed by law, your census data becomes public after 72 years. This information can be used for family history and other types of historical research.

You are required by law to provide the information requested. These federal laws are found in the United States Code, Title 13 (Sections 9, 141, 193, 214, and 221) and Title 44 (Section 2108). Please visit our Web site at <www.census.gov/2010census> and click on "Protecting Your Answers" to learn more about our privacy policy and data protection.

Thank you for your cooperation. The U.S. Census Bureau appreciates your help.

WHO TO COUNT ON APRIL 1st

We need to count people where they live and sleep most of the time.

If you have any comments concerning the time it takes to complete this form or any other aspect of the collection, send it to: Paperwork Reduction Project 0607-0919-C, U.S. Census Bureau, AMSD-3K138, 4600 Silver Hill Road, Washington, DC 20233. You may e-mail comments to <Paperwork@census.gov>; use "Paperwork Project 0607-0919-C" as the subject.

Respondents are not required to respond to any information collection unless a valid approval number has been assigned by the Office of Management and Budget. The approval number for the 2010 Census is: OMB No. 0607-0919-C; Approval Expires 12/31/2011.

- | <u>Do NOT include:</u> | <u>Do include:</u> |
|--|---|
| <ul style="list-style-type: none"> • College students who live away from this address most of the year • Armed Forces personnel who live away • People in a nursing home, mental hospital, etc. on April 1, 2010 • People in jail, prison, detention facility, etc. on April 1, 2010 | <ul style="list-style-type: none"> • Babies and children living here, including foster children • Roommates • Boarders • People staying here on April 1, 2010 who have no permanent place to live |

D-1(F) (2-20-2009)

U.S. CENSUS BUREAU

List B

- RELATIONSHIP**
- Husband or wife
 - Biological son or daughter
 - Adopted son or daughter
 - Stepson or stepdaughter
 - Brother or sister
 - Father or mother
 - Grandchild
 - Parent-in-law
 - Son-in-law or daughter-in-law
 - Other relative
 - Roomer or boarder
 - Housemate or roommate
 - Unmarried partner
 - Other nonrelative

D-1(F) (2-20-2009)

List C

- HISPANIC, LATINO, OR SPANISH ORIGIN**
- No, not of Hispanic, Latino, or Spanish origin
 - Yes, Mexican, Mexican American, or Chicano
 - Yes, Puerto Rican
 - Yes, Cuban
 - Yes, another Hispanic, Latino, or Spanish origin – *For example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.*

List D

- RACE**
(Choose one or more races.)
- White
 - Black, African American, or Negro
 - American Indian or Alaska Native
 - Asian Indian
 - Chinese
 - Filipino
 - Japanese
 - Korean
 - Vietnamese
 - Other Asian – *For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.*
 - Native Hawaiian
 - Guamanian or Chamorro
 - Samoan
 - Other Pacific Islander – *For example, Fijian, Tongan, and so on.*
 - Some other race

Appendix D: Clifton Observation Report

"INFORMATION SHEET" USAGE DURING CENSUS 2010 NRFU INTERVIEWS IN PUERTO RICO
An observational study

Matthew Clifton, SRD

Summary

This report chronicles observations from Non-Response Follow-up operations in the San Juan, PR metropolitan area during Census 2010. Specifically, the focus of the report is the usage of the respondent Information Sheet. Enumerators are instructed to provide every respondent with a copy of the Information Sheet. Every respondent seen during observations was provided an Information Sheet. However, usage of the Sheet varied widely. Several variables emerged that deserve future study on how to best utilize this resource for interviews.

The Information Sheet

As part of the Census 2010 operations, Non-Response Follow-up (NRFU) interviews are conducted to obtain information on a household who did not fill out and return a paper questionnaire. The NRFU interview involves an enumerator who visits the housing unit (HU) in order to fill out an Enumerator Questionnaire (EQ). If a member of the household who is 15 years of age or older is located, he or she serves as the respondent and answers the questions posed by the enumerator. In Census 2000, a set of flashcards were used to aid respondents in answering questions with particularly lengthy lists of answer categories (e.g. the relationship question) or with otherwise detailed instructions (e.g. the population count question). These flashcards were not for the respondent to keep after the interview. For Census 2010, the flashcards have been abandoned in favor of a single, letter-sized piece of paper that is given to the respondent. This paper, called the "Information Sheet", is double-sided and contains four lists, labeled List A, B, C, & D, as well as text informing respondents about the confidentiality of census data. The Information Sheet possesses certain advantages over the flashcards used in Census 2000; namely, respondents are able to hold the sheet for use throughout the interview, placing less burden on both interviewer and respondent. Also, the respondent may keep the sheet after the conclusion of the NRFU interview.

This report chronicles the use of the Information Sheet by both enumerators and respondents during NRFU interviews conducted during May, 2010, in Puerto Rico. The sheet, known as "Hoja Informativa" in Spanish, had the exact same dimensions and layout as the English version used Stateside. The only differences (besides language) between the two were the Census logo and the title of the Census Bureau. A special logo only for use in Puerto Rico was used on the Hoja Informativa, and the US Census Bureau was referred to by its name in Spanish, "El Negociado del Censo". The color of the sheet was also different: the Stateside English version is a blue color, while the Spanish version in Puerto Rico is a light teal color. There is also an English version of the Information Sheet for use in Puerto Rico. It is a very light orange color.

The observations

The entire island of Puerto Rico is enumerated using the Update/Leave operation. This means that no household census questionnaires are mailed out. Instead, staff from Local Census Offices conducted address canvassing in March of 2010. This was to update address rosters to account for any new constructions or demolitions since the main address canvassing operation, which was held in the

Spring of 2009. When a housing unit (HU) is visited and confirmed or added to the address list, the staff member leaves a household census questionnaire at the HU with the expectation that the household members will complete it and mail it back.

According to the interactive map on the Census 2010 website, as of 27 April 2010, Puerto Rico had the lowest mail participation rate in the country (information about other US territories was not published on the website). Only 53% of households mailed back their census questionnaires. This means that the NRFU operation in Puerto Rico is all the more important to ensure that each resident of Puerto Rico is counted once, only once, and in the right place.

A total of 18 NRFU interviews were observed over the course of this study. The interviews were conducted in areas falling under the jurisdictions of three different Local Census Offices (LCOs): San Juan, Carolina, and Bayamon, Puerto Rico. The interviews were observed during one week in mid-May, 2010, during the height of NRFU operations. Interviews were observed in a variety of local geographies, including rural, semi-rural, and urban areas. To avoid obtaining results from one lone enumerator that could potentially bias the findings, a number of different enumerators, young and old, male and female, were accompanied as they conducted NRFU interviews.

Not every observed interview out of the total of 18 resulted in a complete household count. A few interviews resulted in the discovery of a duplicated HU in the address roster. A couple of other interviews revealed that the HU in question was either vacant on Census Day, April 1, or that the residents were in-movers who had arrived at the HU after Census Day and did not know any demographic information about the previous residents. As shown in the table below, all observed interviews were conducted in Spanish.

Table 1. Language in which observed interview was conducted

Spanish	18
English	0

Most of the single-family houses visited for NRFU in Puerto Rico were surrounded by fences or walls and had gates. One could not simply walk right up to the house. This made attracting the attention of a person inside somewhat more challenging. Enumerators often simply called out, "Good afternoon! Census!" Once contact had been established with a respondent, the enumerator was usually invited to come closer to the house to conduct the interview. A few interviews were conducted on the sidewalk in front of the HU (noted as "other" in table 2 below), which has the unintended consequence of making a respondent's confidential information able to potentially be overheard.

Table 2. Place where NRFU interview was conducted

at door	7
in yard or driveway	5
inside HU	1
other	5

None of the attempts at conducting an interview that were observed ended in a refusal. One woman agreed to be interviewed, but told the enumerator that she was in a hurry. She asked the

enumerator to abbreviate the interview as much as possible. The enumerator suggested that it might work better for the respondent if she just called the LCO to give her information over the phone. The respondent agreed. The enumerator did give the respondent a copy of the Information Sheet.

Information Sheet usage

For 2010 NRFU operations, the informational flashcards from Census 2000 have been replaced with a simple, letter-sized Information Sheet that contains information about data protection and privacy, as well as lists which aid respondents in answering four questions: S5 (HU population count); 2 (relationship to householder); 5 (Hispanic origin); and 6 (race).

The NRFU EQ has in-line text stating when exactly the enumerator should hand the respondent the Information Sheet. This is supposed to occur during question S2, which asks whether or not the housing unit was occupied by the respondent or someone else in the household on April 1, 2010. The question wording itself states that the first part of the Information Sheet informs respondents about the confidentiality of their answers. It also mentions that the enumerator will refer to the other parts of the Information Sheet later.

Table 3. When was the Information Sheet handed to the respondent?

before interview started	12
during S2 (as prescribed)	6
after S2	0
never	0

Presumably, the timing of the presentation of the Information Sheet to the respondent will affect whether or not the respondent realizes that it is designed to help them negotiate the NRFU interview. Although the text of the NRFU EQ includes an explicit instruction to hand the Information Sheet to the respondent during question S2, the majority of respondents were given the information sheet before the formal interview began. This usually occurred simultaneously while the enumerator informally introduced him/herself. There were no observed interviews in which an enumerator failed to give a respondent an Information Sheet.

Table 4. How was the Information Sheet handed to the respondent?

face up	10
face down	2
folded/other	6

Enumerator behavior regarding how the Information Sheet was presented to the respondent varied. When the Information Sheet was given to the respondent folded, it was usually folded in a booklet fashion, and the privacy notice was face up. Otherwise, the sheet was handed unfolded, either face up (with the privacy notice and List A visible) or face down (with Lists B, C, and D visible). As the Information Sheet is double-sided, it is possible that the way in which it is handed to the respondent will affect their usage of it. There is a lot of visual information to process in a short amount of time. There is no instruction in the EQ for the enumerator to allow the respondent a brief amount of time to read over the Information Sheet. The part that is meant to be read first addresses data stewardship and privacy. It contains several paragraphs of small print which could be overwhelming for

respondents.

Table 5. Was the respondent given time to initially look over the Information Sheet?

yes	11
no	6

If the enumerator gave the respondent the Information Sheet in accordance with the EQ, that is, during question S2, more often than not the respondent was not given adequate time to concentrate on reading over the sheet. It was observed that if the enumerator gave the Information Sheet to the respondent before the formal interview commenced, the respondent was more likely to be given time to read over the text. Note that the information from one interview is missing; this was an interview with a duplicated household. The enumerator knew of the situation before the interview started. Since the enumerator would not be asking the respondent to look at any of the lists on the Information Sheet, he only gave the respondent the Information Sheet to communicate information regarding privacy and data stewardship.

Table 6a. Did the respondent look at the Information Sheet again during the interview?

yes	14
no	2

The total here does not add up to 18. This is because of 2 vacant HU interviews. The respondents were not asked questions that are complemented by the Information Sheet.

Table 6b. If the respondent did look at the Information Sheet again, when?

S5 (POP)	5
2 (REL)	4
5 (HISP)	11
6 (RACE)	13

Did the enumerator point at, gesture at, or otherwise guide the respondent through the Information Sheet?

yes	8
no	10

Most respondents used the Information Sheet to help them negotiate the NRFU interview. It should be noted that the EQ contains text instructing the respondent to use the sheet to read the appropriate list of answer categories for certain questions. These include: question S5, the population count question; question 2, the relationship to the head of household; question 5, the Hispanic Origin question; and question 6, the race question. Despite the fact that most respondents looked at the Information Sheet during the interview, in a slight majority of interviews, the enumerator did not physically direct a respondent's attention to the Sheet (It should be noted that for four interviews, this

was not really necessary, as the questions whose answer categories are detailed on the Information Sheet were not asked due to the nature of the interview being to uncover a duplicate HU, vacant HU, etc.). This is not entirely necessary, as the EQ contains text that is to be read aloud that directs respondents to use the Sheet. However, several enumerators did not read the text on the EQ verbatim, and therefore omitted the instruction to "look at List X".

Respondents most commonly used the Information Sheet to answer the questions about Hispanic origin and race. Previous research has shown that some respondents have difficulty answering these two questions. Respondents in Puerto Rico had no problem answering question 5. They easily chose, "Yes, Puerto Rican" as the answer to the question, "Is [name]/Are you of Hispanic, Latino, or Spanish origin?" However, when asked about race, many people had noticeable difficulty. Several respondents said, "Puerto Rican" or else said something similar to the effect of, "a mix of different things." A few respondents, seeing that the observer was obviously not Puerto Rican, said, "This question is more for people there [in the mainland US]" or "Here [in PRJ] it's not like it is in the US". Several respondents gave their race as "triguena," a term that has come up during cognitive testing on this question in the past.

Summary of flashcard usage and helpfulness

Enumerators are required to distribute the Information Sheet to respondents during the NRFU interview. There is specific text in the Enumerator Questionnaire directing the enumerator precisely when he/she should hand the respondent the Sheet. In the interviews observed for this study, more often than not, enumerators gave the Information Sheet to the respondent before the formal interview commenced. This departure from the prescribed protocol may be beneficial to respondents, as they seemed to have had more time to read over the text contained in the Sheet. This is opposed to when the enumerator hands the respondent the Information Sheet during question S2, as directed by the EQ, since there is no instruction for the enumerator to allow the respondent a few moments' to read over the text.

The method in which the Information Sheet was handed to the respondent varied with the enumerator. Most of the time the enumerator presented it face-up, with the privacy notice on top. However, it was also common for the enumerator to fold the sheet, booklet-style, with the privacy notice on top. The privacy notice contains a large amount of text that is in small print. Respondents may feel overwhelmed with the amount of information. Respondents with poor eyesight who may not have their glasses on their person may have trouble reading everything.

The Information Sheet was used again during the interview by an overwhelming majority of respondents. This is despite the fact that in only about half of the interviews did the enumerator gesture at the Information Sheet. It seemed that the instructions to "Look at List X" contained on the EQ were helpful in getting respondents to utilize the Sheet to answer the questions. However, not all enumerators read EQ question wording verbatim.

The Information Sheet was not commonly utilized to answer the key question in the NRFU interview, which is S5, the population count. This is troubling, since the rest of the interview hinges upon whether or not the respondent provides a correct count of persons living in the household. The Information Sheet was most commonly used by respondents to answer questions 5 and 6 about Hispanic origin and race. It was observed that respondents had varying degrees of difficulty in answering these two questions. Because of this, it is possible that respondent use of the Information Sheet is proportionate with the degree of difficulty in selecting an answer to the question. Several respondents, even after looking at Lists C and D on the Information Sheet, commented that the questions about Hispanic origin and race are not suitably tailored to fit social concepts of these topics in Puerto Rico.

Suggestions for future Information Sheet research

Overall, the format of the Informational Sheet seemed to be user-friendly. Having a sheet of paper that the respondent can hold for the duration of the interview and then keep afterwards is certainly preferable to the flashcards used in past operations. There is relatively little burden on the enumerator, who only has to distribute the Information Sheet towards the beginning of the interview. It was observed that enumerators often gave the respondent the Information Sheet before the formal NRFU interview commenced, instead of when directed by the instruction in question S2. This may have had the unintended, but possibly beneficial, consequence of giving the respondent extra time to look over the sheet. Future research could investigate when is a more comfortable moment for the Information Sheet to be given to the respondent.

There was little indication through observation of whether or not the Information Sheet actually helped respondents select "correct" answers to the questions. Future testing of EQs should include cognitive testing of the Information Sheet. This testing could also be combined with testing of alternatives to the race and Hispanic origin questions, which did not seem to work well for Puerto Rican respondents.

There is no explicit instruction for enumerators on how they should hand the Information Sheet to the respondent. The enumerators observed for this study distributed the Information Sheet in various ways, from face up to folded booklet-style. Future studies could examine which method of handing the Information Sheet over to the respondent is most conducive to them actually using it during the interview.

Appendix E: Simplified Recommended CAPI NRFU Personal-Visit Script (Childs, 2008)

1. _ _ Did you live or stay at <Address> on April 1, 2010?

Yes – go to 2

No – go to 3

2. _ _ Is there anyone living or staying here now who also stayed here on April 1, 2010?

Yes

No - *Proxy interview*

3. Is this house a vacation or seasonal home, or does someone usually live here?

Vacation, seasonal, held for occasional use

Someone usually lives here

4. We need to list people living or staying here on April 1, 2010. We want to list people where they usually live and sleep. For example, college students and armed forces personnel should be listed where they live and sleep most of the time.

If yes to 1:

Let's start with you, what is your first name? Middle initial? Last name? Anyone else?

If no to 1:

What is the first name of a person who was living and sleeping here on April 1st? Middle initial? Last name? Anyone else?

What is the first name of the next person who was living and sleeping here on April 1, 2010? Middle initial? Last name? Anyone else?

5. We do not want to miss any people who might have been staying here on April 1st. Were there any additional people that you didn't mention, for example:

Babies?

Foster children?

Any other relatives?

Roommates?

Any other nonrelatives?

How about anyone staying here on April 1st who had no other permanent place to live?

Yes - What is that person's first name? Middle initial? Last name? Anyone else?

No – Continue

6a. (Now thinking of all the people you just mentioned,) in April, (Were you/ was anyone) living in college housing?

Yes – if more than one person in household – Who was living in college housing?

No

b. In April, (Were you/ Was anyone) living away for the military?

Yes – if more than one person in household – Who was living away for the military?

No

c. On April 1, 2010, (were you/ was anyone) in a place like a nursing home or a jail or prison?

Yes – Who was living away in a place like a nursing home or jail or prison?

No

7. Do you or does someone in this household own this house with a mortgage or loan (including home equity loans), own it free and clear, rent it or occupy it without having to pay rent?

8. Of the people who live here, who (owns/rents) this house?

The person selected is the Reference Person.

The remaining questions are asked for each person in a topic-based manner. The example will just provide wording for a single person.

9. Next I need to record relationships of everyone to (REFERENCE PERSON). Using the categories on the card, please help me fill in the blanks.

NAME is REFERENCE PERSON's _____.

Husband or wife Roomer or boarder

Biological son or daughter Housemate or roommate

Adopted son or daughter Unmarried partner

Stepson or stepdaughter Other nonrelative

Brother or sister

Father or mother

Grandchild

Parent-in-law

Son-in-law or daughter-in-law

Other

10. Are you male or female?

11. What is your date of birth?

b. *If date of birth is unknown-* What was your age on April 1, 2010?

12. (For the census, we need to record age as of April 1, 2010.) So, just to confirm – you were AGE on April 1, 2010?

13a. Please look at List B. Are you of Hispanic, Latino or Spanish origin?

Yes - go to 13b

No - go to

13b. Are you Mexican, Mexican American, or Chicano; Puerto Rican; Cuban; or of another Hispanic, Latino or Spanish origin; for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on?

14a. Please look at List C and choose one or more races. (For this census, Hispanic origins are not races.) Are you White; Black, African American, or Negro; American Indian or Alaska Native; Asian; Native Hawaiian or other Pacific Islander; or Some other race?

White

Black/African American/Negro

American Indian or Alaska Native B *Ask 14b*

Asian B *Ask 14c*

Pacific Islander B *Ask 14e*

Some other race B *Ask 14g*

14b. (*If American Indian or Alaska Native*) You may list one or more tribes. What is your enrolled or principal tribe?

14c. (*If Asian*) You may choose one or more Asian groups. Are you Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese or another Asian group, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on?

Asian Indian

Chinese

Filipino

Japanese

Korean

Vietnamese

Other Asian (For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.) *Ask 14d*

14d. (*If Other Asian*) What is that other Asian group? (For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.)

14e. (*If Native Hawaiian or Other Pacific Islander*) You may choose one or more Pacific Islander groups. Are you Native Hawaiian, Guamanian or Chamorro, Samoan, or another Pacific Island group, for example, Fijian, Tongan, and so on?

Native Hawaiian

Samoan

Guamanian or Chamorro

Other Pacific Islander (For example, Fijian, Tongan, and so on.) *Ask 14f*

14f. (*If some other Pacific Island group*) What is that other Pacific Islander group? (For example, Fijian, Tongan, and so on.)

14g. (*If Some Other Race*) What is your other race group?

15. Just to make sure everyone is counted in the right place, did you sometimes live or stay somewhere else such as at a seasonal or second residence, for child custody, or for any other reason?