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**Qualitative Interviewing with
Suspected Duplicates and Cognitive Testing of the
Targeted Coverage Follow-up (TCFU) Interview**

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

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Final Report

Prepared for

U.S. Census Bureau

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This paper is released to inform interested parties of research and to encourage discussion of work in progress. Any views expressed on methodological or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau. For more information, please contact Jennifer Childs at Jennifer.hunter.childs@census.gov.

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EXECUTIVE SUMMARY

The objective of this study was twofold: (1) to gain in-depth understanding of the living situations in which individuals were more likely to be duplicated, and (2) to test issues related to comprehension, privacy, and confidentiality, and assess the exhaustiveness of the TCFU questions for covering various living situations prone to duplication. Since Census 2000, computer matching has been employed to identify potential duplicates. The Coverage Follow-up Interview (CFU) has been used to follow-up suspected duplicates to resolve where they should be counted. In an attempt to improve the Coverage Follow-Up, in 2009, the Census Bureau developed a new set of follow-up questions—the Targeted Coverage Follow-Up questionnaire. The new questionnaire involved naming and asking questions of each individual duplicate in the household and targeted questions were asked of individuals associated with Group Quarters. The Targeted Coverage Follow-Up questionnaire was cognitively tested and revised, and in 2010 the Census Bureau set out to conduct a larger scale qualitative study. Two sub-studies, a cognitive and a qualitative study, were launched simultaneously to address the outlined objectives.

All interviews were conducted in a face-to-face mode with respondents who were suspected duplicates from the 2010 census or were reporting for household members who were suspected duplicates. The qualitative study was an in-depth examination of household situations that cause duplication. A total of 50 qualitative interviews were carried out. The goal of the cognitive study was to evaluate if the Targeted Coverage Follow-Up questions functioned as intended to uncover suspected duplications and detect any concerns related to privacy, confidentiality, and level of detail requested from the respondents. A total of 226 cognitive interviews were completed.

Qualitative Study Methodology

The qualitative interviews were conducted according to a flexible, semi-structured protocol which enabled interviewers to explore unresolved issues and comments made by respondents. Interview venues in Round 1 included North Carolina, Illinois, and the Washington, DC, metropolitan area. In Round 2, interviewing in California was added.

Cognitive Study Methodology

Participants recruited for the cognitive study were first administered the TCFU questionnaire, then guided through a retrospective think-aloud discussion of how they answered the survey questions. Structured cognitive protocol guides were used in both rounds and the goals were to assess the respondent's interpretation of the TCFU questions, gauge perception about the affective characteristics (threat or sensitivity) of any questions, and assess the overall burden in participating in the TCFU interview. They were also asked if they would be willing to provide the kind the information the TCFU was collecting over the

phone. When time allowed, self-responding duplicate participants were asked to complete an Event History Calendar (EHC) that was designed to further cue recall and possibly close gaps in dates and activities reported in the TCFU. Interviews were conducted in three primary sites—Illinois, the Washington DC metropolitan area, and North Carolina. Interviews were also conducted in California and New York in Round 2.

Findings from the Qualitative Interviewing

Movers. Many duplicated person(s) (especially in Round 1) are accounted for by household moves when the respondents provided census information for both their first and second places to live. Respondents said they had offered information about their actual April 1 residence to enumerators, but they were told they had to supply the information a second time even when they moved after April 1. Information about moves is generally easy to elicit, including both move dates and addresses. Respondents demonstrated a willingness to supply information about the "right" place to be counted.

Custody Situations. In both Rounds, custody situations resulted in many duplicated person(s). For this study, custody included some young adults who had connections with multiple guardianship households (biological/foster parents or other relatives). We found that there tended to be two kinds of custody situations: those in which formal (often court-ordered) agreements had taken place, and those in which no such agreements existed. However, these formal agreements were not always strictly adhered to, and therefore it could be difficult to assess the amount of time that a child spends in each household from the stated agreement. Three of the dependent interviews involved custody cases. When the dependent interviews were compared with the original cognitive interview, great disagreements about the residence of the children emerged. Although the interviews agreed about the identity of the children and the address of the other place the child stayed, each household asserted that the child spends the majority of time with them or "claims" the child as a core household member.

Second Homes. In Round 2, we found a number of cases of snowbirds (people who live at a second residence during the winter months), residences maintained for work, and vacation homes. In these cases, a single social unit spends time in two places. We also identified situations in which economic ties, such as co-ownership or working in a family business, may account for these duplications. Other categories of duplication included convenience addresses (where a person is duplicated at a place where they do not live, but get their mail there and use it for official purposes) and high mobility.

Privacy Issues. Particular issues related to duplication, such as foreclosures or staying with unmarried partners, were found to be sensitive. The pattern may be in whole or in part a reaction to being asked to discuss difficult information in an interview. In addition,

respondents told us that the basic topic of the interview, the movements and locations of household members, was perceived as intrusive.

Findings from the Cognitive Interviewing

Success in Uncovering the Duplicated Address. One of the evaluation criteria for the TCFU was the adequacy of questions designed to uncover the duplicated address over a wide range of living situations. Overall, we were able to identify the duplicated address for almost 70 percent of the participants we interviewed, and in 95 percent of those cases, the duplicated address was provided during the TCFU administration. An important finding is that among the Type 2 Nonphone Matches, 20 percent of the cases were a false match or suspected false match. This is an important limitation of the computer matching process.

Privacy, Confidentiality, and Sensitivity. Many respondents commented on the intrusive nature of the questions. Privacy concerns were especially prevalent among respondents who were reporting on their children, especially when the children were the only duplicates in the household. Participants often assumed the interview would be about them and were somewhat guarded and surprised by questions that were focused on other household members. Information on someone's living arrangements, especially not one's own, was considered "private." Interestingly, participants were not worried about how their data would be used and did not voice any confidentiality concerns. We found some topics sensitive (e.g., staying at a shelter, or being in jail) and believe such sensitivity might be associated with misreport.

Next Steps

Even though the results of this study are quite encouraging, they should be interpreted with caution. The major caveat of this study was the mode of data collection (face to face) that was dictated by the cognitive interviews; the pace of a telephone interview and its measurement properties may be too different to be able to draw inferences for it. A telephone pretest of the TCFU instrument is needed to assess procedures and issues related to privacy, confidentiality, and data quality. Furthermore, we believe a systematic examination of data provided by proxy versus nonproxy respondents would be invaluable in determining if a change to the respondent rule is necessary. Data quality indicators can include percent matching complete dates and address, item missingness, refusals, privacy concerns, and number of probes needed to elicit address and date information.

1. INTRODUCTION

1.1 Scope

Census Bureau aims to count each person living in the United States just once and only once, yet some people are duplicated, or listed at more than one residence, for various reasons. Because the decennial census is one of two primary sources relied upon for information about the size of the U.S. population, along with vital records, it is imperative that an accurate count is taken and that errors, such as duplication, are minimized. Various situations have been discovered that lead to duplication, from children with more than one home (e.g., both formal joint custody arrangements and more informal child care arrangements) to individuals who have vacation/seasonal homes, are away at college, have moved, or stay with relatives, friends, or at a Group Quarter (GQ).

This report details the qualitative research study *Qualitative Interviewing with Suspected Duplicates and Cognitive Testing of the Targeted Coverage Follow-up Interview*. Conducted by the Census Bureau and assisted by RTI International and Research Support Services (RSS), the overarching purpose of the research is to investigate how to more successfully resolve duplication in the census, without anyone feeling that their privacy or confidentiality has been violated. We describe the details of the research study, providing the background, methodology, limitations, findings and recommendations, and key lessons learned. To streamline duplicate-related language and provide consistent terminology related to potential duplicate respondents, we provide a glossary of terms at the beginning of this report. The glossary defines the terms used throughout the report and explains their usage.

1.2 Background

Since Census 2000, computer matching of person records identified suspected duplicates in the census. To resolve computer-identified duplication, the goal is to understand the suspected dups' living situations enough to be able to apply the census residence rule without violating confidentiality. Using the Coverage Follow-up (CFU) interview method, the Census Bureau interviews the household again.¹ However, the CFU interview is not specific to the type of coverage situation, but asks if any person in the household stayed at another place. This approach needed improvement because the respondents often did not admit to having another place where they (or the dups) lived. Previous attempts to revise the wording caused confidentiality concerns for respondents. (See Childs, Sorokin, & Jurgenson, 2011 for more details.) In addition, the respondent must confirm that the duplicated person spends time at another location and then describe how this person splits his or her time for the Census Bureau to remove a record from the census.

¹ Only links with high probabilities are considered true duplicates and eligible for follow-up research.

In 2008, a study in North Carolina was conducted with a fairly small number of cognitive interviews. It yielded some improvements about how better to ask follow-up questions of potential duplicates. However, questions asked in the cognitive interviews remained about the variety of housing situations that may possibly lead to duplication of individuals, and did not capture more nuanced reasons for duplicate counting (Childs et al., 2009).

In 2009, the Census Bureau developed a new set of follow-up questions: the Targeted Coverage Follow-up (TCFU) questionnaire. The new methodology involved asking questions naming each dup, instead of broad household questions like in the CFU. Specific, targeted questions are also asked of dups who were counted in a GQ. A cognitive test, using a convenience sample of people who had not actually been duplicated, was conducted to examine whether respondents understood the experimental TCFU questions, as well as whether the questions functioned as intended to reveal other addresses (Childs et al., 2011). The TCFU was revised based on the findings and recommendations.

In 2010, the Census Bureau set out to conduct this large-scale qualitative study with real computer-identified suspected duplicates from the 2010 census. The two primary objectives of this research were:

- **To test the TCFU questionnaire through cognitive interviews** for issues related to privacy, confidentiality, comprehension, and exhaustiveness of the questions and to gain first-hand knowledge from individuals who were identified as suspected duplicates on all possible living or other arrangements that lead to duplication and to understand what sensitivities are related to those situations.
- **To conduct qualitative interviews** that will provide in-depth understanding of situations where individuals were more likely to be duplicated, including respondents' perceptions of their living arrangements and an assessment of privacy issues.

The results of this study may be used to inform the ultimate goals of TCFU:

- Extract information from the respondent about all possible places where the duplicated person spends time.
- Collect sufficient information about addresses and patterns of movement to use when confirming residency status of the dup through automated processing.
- Be able to automate the interview and incorporate the acquired information on a large scale.

1.3 Intended Audience

This report will inform program managers, research staff, and other members of the teams planning for the 2020 census. In addition, end users of 2010 census data might find that this research provides some context for the data they might use in conducting analysis. Other survey methodologists and research survey professionals who are engaged in

research involving cognitive and qualitative interviews across multiple sites and sample types might find the discussion of methods and procedures useful.

1.4 Research Activities

Fifty qualitative interviews and 226 cognitive interviews were completed with respondents who were suspected duplicates in the 2010 census, or were reporting for household members who were suspected duplicates, without respondents knowing about the duplication. Two rounds of interviews were completed.

The qualitative interviews explored the reasons why a person could have been duplicated in the census and examined if any of the situations apply to the respondent or anyone in their household. The qualitative interviews also sought to understand how respondents discussed their situations in their own words. Details are discussed in **Chapter 4** Qualitative Interviews.

The cognitive interviews covered 18 HU and 9 GQ living situations that were organized in three main groups:

- Type 1 (“phone match” cases): a person was counted in two different HUs and gave the same phone number on each census questionnaire.
- Type 2 (“nonphone match” cases): a person was counted in two different housing units, and gave different phone numbers on each census questionnaire.
- Type 3 (“GQ” cases): a person was counted in a GQ as well as in a HU. Recruiters only contacted the HU.

Type 1 and Type 2 cases were also identified as “whole household match” when every person listed on one census questionnaire is also listed on the second questionnaire, or as “partial household match”, when at least one person on the questionnaire does not match to a person on the other questionnaire. Subgroups included adults, seniors, children, or a combination of ages. There may be one or more dups in a household pair. More details about interviewing and respondent recruitment can be found in **Chapter 2** Methodology.

2. METHODOLOGY

The goal of the two rounds of interviewing was to conduct cognitive testing of the TCFU and qualitative interviews with suspected duplicates across a variety of living situations. The five interviewing sites included three primary sites: Illinois, Washington, DC, metropolitan area, and North Carolina, and the two backup sites, California and New York, which were added in Round 2. These sites were selected based on their diversity in duplicate situations and the geographic proximity of the team of experienced interviewers. This chapter outlines the methodology for interviewing and respondent recruitment employed in this study. Key lessons learned can be found in **Chapter 6**.

2.1 Overview

Interviewing took place in two rounds—Round 1 of cognitive testing consisted of 46 interviews, followed by 180 cognitive interviews in Round 2, for a total of 226 cognitive interviews. Each round of qualitative interviews consisted of 25 interviews, for a total of 50 qualitative interviews. The interviews took an average 60 minutes and were conducted face to face with an adult who was listed in the census for their household preceded by an informed consent procedure. Whenever possible, the recruiters always attempted to make an appointment with the person that completed the census form for the household and with the adult duplicated person himself or herself. If an adult dup was not available, the appointment was made with a proxy who was also listed in the census form for the household, according to the recruitment file on the laptop.²

Respondents were only recruited and asked to participate in either the cognitive or the qualitative interview, not both. Respondents who participated in cognitive interviews were first asked to complete the TCFU questionnaire (see **Section 2.4.2** for an overview of the TCFU instrument), pretending to answer the questions over the phone to simulate how a real TCFU questionnaire will be administered. After the TCFU questionnaire was completed, respondents were guided through a think-aloud discussion of how they answered the survey questions. Where time allowed, respondents who were also dups were asked to complete an Event History Calendar (EHC) with their interviewer that was designed to close any gaps for information not obtained during the TCFU.

The protocol guide was developed with the goal of assessing the respondents understanding of the TCFU questions, gauging respondent perceptions on sensitivity of any questions, and overall burden involved in answering questions. In addition, upon completion of the TCFU questions, respondents were debriefed to gather their perceptions on the overall experience, their understanding of the purpose of the questions, the timeframe they

² With Census Bureau approval, two qualitative interviews were conducted with nonrostered household members who had completed the 2010 census for the household.

focused on during the interview, their overall experience with the 2010 census, and finally, the likelihood of them participating in the survey by phone. Interviewers used scripted probes, but were given the flexibility to probe spontaneously when needed to assess understanding and perception of TCFU questions the respondent answered, as well as anything that seemed unclear, unusual, or generally worth expanding on. The scripted probes included comprehension probes, paraphrasing, and recall probes, while spontaneous probes were used based on respondents behavior, disposition, or prior answers. The qualitative protocol guide was designed to be used in a semistructured format. Scripted questions were intended for use in a flexible manner. Details are discussed in **Chapter 4**.

The interviewer training sessions were developed to prepare interviewers to conduct cognitive interviews in response to the objectives and needs of this task order. Group training was conducted for each round of interviewing. Prior to the start of Round 1, a 2-day in-person training was conducted by the Census Bureau research team. The trainees included the lead researchers for cognitive and qualitative interviews, the entire team of interviewers for cognitive and qualitative interviews, and the recruiters. The Round 1 training began with the introduction of team members from the Census Bureau, RTI, and RSS and an overview of the study objectives, research questions, and prior research conducted on suspected duplication. All interviewer trainees had relevant experience and prior experience conducting cognitive interviews. Training was structured to include group instruction, group discussion, round-robin and paired mock practices, as well as individual coaching sessions as needed. Topics that were relevant to both cognitive and qualitative interviewing included goals of the study, research questions, TCFU prep and administration, tape recording, writing summaries, quotas, privacy, and practice interviews. Administration of the cognitive and qualitative protocols and interview-specific procedures were discussed separately with the respective interviewers. Training also included the conduct of multiple practice interviews, with an emphasis on data security and project procedures and a final knowledge check. Prior to each first interview during Round 1, each cognitive interviewer was required to prepare their materials in advance of the interview and receive individual feedback and coaching on the overall preparation of the TCFU instrument for the particular interview.

Round 2 training for cognitive interviews, brought Round 1 cognitive interviewers back together via videoconference for a 1-day refresher as well as an update on changes to procedures and protocol guides. Training topics included Round 1 findings and design changes, TCFU prepping and refresher, interviewing exercises, discussion of field interviewing issues, cognitive interview protocol guide, summary reporting, and administrative issues. Four new interviewers were introduced in Round 2 with the goal of broadening the recruitment sample in New York and California and to increase interviewer availability. These four new interviewers participated in the training in person. Qualitative interviewers participated in a separate training in person and by teleconference. Because

modifications were made to the protocol guide and the focus of interviewing, the training concentrated on reviewing changes between rounds and the expectations on summary reporting.

2.2 Interview Procedures

Once all potential respondents were screened and successfully recruited, recruiters accessed the calendars of the designated interviewer to select a time and determine the most appropriate location for the interview. Respondents were told that the interview would take an hour on average and that a private location convenient for the participant would be selected. Locations could include cognitive interview labs or meeting rooms at an RTI or RSS office in Illinois, RTI office in North Carolina, or the Census Bureau. The majority of interviews took place in other neutral public locations that were conveniently located in close proximity to respondents' home or work. They included public libraries, participants' homes, community centers or other public places where a quiet, private space could be arranged (e.g., restaurants, coffee shops, or cafes).

To ensure the safety of interviewers and allay any concerns of respondents, interviews in the respondent's home were only offered if the respondent was elderly and unable to travel or drive, handicapped or incapacitated in some other way, a parent with young children, or an elderly couple where both the male and female would be home during the interview.

Once time, date, and location were settled on with the respondent, nonpersonally identifiable information (PII) interview assignment information (**Figure 2-1**) was sent via e-mail. PII data was later conveyed to the interviewer over the phone.

Figure 2-1. Sample Interview Assignment Information

Recruiter Information Form

- Unique Person Number: **11-1D**
- Cognitive or Qualitative (Dep/Indep)? **Cognitive**
- Subgroup: **1h**
- Side (A or B): **B**
- Proxy (Yes or No): **No**
- # of Duplicates: **4**
- Appointment (date and time): **02/29/2011 at 4:00am**
- Location (include address and phone number only if outside of the respondents home): **R's Home**
- Audio Taping: **Approved**
- Notes: **Her kids will be home at the time of the interview**

- Prepping Information (COGNITIVE ONLY)
 1. What order the modules should be in
F1, H1, H2, H3
 2. What the codes in the computer are for each one, in the order they should be prepped.
F1: F1=1, F7=1, F8=1
H1: H1=1
H2: H1=2
H3: H1=2
 3. Marital status codes.
F1: F11 = 0

F1 = ADULT_ACT	G1=SENIOR_REL	G4 = BFGF_ELIG
F7 = ADULT_REL	G6 = SENIOR_CARE	H1 = KID_INTRO
F8 = SONDAU	G9 = SENIOR_ACT	
F11 = BFGF_ELUG		

In preparation for the interview, all materials were gathered: an analog tape recorder and batteries, audiotapes (extra tape), pens/pencils, interviewer ID badge issued by the Census Bureau, consent forms, receipt forms, cash incentive (\$40), protocol guide, reference materials (i.e., Census Brochure, Distressed Respondent Protocol, and 2010 Census Form). For the cognitive interviews, additional materials included the TCFU (appropriate type and sections) and the EHC. Reminder calls were made at least the day before each interview, if not earlier, and other preparations, such as obtaining directions to meeting sites, estimating travel time, withdrawing money for incentives, and gathering coins for parking, were also made as necessary.

During the Round 1 interviewer debriefing, interviewers who had experienced fewer no shows shared that they often made more than one reminder call. For example, if an interview was scheduled more than a week out, then a first reminder call was made 2 to 3 days before the interview and then again the day before. In addition, some interviewers called on day of the interview, minutes before they set out to travel to the designated location. This strategy was particularly valuable for longer distance interviews as it conveyed to respondents that the interviewer was committed to the appointment. More lessons learned can be viewed in **Chapter 6**.

Prior to the start of each interview, the interviewer provided the participant with general information about the project and the nature of the interview. The cognitive interview introduction also included informing him or her that for the first part of the interview he or she would simulate a phone interview and answer questions about the year 2010. The participant was asked to read and sign the informed consent form. This consent form provided additional detail about the study, the nature of the questions being asked, and the rights of the participant as a research volunteer. The consent form also asked the respondent's permission to audiotape record the interview. If the respondent consented to the audio recording, his or her consent was captured in both written and verbal form at the beginning of the tape.

The cognitive interviewers used the approved cognitive interview protocol guide to ensure that all survey questions and scripted probes were administered. With the given flexibility, the interviewer used spontaneous probes to follow up on answers that respondents provided. At the end of the interview, the interviewer administered a debriefing section about the overall interview and respondent's experience with the 2010 census. Details about the qualitative interview protocol guide can be found in **Chapter 4**. The interviewer closed out with the respondent payment procedures. The respondent received a \$40 cash incentive for participating in this study and signed a receipt.

2.3 Interview Reporting, Analysis, and Census Bureau Reviews

On the basis of detailed notes taken during the interviews and audiotapes, interviewers produced written summaries of the cognitive and qualitative interviews using a template designed to capture the details of the interview that would be used in the analysis. The summaries were written with as much detail as possible, including a summary of key points related to duplication and comments made by respondents and exact wording and direct quotes uttered by respondents. In accordance to Title 13 requirements, no PII data was included in the interview summaries. The lead researchers reviewed all summaries and when needed, returned summaries to interviewers for editing. Interviewers or designated responsible staff at RTI and RSS delivered final versions of the summaries to the Census Bureau on a weekly basis. Because of the large amount of cognitive interview data collected, NVivo 9 software was used to compile and classify the summary reports. To complement NVivo, an Excel-based *DataCube* was created and used to create tabulations of case-level information such as interview type, cell designation, and other non-PII data. The qualitative interview data was organized and coded by hand.

Of all 226 cognitive interviews, a little over half (120 or 53%) of the respondents provided a complete address and dates that could be used to confirm an exact dup match. However, in 106 or 47% of the interviews, either respondents did not confirm or mention the other address that was listed in the recruitment file, or they reported an incomplete address or dates in the TCFU. For these 106 cases that did not produce an exact dup match, Census Bureau conducted data reviews. As shown in **Table 2-1**, the review determined that about one third or 35 cases had a verified dup address.

Table 2-1. Case Outcome of Census Bureau Data Review

Outcome	Count and Percentage
Verified dup*	35 (33.0%)
False match	14 (13.2%)
Suspected false match	18 (17.0%)
HU mix-up	1 (0.9%)
Not revealed dup	38 (35.8%)
Total	106 (100%)

* 32 dup addresses were verified in the TCFU, 1 case was verified in both TCFU and during non-EHC portion of the cognitive interview, and 2 were verified during the cognitive interview portion only.

The majority (71 or 66%) of the data reviewed cases were not determined to have verified the dup address:

- About 13.2% or 14 reviewed cases were identified to be false matches, meaning that the two matched people in the recruitment file are likely different people. Another 17.0% or 18 cases were possible false matches but were labeled as “suspected” only. In total, 30.2% or 32 of the reviewed cases were likely false matches.

According to the Census Bureau, the number of matched people in a household is a factor in determining whether there is a false match. The more matches that can be found in the data (i.e., the more people that can be matched), the less likely a false match is suspected.

- One interview was deemed an “HU mix-up” (EP5785). This is different from a false match in that people are listed at the wrong address because of mail delivered to the wrong address or interviewer error in matching the form to the correct address to conduct the interview.
- About 35.8% or 38 of data reviewed cases were classified as “not revealed” because there was not enough information from the interview to know whether respondents actually were connected to the other side of address or if it was a false match. Census Bureau also found that two of these 38 cases seemed misclassified in the recruitment file (TK99457 and TK99456). These two cases were part of the GQ sample in the recruitment file, but it seemed that these should have been classified as correctional facilities in actuality.

In addition, five interviews that verified the dup address during the interview were also sent for review because the interviewer suspected they were misclassified. In two Type 1 interviews (TF4406 and TK8342), the respondent verified the dup address right away because the dup moved to a health care facility, which would be GQs and not HUs. The other three interviews were classified as Type 3 Workers GQ (BS99072, BS99213, and SC96811) in the recruitment file, but the interviews confirmed that the dups were minors in boarding schools.

The need for Census Bureau review indicates that a clerical review operation is necessary for the automated, large-scale TCFU. Additional lessons learned about data reviews can be found in **Chapter 6**.

2.4 Cognitive Interviews

2.4.1 Research Questions to be Answered

The main objective of the cognitive testing of the TCFU instrument was to evaluate if the questions functioned as intended to uncover a suspected dup address and confirm the duplication. Because of confidentiality concerns expressed in initial cognitive tests (see Childs, Sorokin, & Jurgenson, 2011), another objective was to detect any worries participants might express about the confidentiality of their data. Similarly, the study addressed privacy issues, given the level of detail of the questions and the possibility that some respondents might perceive some questions as sensitive and intrusive.

An additional goal of the TCFU questionnaire cognitive test was to identify possible automation problems of the instrument for computer-assisted telephone interviewing (CATI) administration. The flow of the questionnaire and skip logic were of interest to inform possible changes that need to be implemented for telephone data collection based on specific living situations.

Uncovering the Dup

The ultimate goal of the TCFU cognitive testing was to assess if the questions successfully uncover the dup address, determine where to count the duplicate, and whether the dates of the reported living situation confirms the duplication. The results of the test reveal not only if the TCFU questions are detailed enough to uncover the dup address, but also respondents' willingness and ability to provide the dup address and associated dates. This information can be used to inform strategies for successful telephone administration of the instrument before implementation in the 2020 census.

Problematic Issues for CATI Automation

The TCFU instrument cognitive testing also allowed for evaluation of possible issues with instrument automation. Interviewers could point out instances where the skip logic did not seem adequate, or when unnecessary questions were asked under the current design.

In addition to having automated skip logic, the quality of the data could inform what else can be automated. For example, if participants are able to provide complete addresses for certain questions, internal checks can be incorporated in the instrument to match to the dup address and to stop the interview as soon as the dup address is revealed. The results of the test are indicative of the complex logic that needs to be incorporated in the CATI programming to potentially shorten the survey and decrease respondent burden.

This test also allows us to contemplate how much of the data analysis could be automated versus how much would need to be clerically coded. If respondent provided information is incomplete, it may necessitate clerical coding to verify whether the address was revealed or where the person should be counted in the census.

Privacy and Confidentiality Concerns

Another objective of the TCFU cognitive test was to evaluate possible privacy and confidentiality concerns that arose from the survey questions. The different questionnaire subsections contain very detailed questions about a respondent's living situation that might be considered intrusive or raise concerns about data use. Interviewers were trained to take note of such concerns, and these observational data were incorporated in the analyses to examine which questions elicited the most concern and what were respondents' reactions.

Question Wording and Organization

One of the goals of the cognitive test is to evaluate the individual questions and also the TCFU instrument as a whole. When evaluating individual questions, we focused on question understanding and respondent reactions to each question. When evaluating the survey instrument as a whole, we focused on skip logic and examined if the questions asked of each respondent were adequately matching the individual situations and if they could capture the dup address.

2.4.2 TCFU Instrument

The TCFU questionnaire is designed to have the respondent confirm that the dup (“the person in question”) lived or stayed at more than one address, the associated dates for the reported address, and other information about his or her living situation. Household members who are not suspected dups are not inquired about, thus a respondent only receives questions about the dup(s), whether or not he or she is a dup. This means that a proxy respondent who is not a dup will not receive questions about him or herself.

According to Childs et al. (2011), the TCFU asks targeted questions about the suspected dups based on (1) whether the phone numbers matched, (2) the age of the people who are duplicated, and (3) whether the match was a HU-HU match or a HU-GQ match. The basic structure of the TCFU interview is outlined below.

- Verify we have reached the correct household.
- Ask to speak with one of the adult dups, if they are available, or ask to speak with an adult member of the household who can answer questions about the child or adult dups.
- Verify what address we have reached:
 - If the dups have different phone numbers → “Have I reached (address)?”
 - If the dups have the same phone number → Ask which address we reached, specifically mentioning both addresses.
- Targeted questions on living situations:
 - If a dup between two HUs with different phone numbers → Target questions based on age.
 - If a dup between two HUs with the same phone numbers → Ask if they recognize the “other” address and to describe it, then target questions based on age if necessary.
 - If a dup between a HU and a GQ (exclude sensitive GQs) → Target questions based on GQ type.
- Address and “Stay Most of the Time” questions:
 - If a dup says “yes” to any of our targeted questions →

- Ask for the address of that other place.
- Ask how much time they spend at that place and who usually lives there.

Throughout the TCFU, gate questions are placed. When a positive response is given by the respondent, follow-up questions are then presented. For example, if the respondent reports having lived or stayed at an address, additional questions about that address and the dates and frequency of being at that address are asked. Or, if the respondent reports having participated certain activities or been in specific living situations, additional questions are asked to collect the address and the dates and frequency of living or staying at that address, as well as names of people who were there.

The TCFU questionnaire contains 19 sections, as follows.

- Section A: Establish respondent identity and address.
- Section B: Not applicable to cognitive testing.
- Section C to E: Discuss time spent at current address and/or addresses used in the census.
- Sections F to R:
 - Age or situation-based questions.
 - Determine why dup stays at other addresses.
 - Identify those addresses.
 - Discuss amount of time spent there.
 - Discuss any other people who live there.
- Section S: The end.

However, the respondent is only asked questions from sections that are relevant to the type of case. In Type 1 or 2 cases, sections are tailored to the number of suspected dups and their ages. In Type 3 cases, sections are specific to the type of GQ where the dup was counted.

As described in the interviewers training manual, key questions in the TCFU are found in Sections C to R and are reviewed as indicated in the sections that follow. A complete TCFU questionnaire can be found in **the Appendix**.

Sections C, D, and E (Introduction Sections)

Along with Sections A and B, Sections C, D, and E are introduction sections.

Section C

This section is only administered if the respondent's current address is different from the address(es) where he or she was counted during the census. Section C captures the new address and collects information for each dup about when they lived or stayed at the new address in 2010.

Section D

- For telephone matches, this section collects information on each dup regarding how much time they spent at ADDRESS 1 (one side of the address) in 2010. If the respondent indicated they were not currently living at ADDRESS 1, then the TCFU asks for a description of ADDRESS 1.
- For nonphone matches, this section collects information on each dup regarding how much time a dup spent in 2010 at the address associated with the phone number where the respondent was contacted.

Section E

This section is only administered for Type 1 cases: telephone match cases. It collects information on each dup regarding how much time they spent at ADDRESS 2 (the other side of the address that has not been discussed). If the respondent indicated they were not currently living at ADDRESS 2, then the TCFU asks for a description of ADDRESS 2.

Sections F, G, and H (HU Person Sections)

Sections F, G, and H are HU person sections, which correspond to the age of the dup. The questions in these sections are asked of the dup only and tailored toward the age of the dup.

Section F

This section is asked for all dups who have been flagged as a young adult or adult (aged 18 to 70). The section starts off by asking about certain activities a young adult or adult is likely to have done. The questions then ask about certain persons who the dup may have stayed or lived with during 2010. The section concludes with a number of broad questions that identify other living situations that may not have been captured by the previous questions.

Section G

This section is asked for all dups who have been flagged as senior citizens (aged 71 to 125). This section starts off by asking about persons who the dup may have stayed with during 2010. The questions then ask about places the dup may have stayed during 2010 for care or services. The questions then ask about certain activities a senior citizen is likely to have done. The section concludes with a number of broad questions that identify other living situations that may not have been captured by previous questions.

Section H

This section is asked for all dups who have been flagged as children (aged 0 to 17). This section first asks about living situations that children might have been in during 2010 and concludes with broad questions that identify other living situations that may not have been captured by previous questions.

Table 2-2 illustrates the gate questions asked in each section.

Table 2-2. Gate Questions Asked in Age-Targeted Sections

Section F (Adults)	Section G (Seniors)	Section H (Children)
Moved	Moved	Stay with a parent
Attend college/graduate school	Been in the military	Stay with a grandparent
Been in the military	Have a job	Stay with another relative
Have a job	Seasonal or vacation home	Different address for school
Seasonal or vacation home	Another residence owned/rented	For childcare purposes
Another residence owned/rented	Stay with son or daughter	Friend/neighbor/legal guardian
Stay with parent	Stay with brother or sister	Foster child
Stay with son or daughter	Stay with another relative	Other reasons
Stay with brother or sister	Stay with companion/significant other	
Stay with another relative	Stay with friends	
Stay with boyfriend/girlfriend/significant other	Nursing home, assisted living, independent living	
Stay with friends	Rehabilitation hospital	
Other reasons	Health reasons	
	Other reasons	

Sections I to R (GQ Person Sections)

The questions asked of persons duplicated in a GQ are tailored specifically towards the type of GQ in which they are counted. Only one section corresponds to the type of GQ in which the person was counted. **Table 2-3** illustrates the gate questions asked in Sections I to Q.

Table 2-3. Gate Questions in GQ Sections

GQ	Questions
Military (Section I)	Military barracks, military ship, on-base housing, off-base housing, military academy dormitory, military treatment facility, military disciplinary barracks or jail, in the military
College (Section J)	College dorm or residence hall, sorority or fraternity house, on-campus college apartment, on- or off-campus college suite, off-campus college apartment, study abroad program, hotel for college living, taken college classes
Adult Correctional Facilities (Section K)	Correctional facility like jail or prison, detention center, one night under arrest
Juvenile Institutions: correctional or noncorrectional	Group home, residential school for people with disabilities, juvenile correctional facility, boot camp, training school or

(Section L)	farm, treatment center, other type of juvenile facility
Nursing Home (Section M)	Nursing home, assisted living facility, rehabilitation facility, hospital—generalized or specialized, skilled nursing facility, group home, residential treatment facility, residential school for people with disabilities
Adult Group Home (Section N)	Group home, residential treatment facility, residential school for people with disabilities, nursing home, assisted living facility, rehabilitation facility, hospital—generalized or specialized, skilled nursing facility
Homeless (Section O)	Services from soup kitchen, services from mobile food van, shelter, hotel or motel
Workers Facilities (Section P)	Job where employer provides housing, stay in a place with people you work with, a job that involved living somewhere else
Religious (Section Q)	Religious or spiritual reasons

In addition, Section R concludes the GQ person section and asks broad questions that identify other living situations that the GQ-related questions did not capture.

2.5 Qualitative Interviews

See **Chapter 4**.

2.6 Recruitment of Duplicate Households

The goal of recruitment was to gain the cooperation of dup and proxy respondents in 27 HU and GQ duplicate situations and render up to 300 cognitive and qualitative interviews. The interviewing sites were Illinois; Washington, DC, metropolitan area; North Carolina; southern California; and New York. Census Bureau considered a “site” to include approximately a 100 mile driving radius from the center of the site. This metric allowed more interviews to be conducted within a site, while lessening travel expenses.

2.6.1 Overview

The RTI-RSS team enlisted highly skilled recruiters who were experienced in averting and converting refusals and were particularly skilled in cold calling. The team of recruiters contacted over 3,000 households during the active recruitment period, with a success rate of 9%.³ Although we had expected to be able to recruit 80% of the completed interviews by telephone and 20% in person, all of the recruitment was conducted by telephone to reduce cost. About 44%⁴ of the finalized cases had problematic telephone numbers because they

³ The 9% success rate is calculated using the number of cases successfully recruited and divided by the total number of cases initiated for recruitment. We did not exhaust attempts for all cases initiated for recruitment simply because the quota for a cell had been filled.

⁴ At the end of the second round of recruitment, 1,472 cases were finalized with a disposition code of bad/no phone, refused/language barrier, recruited, or moved. Among them, 651 had a bad phone number or no phone number was listed. Dividing 651 by 1,472 results in 44%.

were disconnected, fax, not associated with the household being recruited, or not listed in the recruitment file.

In Round 1, four recruiters were site specific, with single recruiters assigned to North Carolina and the Washington, DC, metropolitan area and two recruiters assigned to Illinois. In Round 2, the two Illinois recruiters became interviewers and three new recruiters were trained. The North Carolina recruiter took on the task of recruiting for southern California, and the New York site was largely covered by the DC recruiter. A recruitment lead and co-lead oversaw the recruiting process, assigned cases, and acted as liaisons between recruiters and interviewers. Recruiters training in the first round participated in a 2-day, in-person training at Census Bureau headquarters. Recruiters were trained in both recruitment procedures and preparing of the TCFU questionnaire for interviewing (“prepping”). Prepping included assembling the appropriate sections, filling in blanks with address information and dups name, and strikeout sentences as necessary. However, during the training it became evident that prepping was better suited for interviewers. See **Chapter 6** for lessons learned regarding prepping of the TCFU.

To ensure successful recruitment across the selected sites, several measures were taken. Each recruiter was provided with a secure census laptop that contained an encrypted list of duplicated persons within a 100-mile radius of the interviewing sites. Over two rounds, recruiters called the households in the lists and screened for eligibility. We were able to recruit the majority of the respondents within a 50-mile radius. Recruiters were mainly responsible for sites local to where they were stationed, providing the added advantage of being familiar with the areas. Recruiters followed a recruiting script that was developed jointly by RTI, RSS, and the Census Bureau. Advance letters were mailed prior to starting the telephone recruitment. However, the cold-calling method complemented the recruitment when necessary.

Maintaining privacy and confidentiality at all times during recruitment and interviewing was paramount during the study implementation. This presented a challenge because even though potential respondents had participated in the decennial census, they received “cold calls” and could not be told that they were recruited because they were suspected duplicates in the census. Revealing the duplication could potentially violate Census Bureau’s confidentiality promise for the decennial census, as it is possible that a respondent may have been duplicated because someone else listed him or her on the census form. In addition, respondents were told during the consent process and introduction to the study that while participation in the decennial census was mandatory by law, participating in this research study was completely voluntary.

Credibility of the study and allaying respondent concerns regarding legitimacy presented another challenge. To increase the study’s credibility and reassure respondents of the

Census Bureau's commitment to confidentiality and privacy, the Census Bureau sent out advance letters that introduced RTI and RSS as trusted partners. To assure confidentiality of the duplicated respondents, the salutations in the letters and on the envelopes were generic. In addition, during Round 2, telephone numbers to Census Bureau regional offices was made available to respondents who wanted to verify the legitimacy of the study.

2.6.2 Screening

In Round 1, a single recruitment script was used. Rather than reading the introduction verbatim, recruiters were encouraged to use it as a guide to maintain a conversational style. The introduction offered responses to commonly asked questions, descriptions of the purpose and goals of the study, and incentives to participation. Specific screening questions were read verbatim.

In Round 2, once recruiters determined the correct side and person to call, the recruiters used a script appropriate for the interview type they were recruiting. As with the Round 1 recruitment guide, the Round 2 guide offered responses to commonly asked questions, descriptions of the purpose and goals of the study and incentives to participation. It also screened out households who had made a permanent move between March and August of 2010 (the decennial census field period). This was a change in requirements by the Census Bureau because so many of Round 1 respondents had been duplicated because of a move. This process resulted in 139 households being eliminated, whereas in Round 1, they became interview appointments. Prior to being able to determine a permanent move took place, it was necessary to provide information about the project and, for all intents and purposes, recruit the respondents.

Along with screening movers, in both rounds, respondents were also screened for employment by the federal government since this made them ineligible for an incentive payment. In cases where the respondent was ineligible for payment, the recruiter would offer the respondent a choice of participating without payment, or, if this was not acceptable, suggesting another eligible adult in the household to complete the interview instead. Lessons learned about respondent screening can be viewed in **Chapter 6**.

2.6.3 Advance Letters

Advance letters were mailed from the Census Bureau. In Round 1, because the recruitment file was not available in advance, only proximity to field interviewers was used as the main measure for determining which duplicate households receive an advance letter. This created the unintended result of creating a higher concentration of city dwellers since most interviewers were located in urban areas.

In Round 2, advance letter labels were generated for at least one side of the address for each case in the sample that was actively worked (in some cases, both sides, such as

seniors because we knew they were harder to reach). As cases were identified for recruiting, the labels were affixed to envelopes, and the letters were batched and returned to Census Bureau for mailing. Batches were held at the Census Bureau until needed by the recruiter. Lessons learned about using advance letters as a recruitment tool can be viewed in **Chapter 6**.

2.6.4 Recruiting for Dependent Interviews

Recruiters in both rounds were also asked to recruit identified dependent cases when an interview had been completed with the other side of the address (the “independent” interview). This study initially sought 50 dependent *cognitive* interviews. In the second round, Census Bureau’s expectations on the dependent interviews changed to rendering 10-15 dependent *qualitative* interviews.

Despite reviewing every possible completed independent interview for eligibility, recruitment of dependent interviews was quite challenging. In Round 1, recruiters managed to recruit only a single cognitive dependent case. In Round 2, efforts to recruit dependent cases started the first week with the assignment of 88 cases where there was a high likelihood that an independent case would result in a dependent case. However, only five dependent interviews were completed in Illinois. Lessons learned about recruiting for dependent interviews and recommendations for the future can be viewed in **Chapter 6**.

Once it became evident that more dependent qualitative cases could not be recruited within the field period, the recruitment lead and Census Bureau devised an alternative plan. Approximately 305 cases in southern California were identified as replacements for dependent qualitative interviews. The household composition included members other than a biological parent, a spouse and children and using qualitative interviewing technique is expected to render interesting and informative findings. The recruitment effort among the replacement sample met the targets.

2.6.5 Profile of Duplicate Households and Situations

This section provides a picture of living situations covered in the cognitive interviews. As shown in **Table 2-4**, at least one cognitive interview was conducted with a proxy or a dup (nonproxy) in all 27 recruitment cells. Recruiters and interviewers were able to meet or surpass the targets in all of the cells except for two Type 1 partial household match cells 1g (all dups are children) and 1i (all other combination of ages) and a Type 3 cell 3j (religious GQ) because there were fewer than 25 households in the sample for recruitment. More interviews were completed with actual adult dups than proxy respondents for both Type 1 and Type 2 cases.

Table 2-4. Summary of Final Status of Respondent Recruitment—Cognitive Interviews

Cases	Duplicate	Proxy	Total
Type 1 Cases – Phone Match	37	5	42
1a: Whole household match: All duplicates are adults	9	0	9
1b: Whole household match: All duplicates are seniors	6	0	6
1c: Whole household match: The matches include children	5	0	5
1d: Whole household match: Any other combination of ages	4	0	4
1e: Partial household match: All duplicates are adults	6	1	7
1f: Partial household match: All duplicates are seniors	2	3	5
1g: Partial household match: All duplicates are children	0	1	1
1h: Partial household match: Other age combinations with children	4	0	4
1i: Partial household match: All other combination of ages	1	0	1
Type 2 Cases – Nonphone Match	71	54	125
2a: Whole household match: All duplicates are adults	17	0	17
2b: Whole household match: All duplicates are seniors	6	1	7
2c: Whole household match: The matches include children	10	0	10
2d: Whole household match: Any other combination of ages	4	0	4
2e: Partial household match: All duplicates are adults	16	10	26
2f: Partial household match: All duplicates are seniors	10	14	24
2g: Partial household match: All duplicates are children	0	19	19
2h: Partial household match: Other age combinations with children	5	8	13
2j: Partial household match: Any other combination of ages	3	2	5

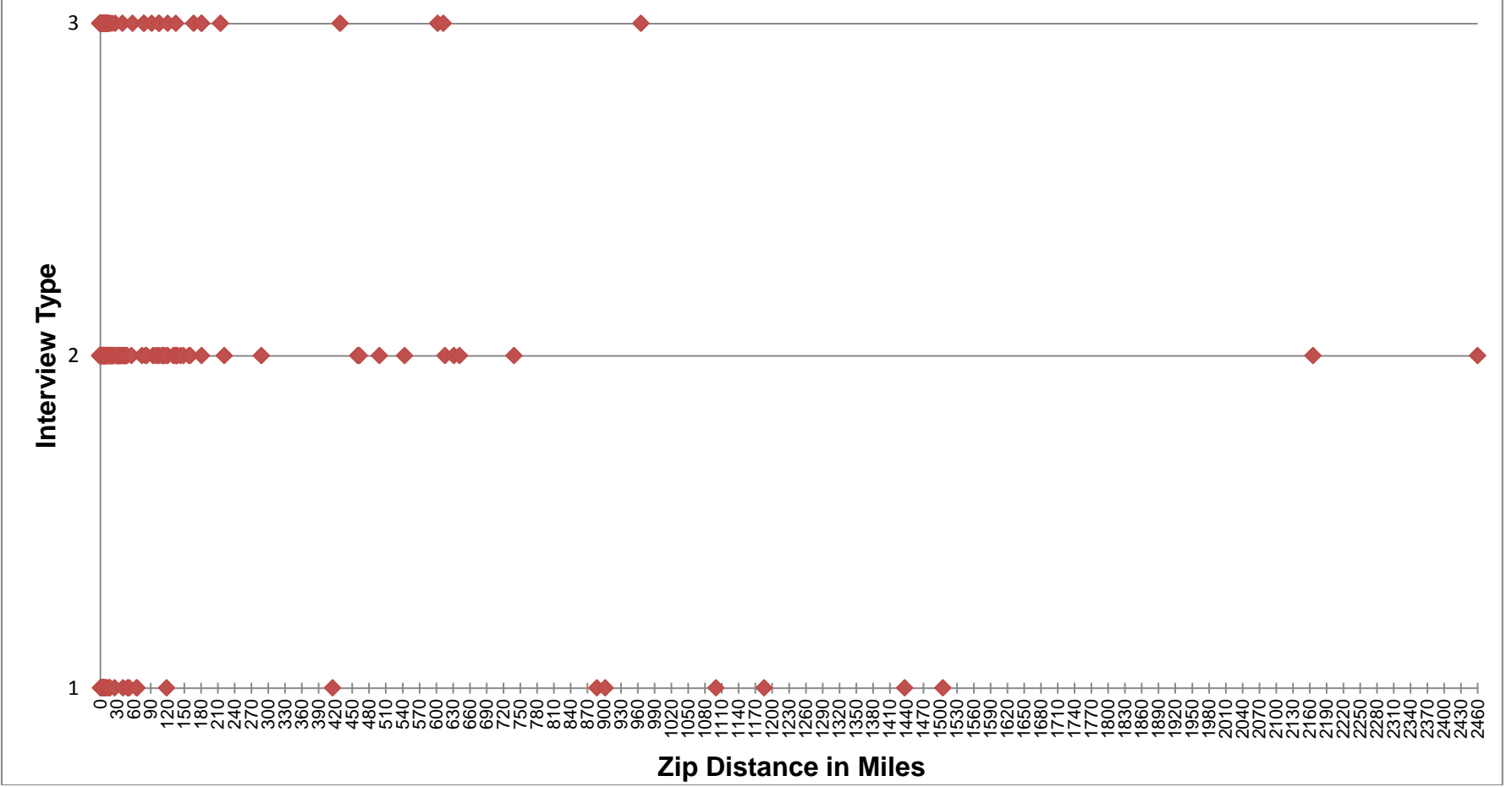
(continued)

Table 2-4. Summary of Final Status of Respondent Recruitment—Cognitive Interviews (continued)

Cases	Duplicate	Proxy	Total
Type 3 Cases	22	37	59
3a: I: Military GQ	1	3	4
3b: J: College GQ	1	11	12
3c: K: Jail GQ	2	9	11
3d: L: Juvenile GQ	0	3	3
3e: N: Group Home GQ	5	2	7
3f: M: Nursing Home GQ	5	3	8
3g: O: Homeless GQ	5	3	8
3h: P: Workers GQ	2	3	5
3j: Q: Religious GQ	1	0	1
Total	130	96	226

The distance between the two matched households, defined by the zip distance (the distance between zip codes for the two linked addresses for Type 1 and Type 2 households), was of particular interest to the Census Bureau. During Round 1, the majority of addresses were 12 miles or less apart. In Round 2, only 10% of the complete interviews were 12 miles or less apart—the majority of cases had much greater distances. The improvement from Round 1 recruitment can be attributed to more strategic assignments. When distances for cases across rounds were combined, **Figure 2-2** shows that there is slightly more dispersion in Type 1 cases between the addresses (relative to Type 2), while Type 2 addresses had the longest distance between addresses—over 2,000 miles. The longest distance between any pair of Type 1 addresses was 1,500 miles. More discussion about zip distance can be found in **Section 5.1.11** in **Chapter 5**.

Figure 2-2. Scatterplot of the Distance between Addresses by Interview Type



Interviewing households with multiple duplicates was a priority for the Census Bureau for Type 1 and 2 cases, (Type 3 cases were always limited to one duplicate). Because of more strategic assignments during Round 2, this goal proved to be achievable. **Figure 2-3** shows that most Type 2 interviews had one duplicate (75), while in Type 1 interviews, there were almost equal numbers of households with one or two duplicates. The same dynamic applied for households with three or four duplicates. Type 2 interviews had significantly more duplicates in a household than Type 1 interviews, though this disparity disappeared in households with four and five duplicates. This was mainly because of restrictions in the available sample. For example, there were only five households with six dups in the recruitment sample for the recruiters to attempt in Round 2. However, the final distribution of dup households with multiple dups fared better than its distribution within the sample available to recruiters, meaning the recruitment was successful in representing multiple dups households.

Figure 2-3. Number of Interviews by Number of Dups in a Household across Interview Types

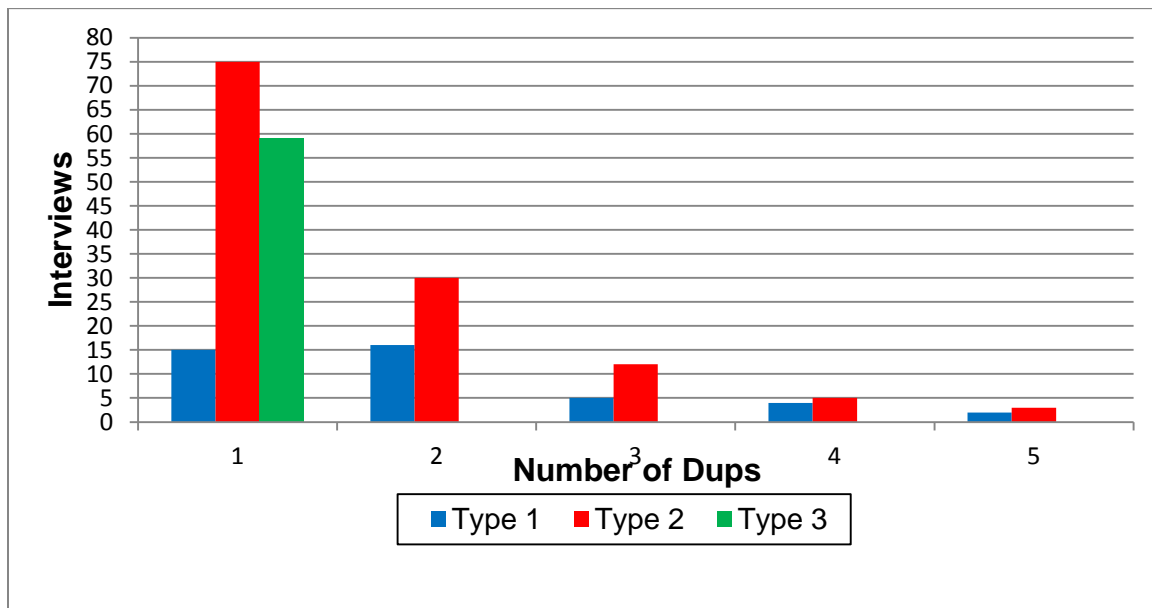
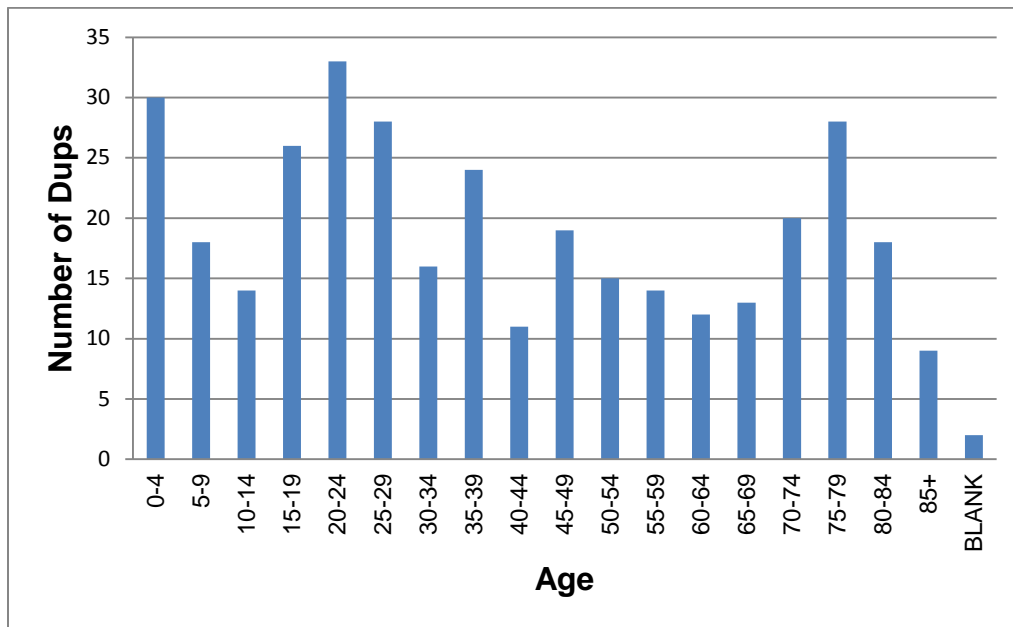


Figure 2-4 shows the age distribution for all of the duplicates covered in the completed interviews. Three age categories had the highest number of dups represented: children (aged 0-4), young adults (aged 20-24), and elderly (aged 75-79).

Figure 2-4. Age Distribution of Dups Covered in the Cognitive Interviews, Rounds 1 and 2



3. LIMITATIONS

A major limitation of the TCFU instrument cognitive testing is that the essential survey conditions in the field will be very different from the setting of the cognitive tests. In addition to implementing the cognitive test in a face-to-face mode (while the TCFU instrument will be administered on the phone), the task required from the respondent and the pace of the interview is different from what could be expected in a telephone survey. In a cognitive test setting participants might be more motivated to think through the questions given they have agreed to participate in the study and are provided with an incentive as compensation for their time and effort. The elaborate recruiting, incentives, and face-to-face data collection mode might also contribute to the legitimacy of the study; thus, the cognitive interview might be a very conservative test of the privacy and confidentiality concerns that might be raised during the telephone administration of the TCFU. In addition, respondents might be more willing to reveal information in a cognitive interview setting than they would reveal otherwise, which may overestimate the success of the TCFU in uncovering dup addresses. Despite these limitations, the cognitive test will be invaluable in revealing if the TCFU questions are interpreted as intended.

Another limitation to the TCFU instrument cognitive test is the timing of the test. Since the majority of the interviews were conducted in 2011 (a year after the census), we suspect it provides a very conservative idea about the data quality. In addition, the hype of the census campaign, which had died down by 2011, may also influence participation rates and respondents' willingness to provide information.

Even though the sample of respondents was drawn from the actual duplicate records, the recruitment did not yield a representative sample. Participants in this study may have very different living situations (and willingness to talk about them) than persons who refused to take part in the study. Despite this limitation, we feel the results of the study can be informative about possible problems both from a questionnaire design perspective and field operations. Related, the small number of cases examined in depth in the qualitative study may not be representative of the duplications that exist in the population at large. Furthermore, the picture presented of the duplications in the qualitative study may not be exactly comparable to the picture presented in the cognitive examination of the TCFU.

Another limitation to the results presented in this report is that the outcomes reported from the cognitive study sometimes are based on Round 2 cases only. After the first 46 complete cases (Round 1), the cognitive protocol guide and summary report shells were revised to incorporate more details that would help answer questions that arose during Round 1 analyses, but there were no data to answer them. Thus, analyses involving unique addresses, a distinction between new and dup address, or date gaps are based on Round 2

cases only (180 completed interviews). Similarly, different research protocols were used in Round 1 and Round 2 of the qualitative study. Although these protocols had the same objectives and covered substantially the same material, different memory cues were used to elicit situations relevant to the duplication in the household. This may limit the comparability of the cases in Round 1 and Round 2.

Finally, some of the results of the cognitive test are dependent on the post-hoc coding scheme that was created for analyzing interviewer-respondent interactions (e.g., confusion, incorrect response) and coders' ability to uniformly follow that scheme. The time line for training coders and running the analyses did not allow sufficient time to run standard agreement statistics and reconcile differences. To the extent to which the codes were assigned subjectively, the results should be interpreted with that in mind. Likewise, data analysis from the qualitative study rests on some subjective processes. In particular, the categorizations used to describe situations of duplication rest on qualitative interpretation of the cases. Furthermore, matching of duplicates between households was not based on perfect address and name consistency in the qualitative study. Other data, such as household relationships (provided by the Census Bureau), and internal evidence within the qualitative interview were used to assess these matches. As a result, there may be some room for disagreement on these matches, as well as the identification of false matches.

4. QUALITATIVE INTERVIEWING WITH SUSPECTED DUPLICATES

4.1 Introduction

This chapter describes the 50 qualitative interviews carried out for the census project to examine suspected duplicates. The aims of this research were to give a general qualitative picture of the nature of the duplications in the cases that were uncovered. We attempted to understand the underlying reason for the duplication and to examine the circumstances surrounding the household's living situation at the time of the census, which may have contributed to the duplication.

Two rounds of interviewing were carried out with 25 cases per round. The two rounds had somewhat different foci. In Round 1, in addition to examining the conditions of duplication, questions were included to elicit respondents' general attitudes and experiences toward the census. In Round 2, these questions were replaced by a series of specific questions to explore respondents' perception of patterns of movement. In addition, a few relevant cognitive style probes were included in Round 2 to examine census vocabulary of particular interest.

Our major aim was to provide background insight into the social and procedural processes that may result in duplication.

4.2 Methods

These qualitative interviews used a semistructured protocol. Scripted questions were intended for use in a flexible manner. The interviewers (all highly experienced qualitative interviewers) were instructed to follow up on any places or stays away from the main census household, whenever they were mentioned by the respondent. We also followed up topics introduced by the respondents that were not included in the set of questions.

Respondents were recruited from households in which information provided by the census indicated that there was a potential duplication. We attempted to set up an interview to speak with a duplicated person, before a nonduplicated person, regardless of whether they were the person who completed the census form. Specific recruiting strategies are addressed in **Section 4.2.4**.

4.2.1 Round 1 Protocol

The protocol included an initial segment on the respondents' experiences and views of the census. This was followed by a set of hypothetical questions that asked about reasons why various age classes of persons might be duplicated or omitted from the census. The purpose of these questions was twofold: first, to cue respondents to such situations in their own

households, and second, to elicit their understanding of living situations that might have such a result. Then, the roster was read to the census respondent. Portions of the census form, including the residence instructions and coverage questions, were then introduced and discussed with the respondent. Census respondents were asked to explain their living situations and those of persons in their households. A different path was followed for those who had not filled out the census, since confidentiality concerns prevented revealing census data to them. Those who had not responded to the census were only asked about themselves. Finally, a series of questions was asked about reactions to census advertising, preferences for mode of response, and use of census resources, such as the help line, etc. Respondents were also asked for places where they might have ties and where they might have often visited. Respondents were debriefed on the sensitivity of the questions. The last section of the protocol collected demographic information about the respondent.

The initial protocol was revised after five interviews to improve the question flow and eliminate redundancy. The changes were not extensive. One question was eliminated, and some wording was slightly changed.

In all but two cases in Round 1, we interviewed the person who had been the respondent in the census. This may limit our ability to discuss the living situations of duplicated persons who did not respond to the census, from their own points of view. However, it should be noted that if errors in enumeration were made, they were most likely to be made by the central household respondent, and thus, that point of view is critical to an understanding of duplication.

In Round 1, we interviewed 11 respondents who had been duplicated; 12 who were proxies for duplicated persons; and an additional 2 cases classified as "false matches" (which are neither proxy or nonproxy). In Round 2, we interviewed 9 respondents who were duplicated, 14 who proxied for duplicated persons, and 2 respondents in cases believed to be false matches. Seventeen of the 24 proxy interviews in both rounds occurred in custody cases. Since we could not interview children, all respondents in custody cases were proxies. Among movers, respondents in eight cases were duplicates, and four were proxy. Second home respondents were primarily duplicated persons (six of eight). Because proxy and nonproxy respondents are associated with different reasons for duplication, we did not believe that an analysis of proxy versus nonproxy reporting would be valuable.

Changes in Interview Procedure

One change in procedure took place during the time we were interviewing in Round 1. Originally, interviewers were not provided with information about who the duplicates were in the household, and we were tasked with finding out if we could recover this information from the household respondent. In fact, this procedure did not work well. Interviewers were not always able to concentrate extended probing on the duplicated household members

since they did not know who the duplicated persons were. It was recommended that interviewer know who the duplicated persons were and this change be carried forward, and in Round 2 interviewers knew the identities of the duplicated persons in the household.

One additional change in procedure was recommended for the second round of interviews. The rosters that were provided sometimes excluded the names of nonduplicated children in the household. Since our interview included reading the census roster to respondents, this incomplete roster made it seem that information on those children was lacking or had been lost. This had the effect of puzzling or worrying respondents, and tended to lead to a concentration on this issue rather than on the duplications. A complete household roster was included for the second round of interviews.

4.2.2 Round 2 Protocol

The protocol was rewritten for Round 2. The basic structure remained the same in eliciting possible duplications prior to introducing the census roster and following similar but separate paths for proxy and nonproxy respondents. We also discussed the census form, including the residence instructions and coverage questions, with the respondents. However, several changes were made in the way that questions were asked and in the topics that were covered.

- Question language and introductory material stressed the time of the census (since Round 2 occurred about a year after the census event). Respondents were reminded of and encouraged to think back to that time.
- Some of the questions about the respondents' experiences with the census were eliminated: we no longer asked about advertising, about contact with Census Bureau resources, and preference for mode of response.
- A series of hypothetical questions discussing possible causes for duplication for various age groups was recast. Since these hypothetical questions were not particularly productive as probes for the information we were seeking and were sometimes regarded as sensitive, these questions were asked in a more direct way in Round 2. Instead of asking about age groups, the question was structured around known situations that could cause duplication, and the respondent was asked if anyone in his or her household was in that situation. These included college dorms, children in two homes, staying somewhere else for work, vacation or second home, nursing home or retirement community, adults staying with relatives, staying to help a friend or relative, persons with no single home, military/deployed, and a general probe for other situations.
- Several cognitive probes were included for items of interest in the overcount coverage question (Question 10). These were probes for "At a seasonal or second residence" and "For child custody."
- Although the census-reported roster was read (in this round, including the entire reported household) a question about the "accuracy" of the report was eliminated.

When asked in Round 1, this question had proved sensitive, since it inadvertently suggested that respondents may have concealed information.

- A new series of questions were structured to examine periodicity in movements for members of the household. The number of stays, the usual length of the stays, the perception of pattern, and the reasons for that pattern were asked about for any household member and any location that was reported. The attempt here was to discover any natural vocabulary or concepts used by respondents to express these stays. Such natural vocabulary might be useful in drafting survey questions. In addition, respondents were asked to evaluate how difficult it was to recall this information.
- The final section included questions that asked for an assessment of where each person "lived" in 2010, and where they were staying on April 1, 2010.
- The question for convenience addresses⁵ had previously been asked only if the respondent was a duplicate. In Round 2 it was asked for each adult in the household, and was slightly reworded.
- In addition, a final probe was included for respondents who had reported, for themselves, no other places to stay.

The debriefing and demographic questions remained the same in Round 2.

Dependent Interviews in Round 2

Five dependent interviews were included in Round 2. These qualitative cases were selected after cognitive interviews with respondents at one of the addresses associated with a duplication in the census records. The cognitive interview respondent had both provided the corresponding address and given permission for the recruiter to contact a potential respondent in the other household. These second interviews with the second household are called dependent interviews. The cognitive/qualitative match was carried out in four cases. In an additional fifth case, the corresponding household was inadvertently interviewed using a second cognitive interview. These dependent interviews are discussed in the sections relevant to the particular kind of duplication involved.

4.2.3 Interview Venues

In Round 1, interviewing was carried out in three urban venues in Illinois, North Carolina, and the Washington, DC, metropolitan area. The choice of these venues in Round 1 may have had unanticipated consequences, restricting the demographic diversity of the respondents. It may also have limited the kinds of cases available, such as residence patterns particular to certain ethnic or immigrant groups. In Round 2, qualitative interviewing was again carried out in Illinois, North Carolina, and the Washington, DC, metropolitan area, however interviewers travelled further from the urban core into more

⁵ A convenience address is an address used for mail delivery and legal documents such as licenses, rather than for habitation.

suburban and rural sites. In addition, interviews were conducted in California. It was anticipated that interviewing in California would provide access to a wider range of ethnicities; however, this did not prove to be the case. Census Bureau provided lists of households that included persons identified as suspected duplicates in both rounds of interviewing.

4.2.4 Recruiting Strategies

The households from among whom our recruits were selected might either have everyone in the household duplicated or only a part of that household. Persons who were eligible to be interviewed were either duplicated adults or an adult household proxy. Federal employees were ineligible to receive incentive payments, but could be unpaid respondents. Recruiting was localized to areas in which we had the capacity to interview.

In Round 1, special emphasis was placed on transitioning seniors,⁶ young adults aged 18-29 and families with children. Families with a member in the military and adults were also included.

In Round 2, an effort was made to screen out households in which the duplication stemmed from moving from one address to another. A question was inserted into the recruiting script to deal with this situation. Recruiters were instructed to focus recruiting on children duplicated because of potential custody situations and cases that might be second homes. It was thought that second homes (especially vacation homes) might be at some distance from the other place of enumeration. Recruiters used strategies to determine if these situations might be present by looking at age and relationship data and the location of the two addresses, pinpointing likely second homes, such as those where there was some distance between the two places or popular weather or activity related advantages.

Recruiters also treated each potential dependent case as a high-priority recruit. However, because of the difficulty in recruiting dependent cases Census Bureau agreed to an additional qualitative category of “interesting” cases in California. These cases had nontraditional relationships within households or multigenerational ties on at least one side.

The issues encountered in recruiting are more thoroughly discussed in **Section 2.6** and **Chapter 6** of this report.

⁶ Transitioning seniors are adults 50-80 years old who may be duplicated due to age-related reasons such as a move related to downsizing or into an assisted living facility. Also included are seniors who may have multiple residences in order to take advantage of temperate climates (snow birds) or who live with or move between their adult children's homes.

4.3 Findings

4.3.1 How Well Did the Interview Verify Duplicates in Round 1?

This section examines the success the interview had at uncovering and resolving duplicates.

Table 4-1 summarizes whether the data provided by the respondent generally matched what would be expected from an examination of the census information about the duplicated case.

Table 4-1. Success in Verification, Round 1

Duplicate Verification	Count
Movers Identified	7
Custody Identified	8
Convenience Addresses Identified	2
GQ Stay Identified	1
Highly Mobile Person Identified	1
False Match Identified	2
Not revealed dup*	4
Total	25

*These cases are discussed further below.

It should be noted that the Group Quarters case in Round 1 involved an enumeration at an apartment facility where rehabilitation is provided. Although it is technically a housing unit, the reason for the duplication is clearly involved with the provision of health services to an elderly respondent on a temporary basis. We have included it as a "GQ" because of its underlying cause.

Interview Success in Verifying the Duplication in Round 1

Cases that were listed as "verified" are those in which the interviewer was able to collect information that helped to explain the duplicate. In making this assessment, we have compared information provided by respondents with information provided by the Census Bureau about the names, relationships, and addresses of duplicated persons. In assessing our success, we have not followed a strict standard of a perfect address-to-name match. We have used partial address information provided by the respondent, relationship data, and other cues that led to the conclusion that we had correctly identified the reason for the duplication. In a few cases, there may be room for disagreement about the match.

Cases listed as false matches in Round 1 and Round 2 are those in which nothing in the interview suggested a connection to the second household, the names or ages did not match perfectly, or relationships indicated that it was unlikely to be the same individual (e.g., if a child was listed as a biological child of two mothers, we had reason to suspect a

false match). Some judgment is involved in this assessment, and there may be room for disagreement.

Four cases are listed as not revealed dup. In these cases, interviewers either could make no assessment of what had caused the duplication, or were led to believe that the duplication resulted from another cause than the one that could be inferred by the census records. The actual nature of these cases was inferred by looking at the Census Bureau-provided data about the duplication. It is of some interest to look at the nature of these four not revealed dup cases:

- **Case 1.** An elderly woman who recalled no enumeration at all, but talked about a move she had made from a senior housing apartment into her current location. census data, however, revealed that she had apparently listed her two grandsons on a mail form and did not recall it. They were duplicated with their mother in another household.
- **Case 2.** A man insisted he had been at his location for 5 years and stayed nowhere else, but is listed at two addresses in two single person households. The interviewer notes that he appeared to have "limited mental capacity," and this respondent's remarks were often rambling and irrelevant.
- **Case 3.** A woman was listed in her own place and in another place with a man reported as "unmarried partner." The only other place the interviewer was able to elicit from this respondent was a household workplace where she had sometimes stayed overnight in the past.
- **Case 4.** A young adult who was described by her mother as staying only temporarily with her sister on occasion. This young woman was also listed at another place with a male "unmarried partner."

If these cases are typical of situations that are difficult to recover, two themes emerge. First, the capacity of the respondent to remember and report the enumeration may be limited. It is unlikely that extended probing would have resulted in better information in Cases 1 and 2. The second theme is that sometimes data might be suppressed by respondents if it is considered sensitive. It is interesting to note that a similar case, where a man is listed both with his mother and with his girlfriend, both addresses were revealed in the interview. Perhaps unmarried partners may be more sensitive for women than for men, but there is not enough data to draw this conclusion. It should also be noted that it may be the case that the respondent in Case 4 (the mother) did not have knowledge of her young adult daughter's other place to stay.

Except for one case, the information recovered about movers and custody cases is generally good, granting incomplete address information and other minor problems in reporting. It should be noted that it would be easier and more certain to confirm a match if the interviewers were provided with more complete information about the cases, including the names, addresses, and relationships on both sides of the duplication.

For the purposes of the subsequent analysis, we have recoded the Round 1 cases discussed previously into the category that represents the most likely cause of duplication. That is, **Table 4-2** represents, to the best of our ability, the underlying situation that caused the duplication regardless of whether this was recovered in the interview. The four cases that were coded as not revealed dup previously have been redistributed on the basis of the expanded data gleaned from the census records.

Table 4-2 represents only the main reason for the duplication. Other processes may have been identified as happening in the respondents' living situations or that of others in their households. Thus, we uncovered custody situations in households coded below as movers, moves in households coded custody, temporary stayers in all kinds of cases, etc. These subsidiary issues are included in the extended discussion of each type of duplication below, since they provide insight into the general processes of duplication.

Almost all of our cases in Round 1 are accounted for by either moves or custody situations. There were nearly equal numbers of cases that can be attributed to each cause—eight to moves and nine to situations in which children are listed in two places.

Table 4-2. Reason for Duplication, Round 1

Duplication Reason	Count
Movers (whole and part household)	8*
Custody	9**
GQ Stay	1
Convenience Address	2
High Mobility	3***
False Match	2
Total	25

*Includes Case 2

**Includes Case 1

***Includes Cases 3 and 4

Kinds of Duplication Not Found in Round 1

It should be noted that some kinds of situations that might have been expected to create duplicates do not appear in this data or are mentioned only tangentially. These include serial migration of immigrant families, commuter workers, duplications with GQ's, and military families, etc.

4.3.2 How Well Did the Interview Verify Duplicates in Round 2?

This section examines the success the interview had at uncovering and resolving duplicates in Round 2. The table below summarizes whether the data provided by the respondent generally matched what would be expected from an examination of the census information

about the duplicated case. We followed similar procedures in assessing a “match” as in Round 1, employing partial addresses and relationship data to affirm a match. Not revealed dups were assessed in Round 2 in the same way as in Round 1.

Interview Success in Verifying Duplicates in Round 2

The data from Round 2 included a new category labeled “second home.” Discovering such cases was a recruiting goal for this phase of the research. It should be noted here that this category included both traditional second home situations, like snowbirds travelling seasonally, and some other cases that appear to result from ongoing familial ties to more than one property. The specific nature of these cases will be discussed below, and count data are provided in **Table 4-3**. (No cases fitting the Round 1 category “highly mobile person” were identified, and it is, therefore, not included here. This category was used to describe individuals who travel between stable homes of friends and/or relatives.) In recruiting for Round 2, we attempted to screen out movers, but some cases of duplication resulting from moves remain.

Table 4-3. Success in Verification, Round 2

Duplicate Verification	Count
Movers Identified	3
Second Home Identified	6
Custody Identified	5
GQ Stay Identified	1
Convenience Addresses Identified	1
False Match Identified	2
Not revealed Dup*	7
Total	25

*Includes two cases that are probable second homes, three cases that appear to be custody cases, one case in which a proxy did not know or reveal an address for a mover, and one case that remains unclassifiable. These are discussed below.

Two cases were judged to be false matches, and seven did not collect enough data to verify the duplication. The seven “not revealed dup” cases are those in which the interviewers were unable to recover a partial address for the alternate location from the census data. However, in all but one instance, it is possible to assess the likely cause for the duplication from other information provided in the interview or that is included in the census data. The unmatched cases include

- **Case 1.** A case proxied by a relative for a now deceased elderly man, who appears to have moved to a low-income senior housing unit. This move and the connected address are not identified in our interview.

- **Case 2.** A vacation home was not revealed during the interview, although it was mentioned to the recruiter. The address of the vacation home is in a resort community, and the rosters match perfectly.
- **Case 3.** An apartment whose existence was not mentioned during the interview, but was revealed with a partial address during a follow-up phone call. (The interviewer called this respondent to verify some information he had provided earlier.) This family is connected with several properties, and several conflicting rosters for each property are offered by the respondent.
- **Case 4.** An otherwise homeless teenager was listed with a couple who took him in. The case is unconfirmed because he is also listed with his parents and brother in an apartment at a time when the interview indicated that the family had lost their home and were living with neighbors or in their car.
- **Case 5.** A custody case in which the father admitted he rostered a daughter "in error," but refused to provide address information about the child's other home, although he mentioned the correct town as the place where the child goes to school. The address is not revealed, but the custody situation is evident.
- **Case 6.** A case that appears to be a custody case: the child's mother insisted that all of her children never spend the night anywhere, but a child of the same name as one of her children is listed with a grandfather in census records.
- **Case 7.** A woman is listed at an address in a town that is in the region where she grew up, and is in a town near where she sometimes visits relatives. The address is not mentioned in the interview. She may have moved from this address, but her account of her movements indicates that she moved from this region in 2008.

In all but Case 7, a probable reason for the duplication can be established, even though complete data are lacking. The discussions below of each category include these cases in their respective categories. Cases 2 and 3 are included with "second homes"; Cases 4, 5, and 6 are with custody cases; and Case 1 is included as a "mover."

Table 4-4 indicates the main reason for duplication in Round 2, including cases recoded from evidence of the probable reason for duplication. One case remains unexplained.

Table 4-4. Reason for Duplication, Round 2

Duplication	Count
Movers	4*
Second Home	8**
Custody	8***
Group Quarters	1
Convenience Address	1
False Match	2
Not Verified Dup	1****
Total	25

*Includes Case 1

**Includes Cases 2 and 3

*** Includes Cases 4, 5, and 6

**** Includes Case 7

As **Table 4-4** indicates, the Round 2 recruiting was successful in its concentration on second home and custody cases. There were eight second home cases and eight custody cases. Four cases of movers are still included in this list, despite efforts to avoid them. One GQ case was approved by the Census Bureau, and one "convenience address" case was identified.

4.4 Discussion of Duplication in Rounds 1 and 2

This section discusses the cases where the reason for duplication could be explained, using both cases where there was a verified duplication and where we gleaned the reason for duplication from other information available in the interview. The aim is to shed some light on the social processes from which duplication may arise. In each general category, the data from Round 1 and Round 2 are discussed separately. To facilitate a general understanding of each issue, we have presented data by issue rather than by round. It should be noted that in some cases, these sections contain information derived from secondary types of mobility uncovered in the interview. For example, if a custody issue was discovered in a household codified as a mover, we may discuss the custody situation in the relevant section, even though it is not the main reason for duplication.

4.4.1 Movers (Round 1)

The following section describes the cases attributable to moving in Round 1. Six of these instances involved whole household duplications, and two involved subfamilies who moved out of the census address.

In general, these movers had changed addresses during the enumeration period. The dates that were reported for these cases range from March to June 2010, and therefore fall within

the period encompassing mail and Nonresponse Follow-Up (NRFU) operations. Respondents in other kinds of cases reported moves as late as August, which are associated with census re-contacts. **Table 4-5** shows moving dates from cases classified as movers, but the subsequent discussion includes other enumeration stories collected in our interviews.

Table 4-5. Movers Duplication (Round 1)

Movers			
	Move Date	Whole Household	Subfamily
	Before April 1	2	0
	Exactly April 1	2	0
	After April 1	1	2
	Unknown	1	0
	Total	6	2

Sometimes there is a lack of clarity associated with move dates, which were occasionally reported differently during the course of the interview. Thus, "April sometime" may morph into "mid April" and eventually into a specific date. This may be due to increased processing as a result of repeated probing.

It should be noted that, over the two Rounds, 12 of the 50 cases were accounted for by moves, even though we attempted to screen them out in Round 2. We observed several reasons for why moving appears to create so many duplicates. Essentially, such duplicates occur because respondents are asked to provide data for both locations, using both Mail Out/Mail Back (MOMB) mode and enumerator contacts.⁷

In this data, stories of multiple contacts with Census Bureau personnel are more common among cases with movers than other types of cases. They range from a normal report of two contacts (one at each address) to a maximum of five contacts. Most of the instances can probably be accounted for by normal procedures (i.e., accounting for vacant housing units, NRFU enumerations for late returns of the mail form, or other verification procedures).

It is possible that moving into vacant units creates some of these re-contacts. Some respondents knew that the units into which they had moved were vacant for a period of time, either because the unit had not been rented or sold for some time, or it was not in a

⁷ We attempted to reconcile the Census Bureau's list of contacts with respondent accounts of these contacts; however, this proved impossible to do. The number of contacts, and sometimes the mode of contact, did not necessarily match in the two sets of data. In short, it is difficult to completely resolve these stories of multiple contacts with the census-provided data.

condition to be occupied. A NRFU visit could be expected in these circumstances. For example, one respondent who moved in May reported that she had found a MOMB form in her new mailbox, suggesting that no response was listed for that address. She knew not to send the form in, but was contacted a few weeks later by a NRFU interviewer, creating a duplication of her entire household.

The respondents did not know and thus were unable to report on the exact purpose of these contacts. Respondents' version of events is that they were asked the same series of questions in all of the contacts and regard them as re-enumerations. It is interesting that in three moves that caused duplications and an additional two moves discussed in other kinds of cases, the date of the move was reported as occurring after April 1.

The correct enumeration place in these five moves should have been clear. Most of the movers, either before or after April 1, reported telling the subsequent census enumerators about the date of their move. Respondents reported that enumerators told them that they needed to report the information anyway, to represent their new areas. As one woman put it, the old information "didn't have anything to do with" her new community. Since people understand that census data is used to characterize localities, this was a powerful and acceptable argument for them, and they readily provided data again. Only in one instance did a respondent tell us about a contact with a census person who accepted his assurance that he had moved well after April 1, and in this case, he reported several other contacts in his new address who re-enumerated his household. Considering the ease with which we were able to elicit information about moves in this data, it seems likely that the respondents' reports of providing this information to subsequent enumerators are accurate. If it is true that the respondents offered their move dates to subsequent census contacts, it seems that in some cases, census enumerators did not follow proper procedure, thus creating duplicates.

Some questions may be raised about the accuracy of the respondents' memories for what they told the enumerators when they were re-interviewed. In general, the detail and accuracy of some of these accounts leads us to credit their stories. Nevertheless, in some cases, this memory may in fact be inaccurate. However, considering our success in eliciting details about moves from these respondents, it seems likely that if the enumerators did not find out about the date of the moves, they probably weren't asking for the data. This may indicate procedural or training issues that warrant further research.

There may also be some difficulty with the wording or content of the question on the enumerator form that seeks to determine whether the household living there currently was

also living there on April 1.⁸ It is a complex question. It includes burden and confidentiality information, requires the respondent to be looking at an Information Sheet, and simultaneously asks, "Did you or anyone else in this household live or stay here on April 1, 2010?" Despite the multiple memory and attention load of this part of the interview, it should be pointed out that the single word "here" is what carries the meaning that the respondent should concentrate on a single location. Since the word "household" is often taken by our respondents as meaning the social household (defined by interpersonal ties), it would not be surprising if some respondents who had moved, missed the implication of the word "here." Respondents could be simply reporting that the social household was intact on April 1, 2010.

Respondents' errors also account for some instances of duplication. Respondents sometimes reported sending in a form from their old address even when they were aware that they would not be there on April 1. This was facilitated by the belief that they were reporting for a social household, rather than an address. For example, one family moved on March 20, but the household respondent crossed out the old address and wrote in the address of the new residence, because she knew that was where the family was going to be located on April 1. (Currently, there is no clerical operation at the Census Bureau to discover this.)

Moving can be a nonunitary event, which may also facilitate duplications. There are some cases in which respondents reported an overlap between one household and another. For example, one family described continuing to rent an apartment for 6 weeks after the purchase of their house. In this instance, the husband returned a mail form from the first address, and the wife talked to a NRFU enumerator at the second (it's not clear why she is the only duplicate, however). In addition, foreclosures occur over very long periods of time. Although his case was coded as a custody issue, one man told us of being coincidentally present in his foreclosed house at the time when a NRFU enumerator happened to show up. He told the enumerator that he was just there to move some of his things, but the enumerator pressed him for information anyway, which he later provided over the phone.

4.4.2 Cueing for Movers (Round 1)

This section describes the elements of the protocol that were productive in eliciting information about moves from respondents. In many cases, the relevant information was not retrieved at the intended protocol question, but emerged in response to other questions or explanatory material in the protocol. The aim of this analysis is to examine the usefulness of various sections of the protocol in eliciting project relevant information from respondents. It is of interest to note where the relevant information emerged, as it may provide insight into useful strategies to guide respondents' recall. We have called this analysis "cueing."

⁸ 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?

Subsequent sections present accounts of effective cues for each of the main categories of duplication, where they are relevant.⁹

The first question in the Round 1 Protocol was, "What comes to your mind when you think about the census?" On occasion this question elicited information about moves or movers out of the household. For example, after mentioning social services and genealogical research, one respondent mentioned the daughter who was identified as the duplicate: "What I thought was interesting was that this was April 1, 2010, and I knew my daughter was living with me, and she was going to move into her father's home because he was moving up to [X] with his new wife, and I knew a month after the census the information would change."

The second question in this series was "Tell me about your experience with the census in 2010." Respondents who had moved or had multiple contacts often produced that information in response to this question. On the basis of this evidence, in general, stories about moving emerged early.

These questions do not appear in the Round 2 protocol, in part, because movers were intended to be excluded from Round 2.

4.4.3 Movers (Round 2)

Because the Census Bureau had asked us to concentrate on other kinds of cases for Round 2, during the recruitment process a screener was employed to eliminate cases in which the duplication resulted from a move. Nevertheless, four cases that can be attributed to moves were identified. It should be noted that, because we tried to screen out movers in Round 2, the cases that remain may have been different than those purposefully recruited in Round 1.

Two of the cases are instances of whole household moves around the time of the census. It is difficult to account for their inclusion in this study if the screener was answered accurately by the respondent.

The screener would not have worked to identify the other two cases of movers. One respondent was a proxy for a deceased relative, and apparently lacked knowledge of the living circumstances of the elderly man for whom he had provided help in filling out his census form. The address of the low-income senior housing development where the elderly gentleman is duplicated was not recovered during the interview. In the other instance, a daughter and her new husband (both residents in the respondent's home on April 1) moved

⁹ The analysis of cueing is not intended to be limited only to information which was later found to be critical to the case-specific duplication; rather it is intended to demonstrate cues that were successful in generating discussions of situations that may cause duplication wherever they are discussed.

out of the parent's house. If the recruiter's question about moving was interpreted to mean the respondent (the parent) moving herself, she might have answered in the negative; no one in her current household had moved. In addition, the move was reported to occur well after the date of the census, in November of 2010.

Because these moves were not the main focus of interest in this round of research, we did not collect as much detailed data about the circumstances of the dual enumerations as in the first phase of research. Such stories still exist. In some cases, dual enumerations were still associated with moves around the time of the census. In one instance, the respondent's family moved into a new house on April 1, and in the other instance, they moved on May 3, shortly after closing on a new house. In the latter instance, the respondents recalled an enumerator asking for the data a second time, despite assurances that they had been elsewhere on April 1. This case is similar to the cases we identified in Round 1. In the other instance of an April move, the respondent had no memory of a second enumeration, although apparently it occurred. It is possible that her husband was the respondent for the second data collection. (This possibility was thought unlikely by the respondent, who did not believe her husband would have bothered.)

It should be noted that we did not collect any instances of more than two contacts, as before. That is, respondents don't report more than two enumerations, and there appears to be considerably less certainty about them. It appears that the memory for these contacts has become weaker with the passage of time.

4.4.4 Memory for Enumerations for Movers (Round 2)

Because moves were not a focus of research in Round 2, we did not systematically collect memories of enumerations from respondents. However, such memories were offered across the spectrum of cases. They are presented here as a comparison with enumeration stories collected in Round 1.

We noted that unless something peculiar happened during an enumerator visit, the respondent's memory of the enumeration had become, after a year had passed, rather foggy. Thus, two respondents indicated recalling the enumeration because of perceived misbehavior of the enumerators. One thought that the person who interviewed her was "rude." Another thought that it was "unprofessional" for the enumerator to have her boyfriend in the car and not show a badge. Some elderly respondents had no memory of the enumeration at all. Other respondents tended to remember that they had responded, but were uncertain of the details. Although they usually could recall the first response, they were not certain when or where the second enumeration happened, if they sent in two forms or one, or whether they filled out a form or answered questions for someone. We also noted that in some instances the memory for these events appeared to be changeable during the course of the interview. Thus, one respondent who had recently established a

second home could not recall another census form or an enumerator, and was mystified that only her name and not those of her children appeared on the census roster. After discussing this for a while, however, she began to think that maybe she had filled out a second form. This shift in memory may have resulted from suggestion during the interview. Since this second census report may have been filled by proxy, the possibility should be kept open that her initial recall for the events was correct. That is, a neighbor or someone else with access to the respondent's address information may have provided answers for the second enumeration, and the respondent would be unaware of this fact.

There is also evidence that respondents did not recall the content of the census questionnaire very well. Some movers in Round 2 may now have the impression that they were being asked to choose which place to list themselves. For example, some respondents incorrectly recalled that there was a place to fill in an address on the census form. (This may also have been driven by the context of our interview.) This is an example of this thought:

R: [The enumerator] came to this location [Side A.] I think that was part of the confusion. I didn't know whether to use the [Side B address] or this address since I was in the process of purchasing the house...I know that was my concern because I was in the middle of moving, and it was like should I put the [Side B address] or this address.

It should be noted that this response indicates a willingness to provide alternate addresses during the enumeration. If respondents had the opportunity to offer address information for both locations and date information for moves during the process of enumeration, the number of duplications because of moving could be potentially limited. Capturing this data during the decennial census would help to limit the need for recontact at a later date.

4.4.5 Cueing for Movers (Round 2)

Because we had not anticipated movers in this round of interviews, no specific probes were included in the Round 2 protocol to elicit this information. Nevertheless, discussions of moves were generally easy to elicit. They tended to come out in questions asked early in the interview, which focused on respondents' census experience. In particular, moves are elicited in this protocol in the question that asks about where the person was located on April 1:

I: Where were you living at the time of the census, on April 1, 2010?

R: [Answers with Side B address]...I closed on this house on April 17... I was in the process of moving.

The early questions about the census in general and where respondents were living on April 1 also worked to elicit snowbirds' accounts of their movements, a move to a dual residence for work, and the description of the living situation at an independent living facility, etc.

4.4.6 Privacy Issues for Movers

Although in general moves are the least sensitive residence situation among those we studied, some indications from data in Round 1 indicate that the loss of a home may be sensitive issues.

A few respondents mentioned foreclosed homes or losing apartments due to job loss. Although they told us this about it in a matter-of-fact way, these circumstances appeared to have an effect on how respondents answered our questions. For example, the loss of job and apartment became the lens through which one respondent saw all of our hypothetical questions. He mentioned people who had to "float" from one relative to another several times in response to this series of questions. Another respondent told us that he was currently in bankruptcy, but reported to us that his income was in the highest category. It is not clear if this was another reference to past times, or if it was a convenient untruth. This respondent's reactions seemed to be attempts to present himself in the best possible light.

4.4.7 Custody Issues (Round 1)

Another important reason for duplication includes issues surrounding children or young adults who shift residence between guardians or who maintain presence in both households. Nine cases were coded as custody using both the respondent's account and census data.¹⁰ We are including some persons who are over 18 if they were reported as staying with two parents. Most of the nine custody cases are children who have connections with the households of two parents. However, in three cases, the other relative is a grandparent. In two of these three cases, the grandchildren were reported as actually living with the grandparent. The third case may have been a confused elderly grandparent who did not have actual custody of the children and listed them for unknown reasons.

The child's connection with another household was often not mentioned at the beginning of the interview and only emerged later. When a parent has legal custody, they tend to report that the child "lives" with them, and it is only upon repeated probing that the child's other residence emerges. In **Section 4-5**, we report the cues that seemed effective in eliciting this information. We did not always determine which parent had legal custody. This question was thought to be sensitive and was not included in the protocol. However, legal custody was sometimes mentioned by parents when describing the living situation of the child.

¹⁰ In this description, we are including as "custody" all cases where children and young adults are listed as having dual residence with any category of relative. This practice was not followed in the cognitive accounting, where only parents are included.

It is our impression that the parent who has legal custody will always claim the child, despite sometimes substantial amounts of time spent at the other parent's residence. One father whose teenage son had spent increasing amounts of time with his mother around the time of the census had no hesitation in saying that his son lived with him because "I think I have custody." Other custodial parents use the terms "primary custody" and "physical custody" to describe what they consider to be the child's main parental relationship.

Parents who regard themselves as the child's primary custodian often assume that the other parent did not list the child, or would not answer the census at all. One such mother, whose child spent 50% of his time with his father, said that she had automatically listed the child because she was "almost 98% sure that he probably did not fill it out..." She based this on a perceived pattern of "not taking care of the important things." (In this case, she was likely not considering the persistence of census enumerators. The Side B enumeration was NRFU indicating that the father had not returned the initial census form.)

Children who have connections with both parents often have rooms and belongings in both places, and may spend large amounts of time with both parents. The child's location on April 1 is completely immaterial to most respondents, since the child is understood to live in both places. Respondents think it is perfectly possible to live in two places. After our discussion of, "having two places to live" one respondent turned to the interviewer and asked, with considerable curiosity, "is that a *problem*?"

In other cases, the child has recently moved or is about to move, and is listed in both places. The actual timing of these moves does not appear to match census rules, in that respondents are not using April 1 as a critical date. Thus, in one case, a young woman was reported as intending to move with her father's family to another location, and was visiting frequently before this move. (We believe she was listed as "other relative" in the father's household because Person 1 was a relative of the father's fiancée.) We noted another case in which a formal move was preceded by what was described as an increasing presence in the household of the second parent before the move. This parent complained that it was impossible to tell a teenager what to do. We suggest that increased informal presence may be a common pattern prior to a formal move for persons in this age group and that even the distinction between formal and informal habitation is blurred.

In another instance, two girls were listed at their grandparent's residence, from which they had moved several months before the census. Since these children were described as moving to a relative's home "to go to school" it is not clear whether the grandparents had legal custody or expected the children to return. In another instance, a man listed his son, despite the fact that he had "terminated parental rights" at least a year earlier. In the latter case, the respondent was attempting to assert credit for his parental contribution over the 10 year period between censuses. Perhaps a misunderstanding of the reference period may

have triggered the misenumeration by census standards in these cases. (The census applies to a person's location during the year in which the census is taken. Prior relationships or households are irrelevant.)

It is interesting to note that in our data, the respondent sometimes mentioned discussing where to enumerate the child with the other parent at the time of the census. One father reported that he had discussed the enumeration with his child's mother, and told her not to list the child. In this case, the respondent apparently believed that she had not listed the child, but she evidently had, because the child was duplicated. In other instances, the agreement apparently held. For example, the following is from a case listed as a mover (the child was not duplicated):

R: My son. His momma put it on hers...

I: Did you discuss the census with her?

R: Did I? I think I asked her if she going to put him on hers so I didn't put him on mine...I just called her to say you going to put him on your census or mine. She says I'll put him on mine. It was not a big deal.

These discussions are of interest in two ways. First, discussions such as the one described previously between parents are not reported as being particularly sensitive. (However, Round 2 data, particularly the dependent custody cases, indicate that custody situations are often sensitive, perhaps especially to discuss with an outsider.) Second, any single respondent really has no way of confirming whether the other party did or did not list the child.

Respondents suggested various reasons for listing a child who was not actually in their custody. These included establishing a basis for getting benefits or for claiming the child as a dependent on tax returns.

These reasons might not have anything to do with the actual residence status of the child.

4.4.8 Cueing for Custody (Round 1)

The main series of questions to elicit residence situations in Round 1 was a list of probes about what might cause duplication or omission for various age categories of people (Adults, teenagers, children or babies, senior citizens.) Respondents were asked if they knew of such situations from their own households or about others. The success of this set of hypotheticals in general is discussed in **Section 4.7.1**.

There were a few instances in which these questions elicited the first mention of custody issues by respondents. It is our impression that this may be from introducing the idea of having more than one place to live. Nothing prior to this section of the Round 1 protocol

provides this information, and for many parents, children with other household ties quite simply "live" with them. After the idea was introduced, it could take the respondent a while to get used to it. This sequence, from a mother whose child was with his father 50% of the time, is a useful illustration:

I: (Q.13.) For instance, they might be listed in two different places, like at home and in a college dormitory, or at a primary home and also with a relative or friend. Do any situations like that apply to you or your family?

R: No, absolutely not, both my children live here with me, and my daughter's yet to be in college. (R answers a quick "no" Question 14.)

I. (Q15.) What about teenagers? Do you know of any situations where they might be counted twice?

R: I guess that would be the only situation; maybe if they, it would probably be the situation with me and my son and his father. Because he stays with him half the time too, so I count him, and if maybe he fills out a census form, he will count him as well. But I can see how that would happen.

The child is actually in grade school, so it is unlikely that the mention of "teenager" was what cued this response. It appears to be the repetition of the cue about having more than one place and being counted twice that elicits this information, despite her (incorrect) certainty that the child was not counted twice. In this and several other cases, the first mention of a child or teenager's alternate place of residence occurs in this sequence of questions.

The omissions question ("Sometimes people are left off the census, either on purpose or by accident...") also elicited discussion of children in custody. In one case, a respondent first mentioned her fiancé's other child here, who "resides with his mother." This child was the duplicate, but the respondent did not recall listing him in the census and was subsequently surprised when he was among the persons listed on the roster.

We concluded that the concept of two places to live, and possibly even double counting, may be necessary to cue to relevant information about custody cases. Questions to do this were included in the Round 2 protocol and are discussed below.

4.4.9 Custody Issues (Round 2)

Eight custody cases were identified in Round 2. They include a variety of different relationship patterns. Three were divorced parents, three involved grandparents and a grandchild, one involved two sisters, and one case involved nonrelated people who took in a homeless teenager for 2 years.

The cases are evenly split between what we have termed formal custody (four cases) and informal custody (four cases). Formal custody appears to arise from an agreement about

the child's living arrangements. In the cases we have classified as informal custody, as far as we can tell, the child's presence in one of the households is not subject to any regular agreement, such as would be provided in a divorce decree.

The formal custody cases tend to be associated with parents (three cases), but in one case, a grandparent told us that she had "guardianship" over the child.

In these cases, it is relatively easy to elicit a pattern for where a child lives and how much time the child is supposed to spend at that place. Some respondents told us about legal agreements such as, "spring break, summer, and every other holiday," which had been ordered in court. In another instance, a father recited the expected pattern, even though it indicated an error in his roster:

R: My oldest, my daughter, I have her every other weekend. She lives with her mother primarily...I put her on my form. She stays with her mother; I guess you'd call her the primary caregiver. She's staying with her mother, but I get her every other weekend and a week in the summer. I'm pretty sure she put her down...My daughter has a toothbrush; she has clothes; she has everything she needs at my house...

This respondent also listed this daughter as "living" with him in 2010. It is interesting to note that this case is listed as a not revealed dup because the respondent did not provide an adequate address, although the town in which the child goes to school was mentioned and corresponds with the mother's address. There appears to have been some sensitivity attached to the situation, possibly because the respondent had unsuccessfully attempted to get joint custody in the past.

Respondents are also able to tell us about situations in which the formal custody agreement is not kept. For example, one mother told us that her daughter was supposed to go to her father's house every other weekend, but in fact went about once a month: "He just didn't pick her up or something was going on at school; activity at school."

The informal custody cases are ones in which there appear to have been no court ordered agreement. They tend to be associated with relatives other than ex-spouses, such as grandparents and siblings, or in one case, nonrelatives. The respondents in these cases indicated that the children were often involved in complex and sometimes difficult family situations. Two such cases are described in detail below, to provide a sense of these complex custody situations.

One child had lived with his father at his grandmother's house, but when the father remarried, the child remained with the grandmother. This was explained in several ways: that the child needed to finish the school year (but remained long beyond that), and that the remarriage was emotionally difficult for the child. The grandmother indicated that she thought the father "had custody" of the child (although he lived with her) and frequently

reiterated that the child "should" be with his father. It is interesting that although the child's visits to his father were easily revealed, the respondent did not mention until the very end of the interview that the child also visited his mother every other weekend. It is impossible to assess the specifics, but clearly the child's custody situation is driven by a complex set of family relationships.

Because the family relationships were so prominent in these cases, it may be that the child's living arrangements were more flexible and changeable than the court ordered ones.

Another good example was a very young child who was listed both with her aunt and with her mother. The child's mother was described as a difficult individual, who chose not to raise the child from birth until age 4. She was reported as "trying to take over now." The respondent's family was trying to support the current attempts of the child's mother to take more responsibility, and had never tried to legalize their custody. This is the reason that the child's situation remained in flux:

... We didn't have custody over her. She would just take her, take her whenever she wanted her back...she can just go, if she can grab her and take her whenever she wants; we have no nothing, no legal, no custody...

Apparently, these erratic movements of the child from one household to another were sometimes cued by the child's mother becoming angry with her relatives: "Or when she'd get mad, she'd come and take her with her, you know." At other times, the mother dropped the child off, ostensibly for brief babysitting and would not return for some days. Recently, the child's mother obtained Section 8 housing, and the child is required to live with her. The child's living situation is said to be changing somewhat, although the child still has a continued irregular presence in the aunt's household.

The presumption may also be that if no legal process has taken place, "custody" remains with the child's parent. An example is the father in the first case above, who apparently listed his son as living with him, despite the fact that the child had stayed with the grandmother for over 2 years. This also seems to have been the case when mothers in informal custody arrangements claim children who had been fostered by grandparents or siblings, in some cases for years.

In only one case did the informal custody arrangement involve nonrelatives. This was a case in which a teenage boy was taken in by a couple at the request of their niece, who was friends with the boy. The boy's family had lost their apartment and were said to live with other neighbors, with church members, and in their car. The respondent described the situation in these terms: "[He] was like a foster son, it wasn't legal. His parents knew he was there. He was homeless, and we took him in." He stayed over a year. The parents apparently told the couple to list the boy on their taxes, which is as close to formal as the agreement got. This case is unconfirmed because no address was reported for the boy's

family, who were homeless and possibly living in their car. (The Side B enumeration appears to show the boy's family intact, by themselves and not living with neighbors. It seems likely that this was their former address.)

Another unconfirmed case should be mentioned. In this case, a child is reported as living full time with his mother, and never even spending a single night away. A child with the same name and age is reported on a roster with a grandfather, living relatively near the child's home. Not enough information exists to explain this duplication. However, the insistence of the mother that no one in her household (herself and three children) ever went anyplace, for any length of time, on any occasion, may indicate suppression of information. It should be noted that this mother had chosen to give her children her maiden name, and denied that the children had any connection with their father. It may be the case that reporting any other connections to father's relatives was regarded as sensitive.

4.4.10 Dependent Custody Cases (Round 2)

The discussion given in the previous section is taken entirely from information collected in the qualitative interview. The cases appear to make sense, taken on their own, and interviewers occasionally remarked that the answers given were self-consistent and believable or that the respondent answers were quick and confident. There are three instances in which the same custody situation was examined in two interviews. The first interview in each situation was a cognitive case. The subsequent dependent interview used the qualitative protocol in two of these situations. In the third situation, the dependent interview used a second cognitive protocol. It is, therefore, of some interest to compare the data that are provided in the dependent interviews about custody situations with data given in the initial cognitive interviews. These three comparisons will be discussed here.

It is interesting to note that the three cases are "verified" in the sense that the address of the other place is revealed in the interviews on both sides, and the identity of the duplicate child is agreed upon. Beyond that, however, great differences emerge in the account of the circumstances surrounding the time spent in the two places. The situations include the following:

First situation:

- **Dependent Qualitative Interview.** A father who described a teenage daughter as living with him and spending holidays and vacations with her biological mother. This was said to be a court-agreed custody.
- **Cognitive Interview.** The child's mother indicated that the daughter "moved back" to live with her in March 2010 and lived at that address for the remainder of the year. This respondent appeared to be rather emotional over the question of custody as the result of some undefined "incident."

Second situation:

- **Dependent Qualitative Interview.** A grandmother reported having "guardianship" of her granddaughter, and said that the child travelled to another state to visit her mother for 1 or 2 weekends a year. The interviewer remarked that no memory issues were apparent.
- **Cognitive Interview.** The mother reported the daughter as living with her, but spent the summer with her grandmother.

Third situation:

- **Dependent Cognitive Interview.** The child's mother reported that the children lived with her in 2010 and occasionally visited their grandmother at the other address. She did not report herself as having any presence in that household. In addition, she reported that the children visited their father at a third address.
- **Cognitive Interview.** A grandmother listed her daughter and her daughter's two children as living with her for all of 2010. She indicated that they had very recently moved to a new home in May 2011. The children are not reported as visiting their father.

It is remarkable that, despite the seemingly self-consistency and apparent openness of these respondents, wide areas of disagreement remain. On the basis of these conflicting reports it would be impossible to estimate the proper enumeration for the child. Despite achieving a relatively good match between the households involved, the proper April 1 residency of the children in custody cannot be determined, and the duplication cannot be fully resolved.

In these data, respondents are skilled at creating a complete and self-consistent story describing the custody of children, which is not interrupted by extended probing. It might have been expected that the qualitative protocol, with more flexibility and opportunity for extended probing, would have provided more of a clue to the correct enumeration, but this does not appear to be the case.

The reasons for these substantial disagreements cannot be determined with any accuracy. Although it is not possible to determine the reasons for these duplications, we note the tendency of all custodial relatives to "claim" the child's presence when reporting on their living situations. We suspect that parents (or guardians) may be reporting the way they think the situation should be, or want the situation to appear publicly, instead of the way that it is. It is not possible to tell which side of the story is accurate, or if the truth lies somewhere in between. This highlights the difficulty with correctly enumerating children in dual custody. Even if a report appears reasonable, we have no way of judging its accuracy.

4.4.11 Privacy Issues Surrounding Custody (Round 1 and Round 2)

It was anticipated that the issue of child custody would present a potentially sensitive topic for discussion in these interviews. This section describes evidence for the sensitivity of custody issues in both rounds of interviewing.

Sensitivity can be expressed directly by respondents, when they tell an interviewer that they don't like a question, when they refuse to provide data, or when they appear or sound uncomfortable with the questions. This occurs in a small number of cases, however, other indirect evidence of sensitivity may be more significant in these data. Respondents tended to indicate their discomfort with questions about custody by suppressing data, rather than by direct complaint. The dependent data in Round 2 is particularly useful in assessing this indirect expression privacy concerns surrounding custody.

Directly Expressed Sensitivity. Direct expressions of sensitivity are relatively rare in discussions of custody, both in Round 1 and Round 2. In Round 1, direct refusal to provide information did not occur and we did not hear specific complaints about the sensitivity of questions about custody. Reluctance to provide data may also be indicated by delaying discussion of the circumstances of the custody arrangement. In Round 1, a respondent who had "terminated parental rights" for a child, eventually provided this information towards the end of the interview, when we probed for specific information about when his child had moved. In Round 2, we encountered only one case in which the respondent refused to provide information because of the sensitivity of a custody situation. In this instance, a father seemed to find the circumstances of his daughter's custody too upsetting to talk about, and he refused to provide further information about her movements.¹¹

Indirect Indications of Sensitivity. Other indications of possible sensitivity must be inferred from the nature of the relationships being discussed by the respondent. In Round 1, we heard of instances that indicated that there might be a sensitive story behind the location of a child, such as the grandmother who indicated that her grandson was with her for long periods of time while his mother "got herself together" or a grandmother in Round 2 who reiterated that her grandson "should" live with his father, although he lived with her. In these instances, the difficult relationships did not seem to influence reporting of the children's living circumstances,

Sensitivity may also be inferred from an additional pattern, evident in Round 2 dependent custody cases. The dependent cases indicate considerable disagreement between the two households about the child's situation, which may be evidence for some unreported conflict or difficulty which renders the issue sensitive. The self-consistency of the responses and the

¹¹ A mother in a cognitive case matched with a dependent qualitative custody case was also described as being "emotional" about custody, as a result of some undefined "incident."

divergent reporting in the dependent custody cases can be seen as evidence of an indirect refusal to provide some or all facts about the child's circumstances.

In Round 2, an additional case may have involved suppression of data: in this case a single mother did not reveal any movements at all for any of her children, although the duplicated child was listed with a grandfather. She had not mentioned any connection with her children's' father. The sensitivity here may reflect a single mother's disinclination to discuss the paternal relatives of her child.

Although this cannot be confirmed through internal evidence, it is likely that the most prominent response to the perceived sensitivity of custody issues was to suppress evidence of the child's movements in whole or in part. This is a tentative conclusion, as a result of the small number of cases available.

In three of the dependent custody cases, a mother is one of the respondents. It may be emotionally difficult for mothers to report that their children do not live with them most of the time, but there is no clear evidence that their reports are less factual than those of the opposite side. The observable pattern was for the household being interviewed to "claim" the membership of the mobile person. The pattern of "claiming" was also evident for certain other relatives as well, such as a dependent case involving a mother "between" two of her daughter's homes. It seems possible that "claiming" the presence of a relative may be part of a more general pattern of suppressing information, or an attempt to avoid discussing difficult custody or family situations as part of an impersonal interview.

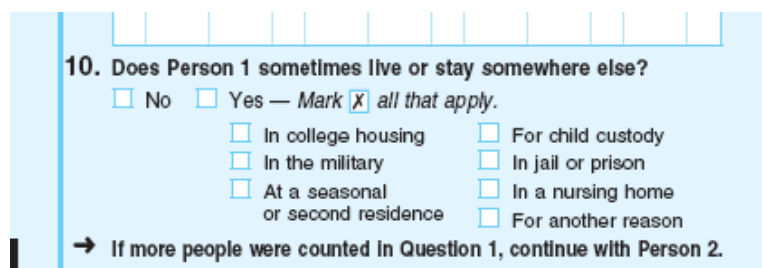
It is difficult to recognize such patterns of suppressed data where there is no corresponding dependent case to indicate that they exist. Round 1 custody cases appear to be straight forward, and not overly sensitive; but it is possible that these respondents were creating the same kind of accounts that characterize the dependent cases.

It also seems possible that suppression of data may account for some additional unconfirmed cases. In Round 1, two cases where addresses could not be confirmed for the duplication may represent instances where the location of an unmarried partner was suppressed. In Round 2, suppression of data may have occurred when a vacation home was mentioned to a recruiter, but not to the interviewer. It is also possible that respondents who did not mention living in certain economically shared properties may have been suppressing this data for some reason. These cases are mentioned here to point out that the suppression phenomenon may not be exclusively connected with custody issues. We lack the data to assess it in other residence situations.

4.4.12 Cognitive Probes for Custody Issues (Round 2)

The Round 2 protocol introduced a question about the meaning of the answer category used in the overcount coverage question, Question 10. This was designed to elicit the meaning of the phrase "for child custody" in the coverage question's answer categories. The question was asked of all respondents and not just those involved in custody situations. Respondents who were involved in custody situations sometimes used these probes to refer to their own situations. However, we noted no systematic differences between the meanings applied to the terms between these respondents and respondents in other kinds of residence situations.

Question 10 reads:



10. Does Person 1 sometimes live or stay somewhere else?
 No Yes — Mark all that apply.
 In college housing For child custody
 In the military In jail or prison
 At a seasonal or second residence In a nursing home
 For another reason
→ If more people were counted in Question 1, continue with Person 2.

Cognitive probes were asked about the meaning of the category, "For child custody."

Two approaches to this category were evident: (1) interpreting custody as a legal arrangement and (2) as a place where the child is cared for most of the time. Respondents who see custody as a legal arrangement usually mentioned agreements made in court after a divorce. They tended to see them as a contentious process, as did the respondent who described custody as a situation in which the child "goes back and forth in a battle." Other respondents mentioned children whose custody is arranged by the government, through child protective services agencies.

Some respondents think of custody as brief stays that are legally awarded, such as summer or vacations and holidays. These brief stays were regarded as "child custody" just as much as the parent who had been awarded the larger share of time. This kind of definition of "child custody" may have encouraged some parents to list children on their census form who are not at that residence most of the time.

For other respondents, custody is largely a matter of where the child is located. Some respondents defined "for child custody" in terms of the time spent in various places; for example, "the person a child lives with most of the time." Another strategy was to define custody in terms of care giving, for example, using terms such as "main custodial parent," "primary care giver," and "primary place to live."

The term "physical custody" sometimes arises in this context; this term was also noted in Round 1. It generally appeared to be related to the "location" strategy, indicating the place where the child is cared for most. However, the meaning of "physical custody" is ambiguous. For at least one respondent it appeared to indicate a legal connotation. The term "physical custody" might be useful in some contexts, but needs to be investigated further.

We also noted that the questionnaire context of the term "for child custody" created confusion for some respondents. Because we interviewed respondents using the first page of the questionnaire, Question 10 is asked about Person 1. This made it relevant to the adult filling out the questionnaire. As a result, some respondents struggled to come up with definitions that would make "for child custody" relevant to an adult. This elicited the idea that a parent might move somewhere to be near a child in custody, or perhaps even that a court might insist on the parent's presence in a particular place. These definitions do not appear to be natural, and appear to be the result of the interview context. It is unlikely that they would arise if the cognitive probe was used when Question 10 was asked about a child. However, it probably accounts for the sense that some respondents noted that there was something odd or unusual about the phrase "for child custody."

4.4.13 Cueing for Custody Situations (Round 2)

A series of probes were included in the Round 2 protocol to elicit information about residence situations. The general success of these probes is described in **Section 4.7.2**. The cues included a wide variety of situations that might cause a person to have more than one place to live or stay. The specific cue for custody situations was "14b. Any children or young adults who spend time in two relatives' homes, like a father's and mother's or a parent's and grandparent's?" The complete set of cues was the following:

- 14a. Anyone who spent time both at home and in a college dorm?
- 14b. Any children or young adults who spend time in two relatives' homes, like a father's and mother's or a parent's and grandparent's?
- 14c. Anyone who stays somewhere else for work?
- 14d. Anyone who has a vacation or second home, like a place they go for the summer or winter, or even for weekends?
- 14e. Anyone who spent a lot of time around the Census in a facility like a nursing home? Or in a retirement community?
- 14f. Anyone who spends a long time with different relatives, like an older person staying with adult children?
- 14g. Anyone staying with relatives or friends to help them, for any reason?
- 14h. Anyone who has no single place to live, but stays with different friends or relatives at different times?
- 14i. Anyone who stayed somewhere because they are in the military or are deployed?
- 14j. Anyone else who stayed somewhere else for an extended period during the spring or summer of last year, 2010?

Although the intended custody cue (14b) was used in four cases, this was not the only cue that was used. Custody situations also emerged in other cues. The cue for second homes ("14d. Anyone who has a vacation or second home, like a place they go for the summer or winter, or even for weekends?") was productive in this respect, as was the final catch-all cue ("14j. Anyone else who stayed somewhere else for an extended period during the spring or summer of last year, 2010?"). The cue intended to find homeless persons at 14h ("Anyone who has no single place to live, but stays with different friends or relatives at different times?") was used for a homeless teenager being fostered for more than a year by an unrelated household. In addition, the first mention of a custody situation could occur at the explanatory paragraph before the question series, which stresses "having more than one place to live or stay."

It should be noted that the custody cue (14b) could be misinterpreted to bring in irrelevant situations. One respondent used this cue to describe the visits of residents of an independent living facility to their parents' and siblings' homes. It is likely that this is cued by the mention of kin terms (father, mother, parents, grandparents) in the wording of the cue.

There is some evidence that the cues worked cumulatively to alter some respondents' assumption that the concept of two places to live did not apply to children living with them. For example, one respondent answered "No" quite clearly after the suggestion in the introduction that people may have two places to live. However, when she heard the custody cue, she responded positively. Evidence of the cumulative effect of the cues can be seen in a case where a respondent backtracked to include a custody situation after initially denying that it applied to her (at 14b). In fact, she did not respond positively until 14f, which is about adults staying with other relatives, but she indicated that she was really answering for 14d, the second home cue. Here is the sequence, somewhat abbreviated:

14b: Any children or young adults who spend time in two relatives' homes, like a father's and mother's or a parent's and grandparent's?"

(Answer) No...

14d. Anyone who has a vacation or second home, like a place they go for the summer or winter, or even for weekends?

(Answer) No...

14f: Anyone who spends a long time with different relatives, like an older person staying with adult children?

(Answer) No, but if we can go back two questions, did anyone spend the weekend. My daughter spent the weekend a couple of times with her dad last year. I'm sorry.

The wording of the second home question at 14d includes the term "weekends." This appears to have been the relevant cue for the respondent quoted previously.

We conclude that the custody cue by itself is insufficient to elicit all custody cases, and that extended cueing may be necessary to find some relevant situations.

4.4.14 Second Home (Round 2)

In this section, we report on the duplicate cases that we believed occurred because the adult duplicates had ongoing connections with two residences. There are eight such cases, six of which are confirmed and two of which are not, although they are classified by information received outside of the interview proper. (This category was not used in Round 1 because we found no cases to which it applied.)

In general, we noted two kinds of cases. The first are cases in which a household or single social unit has two addresses between which they move on a regular basis. In other instances, the duplication appears to occur because there are family connections to one or more properties. Related subhouseholds may or may not have actual presence in both of the homes, and movements are more irregular.

There are four cases of the first kind (single social household, regular movements). Three of the four were confirmed. Although they are characterized by an entire unit moving from one place to another, not all members may move at the same time. Except for the unconfirmed case, they were generally easy to elicit.

Snowbirds.¹² Regular patterns of movement between residences include two cases of elderly snowbirds who travel regularly to Florida. The addresses are generally long standing, and one octogenarian couple indicated they had been snowbirds for 25 years. The timing of the moves is reported as being very similar each year and is weather driven: they leave when it gets too cold in the north, and return when it gets too hot in Florida. Occasionally the pattern may change for some family issue, for instance, a late departure because of the birth of a grandchild. It should be noted that there was some indication of memory problems in both of the snowbird cases (one couple laughed about it), but the facts were well known and not difficult to retrieve.

The primary difficulty attached to these duplications is that the snowbirds return from their second homes sometime during April. Because the moves may be weather related, there is some uncertainty as to precisely where they were on April 1. In addition, they tend to report the "usual case," and additional probing is necessary to establish any changes in the timing.

¹² Snowbird residences are distinct from other types of second homes in that they offer the opportunity for a regular migratory pattern of use with significant duration and climatic variation. Homes can be owned, rented, or mobile.

In both of these instances, the snowbirds reported that they thought of their home in the northern state as their "permanent residence," although one remarked that he paid taxes in both places.

Residences Maintained for Work. In one instance a regular cycle of movement was work related. The respondent in this case had recently moved (on March 1, 2010) to a rented house in the Washington, DC, area to take a good job. Her husband's business and several other properties they own were in another state. Thus, the couple maintained what she termed "two residences." She defined herself and her family as living in both places.

The cycle of this respondent's movements were clear to her because they were driven largely by work. She knew the cycle of movements between states clearly because she flew between her homes every Thursday evening and Monday morning. This is the schedule she described for the period surrounding April 1, which suggests that (since she spent 4 nights a week at the original home) the correct enumeration for her should have been there. Her husband and children also regard themselves as having "two residences" and continue to travel between the locations, although not necessarily all at the same time.

Vacation Home. There is one more case that probably falls into this category of second homes. In this instance, the respondent and his partner mentioned "going to the lake for the weekend" to the recruiter. The second residence, with a matching roster, is in a well-known resort town near a lake. However, in the interview, no visits to this place, which appears to be a vacation home, were mentioned. It is possible that this was a reference period problem, in that no trips were made during 2010, although it is common in other interviews for respondents to mention out-of-period connections if one of the probes reminds them of the place. If this data is suppressed, the reasons for it are unclear.

Co-ownership and Economic Ties. The other kind of second home is characterized by ongoing economic and familial connections between related subfamilies with properties that they both use. Movements between them tend to be described as irregular, if they are described at all. For example, a mother and son are said to co-own the house where the respondent lives, while the son and his family come to stay there on a frequent basis. The daughter in law, in particular, is said to come whenever she likes. The son and his family are duplicated in an apartment, but the respondent considers this residence to be temporary. In her view, the apartment is only occupied by the family because of a project the son is working on, although it has lasted for 2 years.

Such co-ownership may create duplication without any reported presence in the co-owned home. An example is a case in which parents were the duplicates in their daughter's house, for which they "co-signed." They do not report any presence in the daughter's home, even for short-term visits. It is not known if the daughter thought she ought to list them, or if the

information was available in some other way to the enumerator in the daughter's location. (That is, proxy data taken from someone with access to public property records would have included this information.)

Another rather confusing case appears to have both financial and familial aspects. In this instance, a son and his wife are listed both in their own apartment and at his parents' home. In fact, they lived at his parents' home at one point, but the son continues to work at that address in his parents' in-home business. This respondent gave contradictory accounts of where he, his family, and his parents lived. In one version, the respondent, his wife and child lived at the Side B address, while his parents lived at the Side A address. In a second version, his parents lived at Side A, while he and his family lived at a third address, Location C. In the last version, his parents lived at Location C, while he and his family lived at Side B. The respondent, his wife and child were also reported as having lived at the Side A address at some time in the past. The son's ongoing presence every day as a worker in the in-home business at Side A suggests a permanent connection to that place. It is also unclear where the parents live; in the third account, no one is living at the place where the business is located. Although it is very difficult to make complete sense of the respondent's various accounts, it may be that at least two of these properties are considered to belong to the entire family. (It should be pointed out that this case is "not revealed" since the respondent never clearly identified the apartment as his address during the main interview, although the location was mentioned later.)

In an additional subfamily case, a duplicate is described as using two residences, but the rest of the family does not use the second place. The duplicates are the respondent's niece and her baby. The niece is described as living with the family, but as maintaining her own apartment, which she "visits" infrequently. The respondent's account is the following:

R: She lived with us. She just had an apartment but she lived with us. Because it was so far, so far...For travelling...A long way from here.

I: Just out of curiosity, why did she keep the apartment there?

R: Guess to have an apartment...you know, she had a baby, she had a little boyfriend, I guess. You know.

The apartment is about 40 minutes from the residence by car. Since the duplicate was not interviewed, the motives are unclear, but it seems possible that this second residence is maintained to facilitate the relationship with her boyfriend.

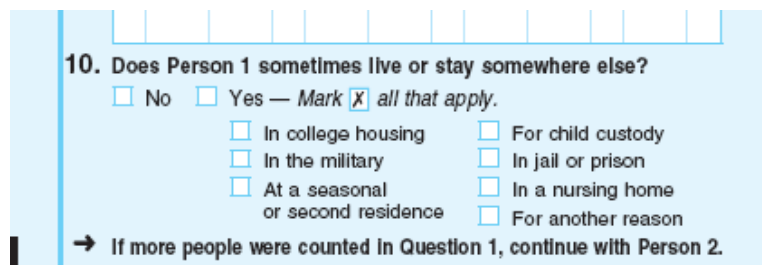
These cases reveal some expected kinds of second homes: seasonal homes and second homes maintained to be close to a job. They also indicate that economic and financial ties play a role in duplication in second homes. In particular, some of these duplications may

have been driven by co-ownership of properties or by participation in family businesses associated with a particular property.

4.4.15 Cognitive Probes for Second Home Issues (Round 2)

The Round 2 protocol included a cognitive probe on the category in the overcount coverage question designed to elicit second homes.

Question 10 reads:



10. Does Person 1 sometimes live or stay somewhere else?
 No Yes — Mark all that apply.
 In college housing For child custody
 In the military In jail or prison
 At a seasonal or second residence In a nursing home
 For another reason
→ If more people were counted in Question 1, continue with Person 2.

The category relevant to second homes is phrased "seasonal or second residence." Cognitive probes about the meaning of this phrase were asked of all respondents and not just those who had second homes. There was no systematic difference between the two groups of respondents, although a woman who maintained a second home to facilitate a job was the only person who mentioned this in her definition of the terms.

The category is almost always defined in terms of "vacation homes" of some kind. The most common pattern of definition for this category was based on the "seasonal" part of the term. Thus, respondents mentioned "summer homes" and "beach homes." They also frequently mentioned a seasonal cycle of migration based on weather:

R: It's pretty much like clockwork; you know they're going to come down this time of year.

R: A seasonal thing to get away from the weather.

Because the pattern is frequently connected with senior citizens, respondents sometimes mentioned older people in their definitions. "Like a grandfather" was included in one definition. The snowbirds among our respondents recognized themselves in this category.

On the whole, the seasonal component is quite prominent in these definitions. One respondent responded to the probe by simply saying, "Seasonal. Seasonal is holidays." This cued the only description in the interview of any of the places that the respondent's family goes, which were brief visits to relatives for Christmas and Easter.

We had the sense that the seasonal association swamped the idea of second home for any other purpose. Only a small number of people mentioned them in terms such as "another piece of property" or "a true second residence." This last was offered by a respondent who considered herself to live in two places.

It is notable that all of these definitions seem applicable to places with relatively permanent connections. Temporary places, such as a room rented to be near a job or places that are only sporadically occupied, like timeshares, were never mentioned at all.

One other definition should be noted here, primarily for its connotations of sensitivity. One respondent answered the probe by saying, "This seems personal. People could get confused...This might happen if there is a temporary separation—or if the husband or wife has a mistress. People would be confused about how to answer."

4.4.16 Cueing for Second Home Situations (Round 2)

The snowbirds correctly used 14d, (Anyone who has a vacation or second home, like a place they go for the summer or winter, or even for weekends?) although this information had emerged prior to this in the interview. Two situations were listed using 14c: "Anyone who stays somewhere else for work?" In one instance, the respondent was not entirely sure it applied because she considered herself as having two residences, but had established one household to be near a job. In the second instance, the category was used to describe a son's apartment, where he had been living for 2 years to be near a project considered "temporary." The category was also used to mention timeshares, although presence in them was out of the reference period.

4.4.17 Group Quarters (Round 1)

The single group quarters case is accounted for by an elderly respondent who had an operation shortly before April 1, and said she was subsequently "in rehab." The duplicated addresses are the apartment to which she eventually moved back and a senior living facility that provides assistance with different levels of care. (This is not a GQ, as defined by the Census Bureau, but rather is a type of assisted living situation that facilitates rehabilitation care.)

4.4.18 Group Quarters (Round 2)

The single group quarters case in Round 2 involved a halfway house for women. This facility was a private housing unit with systematic connections to a drug rehabilitation facility. The Census Bureau gave us permission to use a group quarters/housing unit match in order to carry out a dependent interview. The duplicate was the respondent in the original cognitive interview. She had been enumerated at the rehabilitation facility (GQ) and at the halfway house (HU). The respondent in the qualitative interview lived at the halfway house, and had provided proxy data to the census enumerator.

It should be noted that the halfway house is essentially a private apartment house, but it represents a systematic step in the recovery program organized by the drug rehabilitation facility, and is exclusively used by them. The qualitative respondent regarded it as an "independent living" stage of recovery. Some people, including the cognitive respondent (dup) and the proxy dependent respondent, went back to the rehab from the halfway house. This kind of private housing unit appears to intergrade with standard GQs.

The halfway house had two housing units, on the first and second floors. The qualitative respondent had provided proxy census data to an enumerator about the people living upstairs, including the single duplicate. In our interview, she reported on the movements of the upstairs residents although she was not on the census roster for that unit. The duplicate address was a facility from which both the respondent and the duplicate had transferred, a rehabilitation facility (GQ), which was the location for the first stage of a recovery process.

It was thought that the reason for the duplication was that some of the residents in the halfway house continue to get their mail at the former facility. The respondent indicated that they used the address of the rehab as their "permanent address." However, it may also be the case that the difference in timing between the GQ enumeration and NRFU may have played a role.

This GQ case was a dependent case. The respondent in the initial cognitive case was the duplicate who was reported by the respondent in the qualitative interview as an April 1 resident in the halfway house. The cognitive and qualitative cases agree that the respondent was at the halfway house on April 1, 2010. The cognitive respondent also reported helping the house manager at the rehabilitation facility to fill out a census form. This accounts for the duplication.

4.4.19 Convenience Address (Round 1)

The category of "convenience address" is used for situations in which a duplication is created when a person lives primarily at one address but uses a second address to receive mail, or for legal purposes like a driver's license. The duplication occurs because the person is listed both where he or she lives, and at the mail address. The second address is usually that of a relative.

The two cases in Round 1 that are listed as convenience addresses are essentially errors made by respondents. For example, in one case, the respondent was aware that she had been duplicated because she had been listed with a sister whom she had previously lived with for a period of time.

I: On April 1, where were you?

R: [Supplies the Side A address. She had since moved to a new location]

I: And your sister?

R: She got the paper in the mail. I think it was in my name and her name. She put all of us on there. [This refers to the Side B address.]

I: Were you staying with her in April?

R: No. That's where my mail come, my census form come to her house. We didn't have mailboxes; that's where I transfer my mail.

I: Where do you get your mail now?

R: Still on [Side B address]. I don't know what's wrong with the mail system. I ain't got a mailbox key to the mailbox outside.

In this case the respondent was enumerated at the place she lived on April 1. Her name was also listed by her sister, because that was (and continued to be) the respondent's mailing address. In this account, the error is the sister's. Note that the respondent believes that the census form was sent to her directly, with her name included on it.

The other case involves a man duplicated at his brother's address where all his "official" mail goes. He was enumerated at the place where he was living on April 1 and his name was supplied at his brother's place as well. Since the brother was not interviewed, his reasons for making this error are not recoverable.

4.4.20 Convenience Address (Round 2)

The single convenience address duplication in this phase of the research was a mother who was listed in both of her daughters' homes. The respondent in the qualitative interview indicated that her mother lived with her, but she knew that her sister had also listed her.

R: [the census roster] is correct, but ... [my mother] was living between my house and my sister's house. I later learned that my sister included her on the census form for her address.

I: Could your sister have thought your mother lived with her?

R: No, because she was at my home at the time and she had been there for a while. But her mail goes to my sister's address and so my sister felt she should count her as a member of her household.

I: Does she spend time at your sister's?

R: No, she's at my house every day but her mail goes there. Her social security does go there. She's always used that as a permanent address. I don't know her reasoning.

This was a dependent case. The two sides agree on the location of the mother's "permanent address," (i.e., where she gets her mail) but disagree about where she spent most of her time. The respondent in the cognitive interview (Side A, sister to the respondent quoted

previously) described her mother's presence in the qualitative interview household (Side B) as temporary. In this account, the mother mostly lived at the "permanent address (Side A)," but went to the other daughter's home (Side B) for a few months in late 2010 (mid September to December.) Other than that, she was reported as going there for weekends to "get away." However, the qualitative respondent (Side B, as seen previously) disagrees with this assessment. According to her, the mother 'was in my home at the time and had been there for a while,' and is "at my house every day." This directly contradicts the cognitive respondent's account. Thus, there is a substantial disagreement about the mother's location around the time of the census.

This case appears to follow the pattern for the dependent custody cases, in that both sides "claim" the membership of the duplicated relative.

4.4.21 High Mobility (Round 1)

This category includes people who seem to have actual presence in two households, one with nonrelated adults. The two women who did not provide information about their unmarried partners are included here. These cases were not verified because the respondents did not provide the information about the second location, but census data indicates that they were listed at the second household with an "unmarried partner." This seems to indicate that information about unmarried partners is sensitive and may be suppressed. In one case the respondent was the duplicate, and in another case, the respondent was the duplicate's mother. It is not clear in the second case if the mother (the respondent) knew about her daughter's other location: the data may have been suppressed before it reached our respondent.

The third case is a man who is listed both with his mother and with a girlfriend. It is interesting to note that the mother insisted during the interview that she had told the girlfriend to list him, but apparently had forgotten that she listed him herself. It is interesting to note that in other cases, we occasionally heard about men living with girlfriends in these interviews. It is probably premature to conclude that women are more likely to regard these liaisons as more sensitive than men, but it is a hypothesis that should be explored.

In our interviews, we sometimes found people who are highly mobile who were not listed in the census returns. They are therefore not duplicates. These people are sometimes called "floaters" or are described as "bouncing around." Since they weren't duplicated, we have no way of knowing if they were listed somewhere else or if they represent census omissions.

4.4.22 High Mobility (Round 2)

There were no cases ascribed to high mobility in Round 2.

4.4.23 False Matches (Round 1)

False matches were assessed on the basis of there being no established connection between the two listed families, based on data provided in the interview and in a post interview review of census data. Two false match cases emerged both involving children. In one case, a duplicated child had the same name and age, and in the other case, there was a similar name with a small difference in spelling of the child's first and last names. These two cases were assessed as false matches, because both households showed the child with different sets of biological parents. In one case the households were on the opposite sides of the country, and in the other the households were in socially different neighborhoods in the same city. It should be noted that actual cases of a false match cannot, by their nature, be recovered through a single interview. That is, both these cases appear to be not revealed dup cases, until all data is taken into account.

4.4.24 False Matches (Round 2)

As in the first round, false matches were assessed largely because interviewers could establish no connection at all between the households. Both cases involved young persons who could have been in custody situations in two states based on census data. However, no household or other connection could be established during the interview, and in one case, the spelling of the duplicate's name was slightly different.

We assessed false matches in these cases because even after repeated and persistent probing, we could find no connection between these children and any relative in the other state, no evidence of a second marriage, and no evidence of any mobility at all by the child involved. There is some room for disagreement about the status of these cases. However, in our assessment, a false match is more likely than suppression of data in these cases. (Where suppression of data occurred in custody cases, some connection between the households was usually evident.)

4.4.25 Not Revealed Dup (Round 2)

One case in Round 2 was impossible to classify. This was a case of an elderly woman who was listed as the single resident at two addresses in widely distant locations. She reported moving away from the general region of the Side B address in 2008. During the relevant reference period, she visited the general area once, for a brief 2-week period in July of 2010. The address collected for this visit does not match the Side B address. The relative she visited does not live at the Side B address, but in an adjoining town. It seems likely that the respondent moved out of the Side B address in 2008. It is unclear why her name is still associated with the Side B address (e.g., as a property owner) or why that resulted in an enumeration. It should be noted that it is unlikely that this is a false match because of the respondent's connection with the region and because the respondent's name is somewhat unusual.

4.5 Privacy: Intrusiveness of the Questions

This section describes some indications in both rounds in which respondents express discomfort with the basic topic of the interview: the presence of particular individuals, the attempt to determine addresses for persons mentioned, and the tracking of residence/movements in various places. Privacy issues attached to particular kinds of living situations that cause duplication have been discussed previously.

The information for this section is drawn both from the debriefing questions at the end of the interview and from our observations of respondent concerns stated in the interview and general observations of their behavior.

4.5.1 Intrusive Questions (Round 1)

Presence in the Household as Sensitive in Round 1

In one of the rare mentions of privacy during these interviews, a woman told us that the names of people in her household and who was staying with her was "very private." This respondent told us about a roommate who had asked not to be listed on the census, and she complied. As the following passage indicates, the information is both private in itself, and because it may indicate something hidden:

"I felt very uncomfortable because I felt like this is very private, who lives in my household and I felt very private because I'm a very private person, but they saying it very important...give an account of who live in each household. [Mentions her understanding of the connection between the census and benefits.]...Because sometimes you have other people who lives in the household don't put their name down—is they hiding something? I got someone that lives with me and they do not want to participate in the census. So I questioned him and said, are you hiding anything? A lot of people don't like to do it because they got pasts...Like I say everybody got a past but you done paid for your past. I just better leave it like that. He's my friend, I love him very dearly, but he's a more private person."

It is interesting to note that this respondent was perfectly willing to tell us this story, and in fact brought it up herself spontaneously. This may be because we didn't ask to collect his name. It does, however, point out that when respondents are faced with having to reveal sensitive information, the easiest option they have is to suppress it.

Addresses in Round 1

As noted previously, providing address information, particularly about the movements of others, may be experienced as intrusive by some respondents.

4.5.2 Intrusive Questions (Round 2)

Only a few respondents used the debriefing questions to indicate that they were uncomfortable with the questions. Several respondents indicated that they thought the questions were repetitive, wondered about the results, or wondered how the study could be

used to improve the census for 2020, as our introductions had claimed. Only one respondent used the debriefing to mention the “personal but not too personal” nature of the questions, but denied that they bothered her because she didn’t have anything to hide.

However, other evidence indicates that some respondents had privacy concerns about the interview. It is interesting to note that this discomfort often did not appear to be attached to specific emotional issues, which respondents might not wish to discuss or to reveal. Such issues, like foreclosures or unmarried relationships, may have figured more strongly in Round 1. Rather, the source of the discomfort is more general. This is evident in the remarks of a woman who complained that the questions were “intrusive”:

R. They were a little intrusive.

I. Which questions?

R. About family and where they were, where they live, questions about extended family. They are all very private people. My son, my mother and son are especially private. And so is my daughter-in-law.

The sense that asking about the movement of relatives was uncomfortable was occasionally manifested in defensiveness about the issue. For example, one respondent became irritated at questions about her brother and sister’s visits to her home: “I know you think they live there, but they don’t!”

It is interesting to note that this sense of intrusiveness attaches to the basic content of the interview, which was apparent to most respondents. (Our introductions told them that we were interested in persons with more than one place to live.) It appears that simply tracking the movements of people, or finding out where they go, can seem intrusive. This sense may account for requests for information about how the data we collected were going to be used. The questions were personal, but some respondents were willing to cooperate if there was a legitimate reason to ask them.

4.6 Periodicity

Since the concept of census residence is based on where a person is “most of the time,” it is of interest to examine the way that respondents deal with concepts of time for persons who are mobile or have more than one place to stay. We were also interested in the way that people thought about and reported on patterned or repeated moves between locations in households where they had ties. For this reason, we refer, in general, to the issue of time as “periodicity.” In Round 1, no specific questions were asked about how often and how long a person spent at another place. However, respondents sometimes referred to these issues in the course of attempting to define someone’s living situation. In Round 2, a series of specific questions about periodicity were introduced into the protocol to address these issues directly.

4.6.1 Periodicity (Round 1)

The most prominent finding in Round 1 is that people tend to use vague quantifiers to express the time spent in other households. The following quotes have been selected to give a sense of how time is spontaneously handled in these interviews:

- "X spent a lot of time, but not enough to say that—He lives in the suburbs."
- "...might have stayed at her father's address"
- "...my grandson he stays with me then he goes...back and spend some time with his mom. He's a floater until she get her head straight."
- "Even then he spend a good bit of time with his mother...30, 40, 50%, 30-50%, something like that. It's a rough order of magnitude."
- "He will go to his grandparents now and then."
- "I will go and stay at my mom's for whatever reason. So I would say "Yes, I do, every now and then."
- "Spends the majority of his time with his mother."

Only in two cases did we elicit more specific information about the periodic pattern of moves. In one case, a mother knew that her child spent exactly 50% of his time with his father. This was because the child stayed with him while she was working, and her shift was 12 hours a day for 15 days a month. It should be noted that this does not imply that the 15 days had a necessary pattern. In the other instance, a woman was described as working in another city: "She would go out there 3 days a week and would rent out a room on a month-to-month basis." It is interesting to note that the certainty in these instances stems from knowing a work schedule.

We conclude that if more information is needed about specific periodicity, detailed probing will be necessary. Especially in cases where respondents are thinking about formal or legal custody, it would be necessary to elicit information about particular stays and their lengths, although this may not be easy for respondents to accomplish.

Another issue with respect to dates arose in these interviews—the implicit reference period of 10 years. That is, people know that the census is taken every 10 years, and if they did not know it, we provided this information at the beginning of the interview. Some respondents assumed that when they calculated where someone lives, we were interested in the entire 10-year period. An example of this is a father who had recently signed over parental rights to his own father, but had listed his son with him, thus creating a duplicate. The main reason that emerged was that this situation was new, and he wanted credit somehow for having been a parent during most of the 10-year period.

The 10-year period is confusing for some: "Is this most of the time during that 10-year course? ...it's in the last 10 years how accurate can it be...?" The quoted respondent was perhaps puzzled because the child he was discussing was only three. For others, a 10-year period was beginning to seem very long. One respondent had discussed this with someone who pointed out that "social media" provide information about people on a much more frequent basis: "We're a much more mobile society, what's going to happen in 10 years?"

4.6.2 Periodicity (Round 2)

The Round 2 protocol included a series of questions about time that were to be asked for any movement that was reported for any household member during the main cueing series at Question 14. These questions were designed to further understand the timing of these moves and to elicit the natural vocabulary that respondents used to express them. The questions asked about the amount of time, the number of stays, the pattern of stays and the reasons for them. A final question asked about whether the pattern had changed during or just after the census period.

The questions were the following:

31. You said that [you/NAME] spent time at [Y]. As well as you can recall, last spring or summer [2010], how often did that occur?
32. How many stays do you think there were between March and June of last year? How about during the entire year, last year [2010]?
33. How long did [you/he/she] stay there that time? [for one time stays]
34. How long did [you/he/she] usually stay there each time?
35. Did [you/NAME] go there regularly, that is, is there some fixed pattern or was it occasional?
36. What accounts for the timing of these occasional stays? That is, why did [you/NAME] decide to go there?
37. What is the pattern? What accounts for the pattern, that is, why is it that way?
38. Did the timing or number of the stays change during the spring or summer of 2010?

The main difficulty in analyzing periodicity in Round 2 was that the questions listed previously were in fact not administered in a number of cases. Because this series was dependent on a positive report in Question 14, a number of the cases were not routed into Section 3 at all. In 10 of the cases, 14a–j elicited only "no" answers. (The reasons for this are discussed in the Main Elicitation Strategies section, below.) This occurred in cases where there were movers or co-signed properties or where respondents did not know about or chose not to reveal any moves. In some additional instances, "yes" answers were recorded,

but no moves were discussed. In one instance, at 14h ("Anyone who has no single place to live, but stays with different friends or relatives at different times?") a "yes" was recorded or a homeless teenager, but he had stayed only at the interview address during the reference period. Another respondent refused to discuss a custody case after first mentioning it. (This is described in the custody section, previously.) An additional respondent at an independent living halfway house had mentioned visits to relatives earlier, but at this series denied that they represented stays overnight. (The respondent had indicated that such overnight visits were against the program's rules).

It should also be noted that interviewers sometimes did not administer these questions as intended, because they accepted discussions of timing mentioned in other contexts as adequate information, and did not ask for specifics at Section 3. In addition, in a few instances, moves that were out of the reference period were included.

As a result, there is little data to discuss, and not all of it is relevant to duplications in which this study is primarily interested. The analysis below is presented as tentative, and is intended primarily to guide any further research using similar questions.

Question 31 is worded: "As well as you can recall, last spring or summer [2010], how often did that occur?"

Answers to this question tended to use the same kinds of vague quantifiers that were also evident in Round 1. Answers to "how often" included "sometimes," "every now and then," and "not often." This seems to indicate that "how often" is not interpreted as a request for specific numerical data.

Even when numbers were offered, they were preceded by an indication of uncertainty: "I think a couple of times. You want a number? Maybe 5 or 6." The equivalence of "a couple" and "5 or 6" is an indication of further vagueness. All through the series, respondents preceded numerical answers with such uncertainty qualifiers, including "probably," "maybe," "I think," "I figure," and the like.

The next question asks specifically for a numerical answer: Q32. "How many stays do you think there were between March and June of last year? How about during the entire year, last year [2010]?" Numerical data in answer to this question was generally offered in terms of a rate, rather than a total. Most often, when a rate was offered, it was expressed as number of times in a month:

- "One or two times a month..."
- "Maybe once a month."
- "Did not go that much...I'd guess 5 times, out of the month, 5 times."

- "I figure half the month."

Snowbirds either report as a monthly pattern ("roughly 6 months") or offer the dates of their trips.

Some reports use a weekly pattern, such as "He can be here 3 weeks at a time." Weekly estimates are especially relevant if the move occurs on weekends, as it frequently does in custody cases. One respondent reported that her grandson: "Goes back and forth every weekend. On weekends, he visits his dad."

In one instance, the situation was understood as a daily pattern: "She just took care of her mom. Her mom was sick...so she and her sister would split the days between them. Then go home and somebody else would come in."

It appears from this limited data that reporting a monthly rate for repeated stays elsewhere is somewhat natural for respondents. It should be noted that the question asks for a 3-month period, but this was often ignored by both respondents and interviewers.

Question 32 also asks for a yearly total. Some respondents did not provide one and others flatly refused: "In a year? I don't know. I don't have any idea." (This respondent was willing to give a monthly estimate, however.) Other respondents attempted to provide a yearly estimate by transforming the stated monthly or weekly rate.

The numerical calculation they used to transform a rate to a numerical total for a longer period could be unclear. The respondent quoted previously whose stepmother cared for her own mother on alternate days calculated that the number of visits between March and June were "about 20." Since March to June is at least 90 days, an expected estimate would be about 45 days for "every other day." It is, thus, not clear what reference period the conclusion of "20" represents. (The respondent did not attempt to calculate for a year, although the pattern had apparently gone on for a long period of time.) Clarifying these calculations would require asking the respondent to specify how they arrived at the number offered.

The calculation of a rate often required some manipulation of the stated rate, up or down. For example, "She usually go every other weekend, but she didn't, so I would say probably 14 times out of a year." What this expresses is (1) the expected, rather than usual, custody pattern, and (2) the fact the child did not always follow this pattern. The estimate of "14" seems to represent "every other weekend," which should be 26 in a year, minus an unspecified number of changes in the custody schedule. In this limited data, the periodicity discussed in custody cases seems to have this characteristic. Respondents answer "how often" by offering the expected or court-ordered rate, and then altering it to fit the actuality.

It is of interest that, in these cases, asking "how often" is interpreted to refer to the formal agreement about custody.

Question 36 and 37 ask for the reasons for the stays being discussed. This question was easily answered by snowbirds, for whom weather and golf were obvious reasons. However, the reasons for visits between relatives and custody cases were somewhat less clear. This is partly because respondents see these moves as somewhat inexplicable or out of their control. The movements may be reported as occurring at the whim of another person, which rendered them unpredictable. The following quotes are examples of how respondents express this unpredictability:

- "I don't know. They're older, 19, 20, they do what they want to do...I don't know, I don't even have to be there and they come....I know they come over when they want."
- "When my granddaughter wants to see her mom...she goes."
- "When she disappears, she disappears, okay...Like she drops her (duplicated child) off at our house...and I said okay. She never came back... [Or] she takes her time with her and doesn't come back with her."

The sense of unpredictable movements is not limited to complex interpersonal situations. For example, one respondent described the timing of her husband's frequent deployments as being entirely up to the army. "I don't know, the army decides that. I don't know how that works."

The next question in the series asks about the respondent's perception of changes in the pattern of stays. The wording of Question 38 is: "Did the timing or number of the stays change during the spring or summer of 2010?"

For the most part, the question did not elicit changes that were pertinent to that particular reference period. If the seasonal changes had already been discussed, as was the case if a summer vacation was mentioned as part of a custody pattern, the question was either not answered, or was answered in the negative. However, respondents did sometimes perceive changes, and were able to discuss them with us. For example, in an informal custody situation, an aunt was able to describe when and how the child's custody began to change from one household to another. In another case, a respondent who had two residences described a transition process where her children became more associated with the new residence and how that changed the family's pattern of movement between the two locations.

In this data, we were also able to observe some of the heuristics that people use to keep track of information about moves. Some respondents appear to use a form of landmarking in a natural way. They relied on holidays to calculate the timing of moves. For example, one

father in a custody case calculated the March to June presence of his daughter by figuring out the holidays during which she stayed with him. Another mother figured out when her daughter moved away by thinking about Thanksgiving and Christmas:

R. End of—before the holidays. Just before Chris—November of last year...

I. Before Thanksgiving?

R. Yeah, which was fine because I didn't have to cook.

Such respondents might have benefited from the use of a calendar.

We also observed a few other aids to remembering a pattern of absence and return. One respondent said he was certain of the movements of his duplicated daughter because her movements out of the household were opposite to those of another daughter who came into the household at the same times:

"Usually that's when my other daughter would come in, who stays in [another town]. That's when she would come and stay with me for spring break and summer, so when I get rid of one, I got another one coming in!"

The respondent quoted previously who did not understand the reasons for military deployments said she might remember the dates better if she could look at some photos:

"I just really would have to go back and think of what happened at the time. Or look at pictures or something...They would just help me remember, or I could see how old [her son] was, too. Or they might have a date on them."

It is interesting that in both of these instances the respondent appeared to be anchoring knowledge about one household member's movements by reference to another household member.

4.6.3 Quality of Address Information (Round 1)

Because address data is critical to assessing duplications, it is important to understand how respondents provide address information during an interview. We had hoped to provide a complete analysis of this issue; however, many of the qualitative interviews did not provide adequate data to indicate exactly how the address was expressed. Enough evidence exists, however, to prompt a few observations about the quality of the address data provided by respondents.

- We had the sense that addresses were more easily recovered from cases of movers than from custody cases. That is, people know their previous address, and (since these moves are all fairly recent) can still remember them.
- Respondents often do not know full addresses of the places with which they or family members are connected. It is more common to know a street name or a town than a

specific house or apartment number. Sometimes location information is given as a set of cross streets. Zip codes were not commonly mentioned.

- The addresses we recovered were "conversational addresses." That is, they were the kind of location information that people know without having to look it up. Occasionally, respondents remarked that they "had it somewhere" or could ask another person for it. (In one instance, a respondent was reluctant to wake a child up who could have provided an address for the place that she stayed.) This indicates that a more complete postal address would require specific probing and respondents looking up records.
- These conversational addresses may indicate neighborhood names that do not match the specific postal address. That is, the name offered may be accurate in the sense that it provides the name in common use, which is not the same as the official postal address. In an example not drawn from our data, a local area called "Wheaton" by everyone living there, in fact, has an official "Silver Spring" designation. We found several such examples in our data.
- In some cases, respondents were able to remember only driving directions. That is, they said they knew how to get there, but not specifically what the address was. This probably accounts for not knowing the house street number.

Since we were dealing with a central household respondent, there was address information they did not possess about other household members. Thus, the address of the other grandparents of a daughter's child was unknown to one respondent. She was even unclear about the town in which they resided because she had never been there. In other cases, young adults may not have told their parents with which other places they were connected.

Based on general impressions of the interview, providing address information was uncomfortable for some of the respondents. Interviewers may have had a tendency not to probe for specific information because they sensed that asking for address information would be intrusive. One respondent flatly refused to provide address information about his relatives.

It should be noted that people only know specific addresses if they use them on a regular basis. A person's own address is reinforced by constant iteration. The addresses of others may not be used at all, or used only in the relatively rare event of sending mail to that place. If specific address information is required from respondents, it may be necessary to build in an address look-up request into the interview. However, it is likely that this request would be resisted by respondents or challenged by increased lack of availability of traditional address books.

The quality of address information was not analyzed in Round 2.

4.6.4 Accuracy Concerns

We noted that respondents were often concerned that they had made a mistake in their enumeration, and that this was the reason that they had been contacted by the research team for a second interview. The following sections describe the ways in which this concern for accuracy was reflected in the course of the interview.

4.6.5 Reading the Roster (Round 1)

In Round 1, census information that we were given to read to the respondents about who was listed in their households did not always include minor children if they were not duplicated. Where such abbreviated rosters were read, the respondents were put off, believing that an error had occurred and that the children had not been officially counted in the census. This sometimes had a negative effect on the flow of the interview, as the respondent (and the interviewer, before we learned of this practice) worried about the omission. After the procedure changed, it was possible to reassure the respondent, but not in a very convincing way. "They make mistakes" and, "They don't always give me all the information" were not reassuring to the respondent, who could not be sure from these quasi-explanations that their children were considered important by the United States government. For Round 2, we recommended providing complete rosters in all cases.

Despite this problem, reading the roster was generally not problematic. Occasionally, it led respondents to recall others that they thought had been listed, such as a "floater" with a strong presence in the household, or a duplicated child who mostly lived with his mother, but had a strong presence in the household.

4.6.6 Reading the Roster (Round 2)

Because we had access to complete household information in Round 2 and because we had already collected an informal roster from the respondent, reading the census roster was generally not problematic in Round 2. Only in a few instances did differences emerge; for example, one respondent did not recall that she had listed a brother (who she said did not live with her). Another respondent was surprised that she had mentioned a child who stays in the household part of the time. Also, in the case of the GQ respondent, lack of knowledge or memory also created some differences between the roster and her accounting of the upstairs unit.

4.6.7 Accurate Picture Question (Round 1)

One of the probes in Round 1 read, "Do you think the census got an accurate picture of who is in your household?" It was intended as a nonspecific attempt to elicit a roster of who was living in the household. Another intended purpose of this question was to elicit situations in which respondents had not been able to list persons that they wanted to list. These potentially included college students, military personnel, or commuter workers who mostly

lived elsewhere, or other people who the rules exclude but may be thought of as household members. Such responses did not emerge, and this may be because such individuals were not reported by respondents in the household. It may also be because the question relied on the respondents understanding and memory of the rules, which, in afterthought, was unlikely to remain months after the enumeration.

However, except in a few cases, the question failed to elicit any discussion of household membership or recollection of who was on the roster. Apparently, when it failed to elicit a description of the roster, the main reason was that the question was interpreted as a question about the accuracy or veracity of the information provided to the Census Bureau by the respondent. Respondents said that the information the Census Bureau received was accurate, and explained this by saying, "I gave accurate information," or "I had no reason to hide anything" or something similar. In short, the question was interpreted to mean "Did you lie to the census?" Though it was not explicitly expressed to us, this interpretation of the question poses a potential annoyance to the respondents.

Only one respondent said that the picture of her household had not been accurate. This was a respondent who had complied with a roommate's request to leave his name off of the form. (The roommate had privacy concerns that the respondent intimated stemmed from "the past.")

In one instance the question elicited the first mention of a subfamily staying with the respondent. (In this case the subfamily was duplicated: they had been living with older relatives, but moved to an apartment of their own. The case was coded as "movers.")

4.6.8 Accuracy Concerns (Round 2)

Although no specific question about accuracy was asked in the Round 2 protocol, respondents often exhibited concern that the underlying purpose of the interview was to check on their previous answers. In some instances, they were able to guess that there may have been two forms (movers and snowbirds especially), and thought that they might have erred in providing information again. For example, one respondent worried that she had not been able to indicate to the Census Bureau that her family was "in transition" because she knew she was moving soon after April 1. Sometimes they became concerned about whether their choices in rostering the household had been correct after the roster was read to them. It is our sense that respondents' interpretation of the overall task was influenced by the impression that we were checking on their previous answers.

4.7 Main Elicitation Strategies in the Protocols: Cueing in Rounds 1 and 2

The following sections analyze the general functioning of specific questions included in the two protocols intended to elicit other places to which household members were connected.

(Specific information regarding the elicitation of particular residence situations is included in the relevant sections, previously.) The aim of this analysis was to assess general strategy used in the two protocols to elicit duplication-relevant information from respondents. The strategies employed in the two rounds were different. Some questions were more useful than others in eliciting relevant information, and different cues were effective in different types of information. Questions with the same or similar intent in the Round 2 protocol are treated immediately after the findings for the corresponding questions in the Round 1 protocol.

4.7.1 Duplication and Omission Series (Round 1)

A main technique to elicit situations relevant to duplication in Round 1 was a long list of hypothetical questions about double counting and omission from the census. These were repeated for various ages of persons. They were intended to serve as a "soft" cue to such situations in the respondents' own households, and failing that, to elicit respondent knowledge of the kinds of situations in which we were interested. The success of these questions was mixed.

As hypotheticals about other people, the questions were not particularly successful. Since the questions were phrased in terms of the respondent hearing discussions of situations leading to duplication or omission, it was easy for a respondent to answer "no." This avoided thinking and shortened the interview. Others took the "satisficing" option, and worked just hard enough to think of one issue, and then apply it to all the questions. Thus, if a respondent thought of presence in a GQ for one age group, she or he tended to apply that to all of the subsequent age group.

Another interpretation may have prevented the question series from being effective. One respondent took this as an attempt by the Census Bureau to get him to gossip about his neighbors. This made him uncomfortable, and led to his assurances that they were "stable" and that he had no problems with them.

Where people did attempt to provide us with answers, they mentioned hypothetical residence problems that were for the most part well known: floaters, people who have lost homes, senior citizens being cared for by children, etc. When they provided personal information, it was often not within the reference period in which we were interested (e.g., a story of staying with relatives during a move 7 years ago).

However, despite these results, there were a few instances in which these questions elicited the first mention of custody issues by respondents. It is our impression that this may be from introducing the idea of having more than one place to live. Nothing prior to this section of the interview provides this information, and for many parents, children with other household ties quite simply "live" with them. After the idea was introduced, it could take the

respondent a while to get used to it. This sequence, from a mother whose child was with his father 50% of the time, is a useful illustration:

I: (Q.13.) For instance, they might be listed in two different places, like at home and in a college dormitory, or at a primary home and also with a relative or friend. Do any situations like that apply to you or your family?

R: No, absolutely not, both my children live here with me, and my daughter's yet to be in college. (R answers a quick "no" Question 14.)

I. (Q15.) What about teenagers? Do you know of any situations where they might be counted twice?

R: I guess that would be the only situation; maybe if they, it would probably be the situation with me and my son and his father. Because he stays with him half the time too, so I count him, and if maybe he fills out a census form, he will count him as well. But I can see how that would happen.

The child is actually in grade school, so it is unlikely that the mention of "teenager" was what cued this response. It appears to be the repetition of the cue about having more than one place and being counted twice that elicits this information, despite her (incorrect) certainty that the child was not counted twice. In this and several other cases, the first mention of a child or teenager's alternate place of residence occurs in this sequence of questions.

The omissions question also elicited discussion of children in custody. In one case, a respondent first mentioned her fiancé's other child here, who "resides with his mother." This child was the duplicate, but the respondent did not recall listing him in the census and was subsequently surprised when he was among the persons listed on the roster.

We concluded that the concept of two places to live, and possibly even double counting, may be necessary to cue to relevant information about custody cases. Questions to do this were included in the Round 2 protocol and are discussed below.

4.7.2 Residence Situations Series (Round 2)

The Round 2 protocol involved a major change in the way that residence situations were elicited. The long list of hypotheticals asking about duplication and omission for persons of different ages, used in Round 1, were dropped. They were replaced by a series of situations that were known to create duplication. These were presented to respondents, and they were asked to identify whether the situation applied to them or anyone in their households. These cues constituted Question 14 in the Round 2 protocol. These cues were

14a. Anyone who spent time both at home and in a college dorm?

14b. Any children or young adults who spend time in two relatives' homes, like a father's and mother's or a parent's and grandparent's?

- 14c. Anyone who stays somewhere else for work?
- 14d. Anyone who has a vacation or second home, like a place they go for the summer or winter, or even for weekends?
- 14e. Anyone who spent a lot of time around the census in a facility like a nursing home? Or in a retirement community?
- 14f. Anyone who spends a long time with different relatives, like an older person staying with adult children?
- 14g. Anyone staying with relatives or friends to help them, for any reason?
- 14h. Anyone who has no single place to live, but stays with different friends or relatives at different times?
- 14i. Anyone who stayed somewhere because they are in the military or are deployed?
- 14j. Anyone else who stayed somewhere else for an extended period during the spring or summer of last year, 2010?

These cues were preceded by an introductory paragraph, which gave the respondent more information than was included in the Round 1 set of cues. The wording of the introduction was:

"The census needs to count each person only once and in only one place. Sometimes the right place is difficult to determine because of the circumstances of people's lives around the time of the census. For example, some people may have more than one place to live or stay, and spend time in both of those places. I'll ask you a series of questions about situations like that. I'd like to know if any of them apply to you or to any of the people living with you that you just mentioned to me."

This introduction introduced the concept of dual residence and the idea that the census needs to count people in only one place.

A major finding in Round 2 is that in a number of cases, no situations were reported in this series of questions. In 10 of the 25 cases, the series 14a to 14j elicited all "no" answers. (Adequate information to understand the situation was provided elsewhere, in most cases.) In some instances, "no" answers in Question 14 are appropriate. Because we did not anticipate movers, no cue to elicit that situation was included, and in fact, the four cases classified as moves show no positive answers to the series. Another two situations that emerged in the Round 2 data were not included in the cues: a convenience address (asked about at the very end of the interview) and a co-signed property. In the latter instance, a "yes" answer was inappropriate because the questions are asked about "spending time," in a place, which the co-signers denied they had done. In other instances, the series of "no"

answers was part of a general denial of any relevant movements during the period, or may have stemmed from a proxy respondent's lack of knowledge.

Some respondents mentioned the same situation more than once, at different cues. One grandmother repeated her grandson's custody situation in three different categories. Others appeared to use the introductory paragraph for cueing, probably responding to the wording regarding "having more than one place to live or stay." They offered relevant information before any of the Question 14 cues had been read.

The intent of these cues was to elicit information about duplications, but they were also intended to draw out other situations about which we had not yet heard, involving all of the people in the household. However, for the most part, the respondents were discussing situations relevant to the duplication, rather than new situations. In all, the cues provided 14 situations relevant to the duplication, and 7 mentions of new situations or situations out of the reference period. It should also be pointed out that some situations were not mentioned at all until the final series of questions in Section 4 of the interview.

4.7.3 *Minor Cueing in the Residence Situation Series (Round 2)*

The cueing for main residence situations has been discussed previously in the relevant categories. This section adds some additional information about the functioning of some of the minor cues in the Round 2 series.

The category for retirement communities and nursing homes (14e) was used once. It brought in mention of a snowbird's winter location, which was considered a retirement community. (The wording of the category is, "Anyone who spent a lot of time around the census in a facility like a nursing home? Or in a retirement community?")

The cue about staying to help relatives or friends (14g: "Anyone staying with relatives or friends to help them, for any reason?") elicited mention of two situations, although neither one was relevant to the duplication in the case. One was a mention of brief trips made to "check up on" elderly in-laws. The other was mention of a woman who spent every other day with her sick and elderly mother, alternating the responsibility with her sister.

The cue about military situations (14i: "Anyone who stayed somewhere because they are in the military or are deployed?") brought in one mention, which was out of the reference period and not relevant to the whole household duplication. It is interesting to note that another case revolved around military personnel, but they had finished their tours and were "processing out." The respondent did not mention them at this cue because they were no longer deployed.

As we have seen, the final category (14j: "Anyone else who stayed somewhere else for an extended period during the spring or summer of last year, 2010?") received some responses

about the movements of children. In one of these instances, the situation had not been previously mentioned. The cue also brought in the description of a daughter's 3-month stay with an adult sister during the census period and that she was gone on April 1. This was viewed as an extended visit, and not as temporary custody.

4.7.4 Additional Cueing: Reading the Census Form

Both protocols included instructions to the respondent to read the printed residence rules and the coverage questions on the MOMB form. This was primarily an attempt to see if respondents recognized their own situations in the rules, and to cue them to provide additional information if necessary. The following sections discuss the success of this strategy.

4.7.5 Reading the Residence Rules (Round 1)

We showed the residence rules to respondents, and asked if they recognized or had seen them. A few seemed to recall the general look of the residence rules box, while others claimed to recall the content. Most claimed to have at least some familiarity with the rules. Many respondents reacted to seeing the rules by simply stating that they did not apply to them.

Showing people the residence rules also elicited comment on aspects of the wording and look of the form. Issues that were commented on included

- the April 1 date, which was considered somewhat arbitrary;
- the notice of the "including babies," and the advice that we should be careful to enumerate them;
- the mention of the example "nursing home" along with a story about the respondent's mother who had been in one in the past; and
- complaints about what was italicized or boxed, or the color of the form

Despite these generally uninformative reactions, occasionally looking at the rules added to the understanding of the respondent's household or residence situation. For example, one man described his former living situation as having been nonpermanent, after seeing these instructions. Another brought up previously unmentioned college students who had not been listed and were not duplicates. Another respondent associated a nonduplicated "friend" listed on the roster with "no permanent place to stay," providing more indication of that person's residence situation.

Thus, the reaction to seeing the residence rules was generally nonproductive in terms of eliciting information about duplicates in which we were interested. It may be that the information contained in the residence rules box is too complex to absorb quickly, and this

contributes to the pattern of picking one more or less tangential aspect of the residence instructions on which to comment. However, it serves as a general background to the discussion of the coverage questions.

4.7.6 Reading the Residence Rules (Round 2)

In the Round 2 protocol, reading of the residence rules followed a long set of cues about people who have more than one place to live. These cues (in Question 14) are discussed previously. The content of Question 14, in fact, mirrors the residence rules very closely, as some respondents commented. Thus, the residence rules themselves were not productive in eliciting new living situations in this context.

4.7.7 Reading the Coverage Questions on the Census Form (Round 1)

Two coverage questions are included in the form. Question 2 is intended to attract mention of people who are "staying" with the household. Question 10 is intended to identify persons with other residences.

Some respondents also had little to say about these questions, and gave interviewers quick negative responses. They may have been exhausted by repeated probing, which had been conducted in several ways by this time. It also caused a few respondents to become agitated or grumpy. In response to Question 10, one respondent burst out: "No, and that's what I'm saying. Everything is No, because it's just me and my baby....That's what I'm saying. So input is NO!" For Question 2, one respondent thought of her adult children at first (living elsewhere) and then remarked: "You didn't ask for aliens? How about my cats?"

However, in other cases, respondents produced information that was relevant to the living situations of persons in or connected to the household. They produced new information, including the first mention of a few situations of high interest to us, since they were relevant to duplications or other movements in the household. In other cases, they provided extended explanations of situations that we had already elicited or discussions that may be relevant to the duplication process. That is, not all of the elicited information goes directly to duplication, although some of it does, but the cues can provide a fuller understanding of the households in which we interviewed.

Question 2 reads:

2. Were there any additional people staying here April 1, 2010 that you did not include in Question 1? Mark all that apply.

- Children, such as newborn babies or foster children
- Relatives, such as adult children, cousins, or in-laws
- Nonrelatives, such as roommates or live-in baby sitters
- People staying here temporarily
- No additional people

Productive data derived from Question 2 question include the following.

Question 2

- Explanation of discussing the listing of a child with the ex-spouse
- Mention of relatives who "stay" for visits (not enumerated; generally short stays)
- Mention of a "floater" who stayed on and off for about a year (not enumerated)
- Explanation of a "friend" who was staying in the household (nonduplicate)
- Explanation of a relative using the home as a convenience address ("My oldest brother. Actually he was staying somewhere else. He was staying with his girlfriend, but officially he lived here. His mail comes here, his ID, it's all for this house.") First mention of this situation
- First mention of a mother-in-law who "lives with" the family about 6 months a year (This person was not duplicated because she had not moved along with the duplicated family, although she was expected to return to live with them shortly.)

Question 10 reads:

10. Does Person 1 sometimes live or stay somewhere else?
 No Yes — Mark all that apply.
 In college housing For child custody
 In the military In jail or prison
 At a seasonal or second residence In a nursing home
 For another reason
→ If more people were counted in Question 1, continue with Person 2.

Productive data from Question 10 include:

Question 10

- Eliciting information about the amount of time a child spends with the ex-spouse
- Further explanation of a custody situation (not the first mention, duplicated child)
- Eliciting information about an ex-spouse pursuing joint custody (This child mainly lives with his mother: the respondent in the case is the father's fiancée, who did not remember listing him on her census form.)
- First mention of two duplicated children having lived at another address previously
- First mention of a household member renting a room in another city for work (not the address where this mover was duplicated)
- Explanation of a grandson staying for 6 months, for whom R will not seek custody (This child is not the duplicate.)

It is of particular interest that Question 10 functioned to elicit information about child custody. However, this is not always the result of the specific cue, "for child custody." When

respondents are asked which category they thought would apply to the child in question, some do not choose that category. Although it would take additional cognitive interviews to corroborate this finding, several parents said that the "for child custody" category did not apply, preferring "seasonal or second residence" or "for another reason." Such respondents may not regard the presence of the child in another household as "joint custody" and treat custody as a unitary phenomenon. The category "for child custody" may be seen by such respondents as inapplicable because it implies that the other household also has "custody" of some kind. The following exchange may be illustrative:

R: Other than my son. Even then he spent a good bit of time with his mother.

I: Which category are you looking at?

R: Does this person live or stay somewhere else, and for my son, the answer to that is yes. He's not in jail, for child custody, he's not in custody, in college housing, at a seasonal—none of this applies. For another reason.

I: It's not custody?

R: No it's not custody. No. In fact, I think I have custody...

Another explanation was that marking "for custody" was unnecessary because it was very unlikely that the child's father would respond to the census at all.

Considering the relative lack of new information when looking at the residence rules and the greater success of the coverage questions in this respect, we conclude that the specific nature of the categories is useful in cueing respondents to provide relevant information.

Interviewers sometimes asked respondents if they had marked the coverage categories they were discussing. Their memories for this were very vague, even when they thought they had marked something. It is impossible to compare these memories with census-provided data in any meaningful way. However, it should be noted that the census-provided data covering Round 1 cases shows no coverage category marked in any of enumerations, in any mode, in any of the 25 cases, in either household. Since some of the respondents clearly had information to provide, this is rather puzzling. It is clear that the coverage questions are not serving as adequate flags for the living situations described in these 25 cases.

4.7.8 Reading the Coverage Questions (Round 2)

The cognitive probes associated with the coverage questions in the Round 2 protocol have already been discussed in the sections on Custody (**Section 4.4.9**) and Second Homes (**Section 4.4.14**).

Because respondents saw the coverage questions after the main elicitation series in Question 14, they did not serve to cue many new situations. In one instance, the

undercount question (Question 2) reminded a respondent that a roommate had been present during the census. She could barely remember the roommate's name and had not listed her on the roster. It is probable that this was a census omission, but the protocol is not designed to follow up on omissions. In this instance, the undercoverage question led to a discussion of other times when the respondent rented a room to people she found on Craigslist, and to the times when she herself rented a room while working in another state.

Most respondents could not recall if they had checked anything in Question 10. However, it is interesting to note that at least one respondent in a custody case would have preferred to mark "for another reason" rather than "for child custody." This was an informal custody situation, and the "other reason" was expressed in terms of the complex family situation that accounted for this child living with her.

One other observation was made about respondent performance in Question 10. A common misreading of "Person 1" is "one person." This misreading led one respondent to assume that the question was asking about whether he and his wife were separated. His interpretation was: "Does one person sometimes live or stay somewhere else?," and he insisted that they lived together. It required a careful look at the categories to discover the intended meaning. However, it should be noted that a quick "no," applicable to the misinterpretation, may in fact prevent reading the categories.

4.8 Additional Cueing: Final Question Series for Rounds 1 and 2

The two protocols asked a different series of questions at the end of the protocol. In Round 1, additional questions were asked to further explore the respondents' experiences with the census, focusing on the preferred mode of response and census outreach. In addition, follow-up questions were asked to make sure we understood the living situation of each person in the household. In Round 2, the protocol focused on additional questions about the living situations of people the household, including an assessment of where each person "lived" and "stayed" on April 1.

4.8.1 Final Question Series (Round 1)

Living Situation Questions in Round 1

For both proxy and nonproxy interviews, we asked questions designed to elicit other places with which the respondent or persons in the household had connections. For proxy respondents, Question 30 asked: "Can you tell me about the living situation of each other person listed here? Do any of these people stay other places sometimes—like the types of places we have mentioned?" For nonproxy respondents, Question 38 asked, "Tell me a little about your own living situation around the time of the census. Was there anyplace else that you stayed often?" Question 39 asked, "Were there other households where you had ties and visited a lot?"

Perhaps because we had already probed for other places to live (using the hypothetical questions and the census form) these questions were not effective in eliciting places where people were or might be duplicated. In general, these questions elicited brief or temporary stays—mostly to friends or relatives or to tend to properties in other locations, etc. The terms that were used to describe them were "visits" and "staying over." Although we were able to elicit locations and sometimes addresses, the places mentioned in response to these questions were not particularly relevant to duplication. (We were not told about some of the visits to "unmarried partners" that might have been useful.)

4.8.2 *Live and Stay Questions (Round 2)*

On the whole, the questions about where people were living in 2010 and staying on April 1 produced answers that were entirely consistent with the information respondents had provided previously in the interview. They had already told us where they thought household members lived and reiterated the information here. For example, in one dependent case where custodial parents had radically different views of where the child lived, introduction of the terms "live" and "stay" did nothing to elicit further information about the child's movements. The father had told us previously that his daughter spent most of her time with him, and here he said that she lived with him. In another instance, a sister had included her brother on the census roster, but she said in the interview that he lived with their mother: this information was repeated in this section. It seems that whatever version of the household's residence was being offered, it had by this time in the interview become thoroughly rehearsed and well remembered. Thus, in this final position, the concepts of "live" and "stay" were generally not useful in revealing new information that would be relevant to resolving the duplications.

However, when the respondents had already discussed situations in which there was a movement between two households, the discussions of "live" and "stay" were somewhat more interesting. Some respondents who had indicated that they or someone else "lived" in two different places made some linguistic distinctions between the two residences. For example, one grandmother who had told us that her grandson visited his father on weekends made a distinction between the father's home (where she said he "lived") and her home where he "primarily lived." Another respondent with dual residence in two states differentiated between a home recently established for a job and the home in the state where she had continuing ties: the former was her "primary residence" and the latter her "long-term residence." These distinctions could be useful in framing instructions for respondents in the future, but would require further testing.

4.8.3 Mail and Official Address Questions (Round 2)

One of the final questions asks, "Where did/does this person get his/her mail? What address does he/she use for "official purposes?" The one case of a confirmed convenience address had already been discussed previously in the interview, and is not further discussed here.

Some interesting information emerged about mailing addresses that may have relevance to duplications. For example, military families may keep an address that represents their residence at the start of military service, and does not reflect changes in residence over the years. One military wife had kept her driver's license in the state where she and her husband were born, renewing it during vacations. (However, the husband had always changed his license to the state where he was stationed.) Snowbirds indicated to us different patterns for dealing with mail. One couple had everything forwarded from the place that they considered their "permanent home," while the other couple said that they got everything in both places. We also heard of one daughter-in-law who never gets mail anywhere because "she does everything on the Internet."

4.8.4 Places Stayed Often and Ties Elsewhere (Round 2)

The last two questions in the series were:

Q. 46: Tell me a little about your own living situation around the time of the census: was there any other place you stayed often?

Q.47: Were there any other households where you had ties and visited a lot?

These questions were intended as a last attempt to collect information about the respondents' movements. Although they were intended to be asked about the respondent, they were sometimes asked about other persons in the household. Largely these questions elicited short-term trips and visits to relatives. A trip to Las Vegas, trips to "check on" elderly relatives, and visits to see relatives on holidays were mentioned. These were all relatively short term, and would not have affected duplication.

However, some information that was relevant to our cases, or to duplication in general, emerged here. These included

- The discussion of an apartment that a duplicated niece maintained to see her boyfriend, which did not emerge until this very last section of the interview. In this instance, the respondent indicated that the niece "stayed with" the respondent's household, but "visited" her apartment.
- A brief 2-week "visit" to relatives: This not revealed case listed a woman in two states, but the second state was not mentioned until this question.
- A young adult respondent living with his father used Question 46 to discuss his own presence in a mother's home on weekends to "check up on her."

- A respondent described her practice of renting rooms in people's homes while travelling for work. She had mentioned similarly renting rooms in her own house, but did not mention her travels until this question series.

These instances indicate that asking about places that are briefly visited can at least shed some light on duplications.

4.8.5 Preferred Mode and Census Outreach (Round 1)

A series of four questions ended the Round 1 protocol, where respondents were asked which mode they would prefer to use to answer the census, whether they had any specific difficulties with giving information over the phone, whether they had seen any census advertising, and whether they had used any "census-based resources."

Preferred Mode

The most popular mode among our respondents is mail. Eleven respondents chose this as favorite, while eight preferred an in-person visit, and six preferred an online option. We did not check to see what mode their actual return was, since their memory of these enumerations was often inaccurate. It should also be pointed out that we had just showed them the mail form.

Respondents who preferred mail told us that it was familiar and comfortable to them. They sometimes remarked that they were old fashioned or traditional; there was a sense that they saw this as a fading option, rapidly becoming obsolete. For example, "They probably going to want it on their phone in 2020; on their Blackberry. Me personally you can mail it to me. I'm older." Or, "Ten years from now technology may be very different. I like doing it by mail, but it may be in 2020, we'll all have Dick Tracy watches and you hit a few buttons and it's done."

These respondents also preferred mail mode because they saw it as convenient. They could begin to fill out a mail form whenever they liked and had the ability to put it down and complete the form at a later time. Implicitly the comparison is with an enumerator coming unexpectedly to the door. The ability to leave the paper form in a pile for a week seemed to be an advantage for some. Some come to the preference by a process of elimination. One respondent told us that she does not like the Internet and might hang up on someone calling on the phone, and, therefore, mail was her choice.

Those who objected to the mail mode thought the form was too likely to get lost in that pile of papers. One respondent thought that mail was difficult for some people because they could not afford a stamp.

Two reasons attach to the preference for an in-person interview. Some respondents see it as the most convenient, because they would not be able to procrastinate and would get the

interview done on the spot. Others value the personal interaction. They mention being able to ask questions and get immediate answers. Another theme that emerged was the desire to be able to assess the person to whom the information is being given: "I'd rather do it in person. I like to see if the person is listening to me. I like to be where I am looking at the person and they are looking back at me." This immediate personal evaluation can be attached to an assessment of trust: "When you talk to somebody you can look at them. You can see things, whether the person look at you, or the person look down, you start looking down, what's wrong?" They trust their own ability to evaluate the other person in an interaction: "People can feel if they can trust them or not. It's a real personal assessment." Enumerators are also seen as able to allay confidentiality concerns, if they are considered likable. The individual quoted previously described getting answers to confidentiality questions from an enumerator he described as "nice" and professional. Another respondent pointed out that the enumerator he talked to had shown his ID, which would not be possible over the Internet or on the phone.

Some respondents say that they prefer the Internet. These are generally people who are at ease with computers and use them frequently. Some respondents spoke of doing taxes, paying bills, and banking online, while another indicated that she frequently uses a computer at work and has "a computer around me all the time." They are not concerned about computer security. One respondent described looking for the security icon on the pages he visits and mentioned encryption. Another was familiar with "good government Web sites" that she trusted. In addition, those who prefer the Internet option seem to feel that the computer merits more of their attention, and, therefore, the form is less likely to become lost in a pile of papers.

It should be noted that this acceptance of electronic media does not necessarily extend to Internet usage via cell phones. For example: "It's too time consuming. The screen only holds a certain amount. Punches on it, and then afterwards you got to press backspace. I hate that."

It is also interesting to look at some of the reasons that respondents in this data reject the idea of responding by Internet. A few worried about "hackers" and were concerned with security. Others thought they would never bother to log on to a Web site, and that a knock on the door was a better way to get their attention.

Other respondents who reject the Internet option did not understand the process of responding on the Internet, and had a Web-based option confused with e-mail. One respondent thought that it wouldn't be very practical: "I'd prefer to do it online, but I don't think it would be possible because how would they get everyone's e-mail accounts?" Since many respondents already believe that the census is personally addressed to them, this is not a great leap. Others respondents worried that if the form was sent by e-mail, it would

bypass their inbox, and be incorrectly identified as "spam" or junk mail and they would never find it.

Answering the census over the telephone is the least favorite of all of the response options. It is occasionally mentioned as acceptable along with some other mode; however, no respondent chose the telephone as their top choice. Where they thought they would give information over the phone, they often indicated restrictions; for example, they would not give financial information over the phone or offer a social security number. When they think specifically about the questions on the census (which they had just seen), they may conclude that the information would not be dangerous "...because they're just basic questions, it doesn't go into any detail."

Security concerns are a major reason for the unpopularity of this mode. In general, this is because it is difficult to know who you are talking to, since there is no way to verify ID. People mentioned scammers and "con artists" who use the telephone as well. They also thought of practical difficulties, such as those who will not answer a call from an unfamiliar phone number on caller ID and people who routinely hang up on telemarketers. In addition, some see the phone as inconvenient because they have to answer right away, while they are busy or, in one case, while they are driving. The idea of having to input data by using the telephone keys was also brought up as a drawback.

These questions were not asked in Round 2.

4.8.6 Census Advertising (Round 1)

Most respondents told us that they were aware of census advertising. Considering how closely respondents were able to reproduce the census messages about counting population and proper apportionment of resources, it appears that the messages were transferred effectively. One respondent, for example, told us that he remembered advertisements saying "Fill it out!" and, "Make sure you get your resources!"

Some respondents were not sure what advertising they had seen, but recalled the omnipresence of the message at the time. One respondent thought this was "overkill." Various modes were mentioned, including television, radio, and print media such as billboards. Some respondents recalled particular TV ads. Advertisements with celebrities were mentioned, as was a diversity-oriented advertisement where faces of different ethnicities morphed into one another. TV was not a universal mode, however, since some respondents watched little TV or only watched using a DVR, which allows them to avoid commercials. Radio was remembered as an effective mode by a few respondents. In particular, one popular African American morning personality was mentioned as having talked extensively about the census. One respondent mentioned seeing signs on the sides of buses.

This question was not asked in Round 2.

4.8.7 General Census and the Census Experience Questions (Round 1)

The first question, "What comes to your mind when you think about the census?" was largely interpreted as a question that was designed to elicit the respondent's understanding of the purpose of the census. The answers were generally in terms of counting the population and making sure that benefits are received by local communities. It is interesting to note how closely this mirrors the motivational information provided by the Census Bureau.

These questions do not appear in the Round 2 protocol.

4.8.8 Census-based Resources (Round 1)

This question was asked to determine where respondents might be receiving their information about the census. It should be noted that the term "census-based resources" had no meaning for most respondents, who relied on examples provided in the question or by the interviewers. For the most part, these respondents had little personal contact with census-based resources. Only one respondent reported having called the toll-free number to ask a question. A few others had some awareness of census programs. One respondent reported that a census help desk was located in the municipal building in which she worked, and another knew that there had been a census table at her church, but neither of these respondents had actually used these resources. Another respondent reported that her teenage daughter had encouraged her to complete the census, and thought that there must have been an information program at the daughter's school.

This question was not asked in Round 2.

4.9 Recommendations for Further Research

4.9.1 Recommendations that Were Made for Round 2 Qualitative Research

The following recommendations were made based on the analysis of Round 1 data for inclusion in Round 2:

- Recruit more respondents from underrepresented groups, especially Hispanics and Asians.
- Recruit respondents who represent a wider selection of reasons for duplication. These may include immigrants involved in serial migration, commuter workers, military families, GQ duplications, and seasonal residents. These may be available in other venues (California and New York).
- Provide qualitative interviewers with all data from both duplicated households: names, ages, addresses, and relationship information.

- Include all minor children in the rosters for the household.
- Include possible new foci for the interview (if desired): extended probing about periodicity in dual residence situations, such as custody; asking respondents to look up addresses to improve the quality of address data.

4.9.2 Directions for Further Qualitative Research Based on Round 2

- Further research into custody cases may add more understanding of how respondents see the living arrangements of children. This research should include informal and formal custody and custodial relatives other than parents. Research should focus on the interrelationship between custody expectations (both informal and court defined) and perceptions of where the child “lives.” Critical to this research is interviewing both sides of the arrangement.
- Further research into duplications caused by second homes should investigate the role of shared family properties and co-owned properties.
- Wording and use of the coverage questions should be further investigated. The categories “for child custody” and “seasonal or second residence” used in Question 10 appear to carry some connotations that may prevent certain respondents from using them. The wording of the stem coverage question proved to be easily misread and might need to be reviewed.
- Further research into the way that respondents talk about and conceptualize patterns of movement would help to frame questions that may disambiguate true census residence.
- Respondents’ preferences for reporting monthly patterns and calculating based on altering expectations up or down have been noted briefly here, but would require further research to create useful probes.
- Further qualitative research into privacy should focus on the reasons why respondents choose to suppress data and to create self-consistent versions of living situations to “claim” certain household members.
- Further research into explanations of the residence rules may help to deal with privacy issues, and to create a context for respondents to understand the concept of census residence, as distinct from their view of who lives with them.
- Further qualitative research may help to assess the role of the suppression of data in respondents’ tendency to create self-consistent, if erroneous, reports.

5. RESULTS AND RECOMMENDATIONS FROM COGNITIVE INTERVIEWS

This chapter presents results and recommendations from the 226 cognitive interviews completed over two rounds of interviewing, including two pairs of independent and dependent interviews. The cognitive interviews covered 27 living situations (18 HU and 9 GQ) and were completed with respondents who were dups themselves or household members reporting for the dups.

The reader is encouraged to consult the glossary of duplicate-related terms at the beginning of this report and the overview of TCFU structure and questions in **Chapter 2, Section 2.4.2**.

5.1 Uncovering the Dup

One of the goals of the cognitive study was to test the extent to which the TCFU questionnaire was adequate in uncovering dup addresses in a large spectrum of living situations. This section discusses the results of this effort.

5.1.1 *Phone Match versus Nonphone Match*

Phone match cases are those where the dups appear in two different housing units, and gave the same phone number on each census questionnaire. All phone match cases are “Type 1” interviews. As shown in **Table 5-1**, all except one phone match interviews were able to verify the duplication (“not revealed dup”).¹³

In contrast, nonphone match interviews were not as successful, with 58.4% of the duplication verified. Nonphone match cases are those where the dups appear in two different housing units and gave different phone numbers on each census questionnaire. All nonphone match cases are Type 2 interviews. In approximately 21.6% of nonphone interviews, the respondent did not confirm or mention the other address in the recruitment file, resulting in the duplication not being revealed. The remaining interviews comprise 20% of the nonphone cases. For those cases, the interviews and Census Bureau’s review of data indicated that the matched people are likely different people, resulting in confirmed false match or suspected false match. In one case (EP5785), it was a housing unit mix-up where the same people were listed at two addresses by mistake because of either mail being delivered to the wrong address or by an interviewer using the incorrect form to enumerate them.

¹³ This was a Type 1 partial household match interview (cell 1e where all dups are adults), and the dup address was not revealed during the interview (TF4105). The two dups were roommates who had parted ways. Although both addresses were associated with the cell phone of the one of the dups (the respondent), and he was listed as the householder for both sides in the recruitment file, the only other address provided during the interview was for a girlfriend that did not match the other side listed in the recruitment file.

Table 5-1. Phone Match versus Nonphone Match by Case Outcome

Case Outcome	Nonphone Match (Type 2)	Phone Match (Type 1)
Verified dup*	73 (58.4%)	41 (97.6%)
Not revealed dup	27 (21.6%)	1 (2.4%)
HU mix-up	1 (0.8%)	0 (0.0%)
False match	10 (8.0%)	0 (0.0%)
Suspected false match	14 (11.2%)	0 (0.0%)
Total	125 (100%)	42 (100%)

* For nonphone match interviews, 66 dup addresses were verified in the TCFU, 1 was verified in the TCFU and EHC, 1 case in both TCFU and elsewhere in the cognitive interview, and 5 were verified elsewhere in the cognitive interview. For phone match interviews, all were verified in the TCFU.

5.1.2 Whole Household versus Partial Household Dups

Whole household match cases were more successful in having the duplication verified (Table 5-2). Census Bureau defines a whole household match to be when every person at one address was also counted at the second address. A Type 1 or Type 2 interview can have a whole or partial household match. In 80% of the whole household interviews, the respondent confirmed or mentioned the other address in the recruitment file. In comparison, partial household matches were less successful. These cases are matched because some people (but not all of them) in one HU match to some people (and possibly all of them) in another HU, and 61% were verified. Approximately 19% of partial household match cases did not reveal the duplication when the respondent did not confirm or mention the other address. Another 20% of partial household match cases were determined to be a false match or suspected to be a false match because the interviews and Census Bureau's review of data indicated that the matched people were likely different people. Whole household match cases also resulted in false matches, not revealed dup, and in one case, an HU mix-up, but together they comprised less than one fifth of those interviews.

Table 5-2. Whole Household versus Partial Household Dups by Case Outcome

Case Outcome	Partial HH Match	Whole HH Match
Verified dup*	64 (61.0%)	50 (80.6%)
Not revealed dup	20 (19.0%)	8 (12.9%)
HU mix-up	0 (0.0%)	1 (1.6%)
False match	9 (8.6%)	1 (1.6%)
Suspected false match	12 (11.4%)	2 (3.2%)
Total	105 (100%)	62 (100%)

* For partial household match interviews, 59 dup addresses were verified in the TCFU, 1 was verified in the TCFU and EHC, 1 case in both TCFU and elsewhere in the cognitive interview, and 3 were verified elsewhere in the cognitive interview. For whole household match interviews, 48 were verified in the TCFU and 2 elsewhere in the cognitive interview.

Table 5-3 shows case outcomes across phone/nonphone and whole/partial household matches. Regardless of when there was a whole or partial household match, phone match

interviews were more successful than nonphone match in revealing duplication. In only one phone match interview, the respondent did not confirm or mention the other address listed in the recruitment file, and it was a partial household match.

Among nonphone match interviews, a whole household match resulted in 68.4% of interviews having the duplication verified. This is compared to 54% of partial household match interviews. Proportionally whole and partial household match interviews both did not reveal duplication in about 21% of the interviews. However, more partial household match interviews were determined to be a false match or suspected to be a false match, for a total of 24.1%.

Table 5-3. Case Outcome by Phone/Nonphone Match and Whole/Partial Household Match

Match	Partial HH Match	Whole HH Match
Phone match		
Verified dup	17 (94.4%)	24 (100%)
Not revealed dup	1 (5.6%)	0 (0.0%)
Total	18 (100%)	24 (100%)
Nonphone match		
Verified dup	47 (54%)	26 (68.4%)
Not revealed dup	19 (21.8%)	8 (21.1%)
HU mix-up	0 (0.0%)	1 (2.6%)
False match	9 (10.3%)	1 (2.6%)
Suspected false match	12 (13.8%)	2 (5.3%)
Total	87 (100%)	38 (100%)

5.1.3 Uncovering Dup Address by Cells

Table 5-4 presents the success of uncovering the dup by cell type.

Type 1 Cases (Phone Match, Whole or Partial Household Match)

Forty-two Type 1 interviews were completed and all cells were successful in verifying the dup address, except for cell 1e (partial household, all dups are adults) where one of the seven interviews resulted in the respondent not mentioning or confirming the dup address. That interview (TF4105) was conducted with one of the two dups who were roommates. The respondent did not recognize the other side of the address even though his cell phone was listed with that address, and he could not confirm if the other dup would know that address either. The other dup moved out as of August 2010.

Type 2 Cases (Nonphone Match, Whole or Partial Household Match)

Among the 125 Type 2 interviews shown in Table 5-4, 73 (58.4%) interviews revealed the dup address, and 27 (21.6%) did not reveal the dup address. Twenty-five (20.0%)

interviews were suspected or confirmed to be false matches, and in one instance, review of data showed that it was a HU mix-up.

- Among cells where all dups are adults and seniors (cells 2a and 2b), when the whole household matched, the interviews were able to verify the duplication at 82.4% and 57.1% of the number of interviews completed, respectively. However, when all dups are adults and seniors were partial household matches (cells 2e and 2f), their success was below 50% of the number of interviews completed for the cell. They were revealed at 46.2% and 45.8%, respectively. These two cells also had the highest number of confirmed or suspected false matches among all Type 2 cells.

Duplication involving children, regardless of whole or partial household match, seemed more often successfully verified compared to other cells. Duplication was verified at 60.0% for cell 2c, 73.7% for cell 2g, and 69.2% for cell 2h.

- The least successful cells are those that involve another combination of ages. This observation is consistent for both whole and partial household matches (cells 2d and 2j), because respondents in at least half of the interviews did not mention or confirm the dup address (50.0% for cell 2d and 60.0% for cell 2j). However, both cells had the fewest number of completed interviews among all Type 2 cells.

Type 3 Cases (HU and GQ)

Type 3 cases are those when duplicates appear once in a HU and once in a GQ. Among the 59 Type 3 interviews, 41 (69.5%) interviews verified the dup address, and 10 (16.9%) did not reveal the dup address. Eight (16.0%) interviews were suspected or confirmed to be false matches.

- Although the majority of Type 3 interviews were determined to have verified the GQ dup address, respondents in 15 or 37% of these 41 interviews could not give a complete address for the GQ. These respondents were able to provide the facility name or a partial address that gave enough information to allow matching to the dup address during the data review conducted by the Census Bureau.¹⁴ The need for Census Bureau review as an indication for a clerical operation is discussed in Chapter 2 Methodology and Chapter 6 Key Lessons Learned.
- The nursing home GQ cell (3f) was the most successful with 100% verification. Eight interviews were completed.
- The religious GQ cell (3j) was the least successful with 100% nonverification. Because the recruitment file offered a limited number of HU-Religious GQ match cases, only one interview was completed in this cell and it was determined to be a false match during Census Bureau's data review (BS99250).

¹⁴ The 15 Type 3 interviews that gave only facility name or a partial address and were verifiable included: 1 interview with a dup about military GQ (BS99310), 4 interviews with proxy respondents about college GQ (BS99129, BS99191, TF98606, TK96567), 4 interviews (1 dup and 3 proxies) about jail GQ (TK98051, TK98112, TK98124, TK98280), 1 dup interviewed about a group home GQ (SC99006), 4 interviews (3 dups and 1 proxy) about nursing home GQ (BS99136, BS99141, DC99452, TK98106), and 1 proxy interviewed about workers GQ (BS99213).

- Of the completed interviews for the GQ cells in general, six of the nine GQ cells were at least 75.0% successful in uncovering the dup address. They are military GQ (75.0%), college GQ (75.0%), jail GQ (81.8%), nursing home GQ (100.0%), homeless GQ (75.0%), and workers GQ (80%).
 - None of the interviews completed for the military, nursing home, homeless, and workers GQs were confirmed or suspected to be false matches. However, three of the four verified workers GQ interviews were suspected to be misclassified: the duplicate person was a minor in each of these cases and belonged to a boarding school (BS99072, BS99213, SC96811).
 - The college GQ cell had 12 completed interviews, which is the highest among all GQ cells. The dup addresses were either verified (9 of 12 interviews or 75.0%) or it was deemed a false match (3 of 12 interviews or 25.0%). There were no instances of not revealed dup.
- The juvenile GQ cell (3d) and group home GQ cell (3e) were not as successful in uncovering the duplication.
 - Only one of the three completed interviews in the juvenile GQ cell verified duplication. The remaining two interviews were determined to be unrevealed and suspected false match.
 - Seven interviews were completed in the group home GQ cell, but only one verified the dup address. Among the remaining interviews, two interviews were suspected to be false matches, and four did not mention or confirm the dup address (not revealed dup). Two of those not revealed dup interviews might have been misclassified (TK99465 and TK99457). During review of the data, Census Bureau indicated that the addresses seem to be correctional facilities rather than group homes. They seem to have been misclassified and the relevant situations did not come up in the interview.

Table 5-4. Interview Outcome by Cells

Cells by Case Outcome	Verified dup*	Not revealed dup	False match, Suspected false match, HU mix-up**	Total
Type 1 Case – Phone Match	41 (97.6%)	1 (2.4%)	0 (0.0%)	42 (100%)
1a: Whole household match: All duplicates are adults	9	0	0	9
1b: Whole household match: All duplicates are seniors	6	0	0	6
1c: Whole household match: The matches include children	5	0	0	5
1d: Whole household match: Any other combination of ages	4	0	0	4
1e: Partial household match: All duplicates are adults	6	1	0	7
1f: Partial household match: All duplicates are seniors	5	0	0	5
1g: Partial household match: All duplicates are children	1	0	0	1
1h: Partial household match: Other age combinations with children	4	0	0	4
1i: Partial household match: All other combination of ages	1	0	0	1
Type 2 Case – Nonphone Match	73 (58.4%)	27 (21.6%)	25 (20.0%)	125 (100%)
2a: Whole household match: All duplicates are adults	14 (82.4%)	2 (11.8%)	1 (5.9%)	17 (100%)
2b: Whole household match: All duplicates are seniors	4 (57.1%)	1 (14.3%)	2 (28.6)	7 (100%)
2c: Whole household match: The matches include children	6 (60.0%)	3 (30.0%)	1 (10.0%)	10 (100%)
2d: Whole household match: Any other combination of ages	2 (50.0%)	2 (50.0%)	0 (0.0%)	4 (100%)
2e: Partial household match: All duplicates are adults	12 (46.2%)	7 (26.9%)	7 (26.9%)	26 (100%)
2f: Partial household match: All duplicates are seniors	11 (45.8%)	4 (16.7%)	9 (37.5%)	24 (100%)
2g: Partial household match: All duplicates are children	14 (73.7%)	1 (5.3%)	4 (21.1%)	19 (100%)
*2h: Partial household match: other age combinations with children	9 (69.2%)	4 (30.8%)	0 (0.0%)	13 (100%)
2j: Partial household match: any other combination of ages	1 (20.0%)	3 (60.0%)	1 (20%)	5 (100%)

(continued)

Table 5-4. Interview Outcome by Cells (continued)

Cells by Case Outcome	Verified dup*	Not revealed dup	False match Suspected false match HU mix-up**	Total
Type 3 Case	41 (69.5%)	10 (16.9%)	8 (13.6%)	59 (100%)
3a: I: Military GQ	3 (75.0%)	1 (25.0%)	0 (0.0%)	4 (100%)
3b: J: College GQ	9 (75.0%)	0 (0.0%)	3 (25.0%)	12 (100%)
3c: K: Jail GQ	9 (81.8%)	1 (9.1%)	1 (9.1%)	11 (100%)
3d: L: Juvenile GQ	1 (33.3%)	1 (33.3%)	1 (33.3%)	3 (100%)
3e: N: Group Home GQ	1 (14.3%)	4 (57.1%)	2 (28.6%)	7 (100%)
3f: M: Nursing Home GQ	8 (100.0%)	0 (0.0%)	0 (0.0%)	8 (100%)
3g: O: Homeless GQ	6 (75.0%)	2 (25.0%)	0 (0.0%)	8 (100%)
3h: P: Workers GQ	4 (80.0%)	1 (20.0%)	0 (0.0%)	5 (100%)
3j: Q: Religious GQ	0 (0.0%)	0 (0.0%)	1 (100%)	1 (100%)
Total	155	38	33	226

* SC79069 (2h) was revealed in TCFU & EHC and SC81874 (2h) was revealed in TCFU and elsewhere in the cognitive interview; 20652097414465623896 (3g) was revealed in EHC; and PM94667 (2a), TF28906 (2c), DC94993 (2e), DC89767 (2f), TK94480 (2f), DC99338 (3g), and BS99213 (3h) were revealed elsewhere in cog iw. The remaining 145 cases were revealed in the TCFU.

** EP5785 (2c) was the only interview determined to be a HU mix-up

5.1.4 TCFU Questions That Were Most Successful across Rounds

The TCFU questions that yielded the most addresses (either a dup address or a new address) varied by TCFU section. **Table 5-5** and **Table 5-6** show which TCFU gate questions resulted in the most addresses provided by respondents in Rounds 1 and 2. Descriptions of the TCFU instrument and the gate questions can be found in **Chapter 2 Methodology, Section 2.4.2**.

For Section F, administered only to adults, the question asking if the dup moved in 2010 produced the most addresses in both rounds. Though the intentions were to have movers screened out in Round 2, respondents still reported some addresses when this question was brought up. The TCFU question about staying with a parent produced the second most addresses in both rounds as well, followed by the question about owning another residence in Round 1 and seasonal or vacation homes in Round 2. The distribution of addresses provided in Section F for Round 2 is shown in **Figure 5-1**. Similarly, **Figures 5-2** and **5-3** present the distribution of addresses for Sections G and H in Round 2.

In Section G, administered for duplicates older than 70 years, asking if the dup has stayed with a son or daughter produced the most addresses in Round 2. Asking if the dup stayed somewhere because of health problems produced the second most addresses. Because a separate question asks about nursing homes, assisted living facilities, and independent living facilities, addresses given in response to staying somewhere because of health reasons were often hospitals. In Round 1, only a few addresses were revealed in Section G and those were for movers, nursing homes, and people staying with a son or daughter.

In Section H, administered for minor duplicates, the question asking if the child had stayed with another parent or grandparent provided the most addresses in both rounds. These situations were often related to divorced or unmarried couples with children, or single parents whose parents (the child's grandparents) would help with watching the child.

Even though **Table 5-6** provides information on Type 3 cases, interpreting the number of addresses by section is not straightforward since a Type 3 case would receive only one of the given sections along with Section R, and the number of specific Type 3 sections completed in this study depended on the recruiting targets (e.g., Section K was administered 11 times since the recruiting target was 11 participants).

Table 5-5. Number of Addresses Provided by TCFU Question in Round 1

TCFU Gate Question	Number of Addresses
Section C	
What is _____ current address?	4
Section F (adults)	
During 2010, _____ moved?*	11
During 2010, _____ stayed with a parent?	4
During 2010, _____ another residence owned or rented?	2
During 2010, _____ stayed with a boyfriend/girlfriend?	2
During 2010, _____ seasonal or vacation home?	1
During 2010, _____ stayed with a brother or sister?	1
During 2010, _____ stayed with any other relatives?	1
Section G (seniors)	
Other than places already mentioned, _____ moved?*	3
During 2010, _____ stayed in a nursing home?	2
During 2010, _____ stayed with a son or daughter?	1
Section H (children)	
During 2010, _____ stayed part of the time with parent/grandparent?	8
Other than places mentioned, _____ moved?*	5
Other than places mentioned, _____ stay part of the time with another relative?	1
Other than places mentioned, _____ stay as a seasonal or vacation home?	1
Total	47

* Represents number of “yes” responses to move question. Each response provided two addresses, but it is unclear as to which addresses were new. Likely, only one new address was revealed from this question since one of the addresses is probably the respondent’s current address.

Table 5-6. Number of Addresses Provided by TCFU Question in Round 2*

TCFU Gate Question	Number of Addresses (New and Dup)
Section C	
What is _____ current address?	14
Section F (Adults)	
During 2010, _____ moved?	22
During 2010, _____ stayed with a parent?	17
During 2010, _____ seasonal or vacation home?	13
During 2010, _____ stayed for following reasons (Laundry List)?	11
During 2010, _____ stayed with a boyfriend/girlfriend?	9
During 2010, _____ another residence owned or rented?	5
During 2010, _____ stayed with a son or daughter?	3
During 2010, _____ attended college, university, or graduate school?	2
During 2010, _____ stayed with a brother or sister?	2
During 2010, _____ stayed with other relatives?	2
During 2010, _____ had a job?	1

(continued)

Table 5-6. Number of Addresses Provided by TCFU Question in Round 2* (continued)

TCFU Gate Question	Number of Addresses (New and Dup)
Section G (Seniors)	
During 2010, _____ stayed with son or daughter?	12
During 2010, _____ stayed because of health problems?	9
During 2010, _____ another residence owned or rented?	8
During 2010, _____ stayed with a brother or sister?	5
During 2010, _____ stayed for following reasons (Laundry List)?	5
During 2010, _____ stayed in a nursing home/assisted living facility/independent living facility?	4
During 2010, _____ seasonal or vacation home?	4
During 2010, _____ stayed with other relatives?	3
During 2010, _____ moved?	2
During 2010, _____ stayed in a rehabilitation hospital/facility?	1
During 2010, _____ stayed anywhere else?	1
Section H (Children)	
During 2010, _____ stayed with another parent or grandparent?	23
During 2010, _____ stayed anywhere else?	2
During 2010, _____ different address for school?	2
During 2010, _____ stayed overnight with friend/neighbor/legal guardian?	2
During 2010, _____ stayed overnight for child care?	1
Type 3 GQs	
Nursing home GQ (M)	9
Jail GQ (K)	8
Any other place (R3)	8
College GQ (J)	7
Other GQs (R2)	5
Juvenile GQ (L)	3
Military GQ (I)	2
Group home GQ (N)	2
Workers GQ (P)	2
Homeless GQ (O)	1
Total	208

*NOTE: These are the number of addresses that were coded in the TCFU as new or duplicate addresses. Information revealed at times other than the TCFU would not be reflected here.

Figure 5-1. Percent of Addresses Provided by TCFU Question in Section F (Adults), Round 2

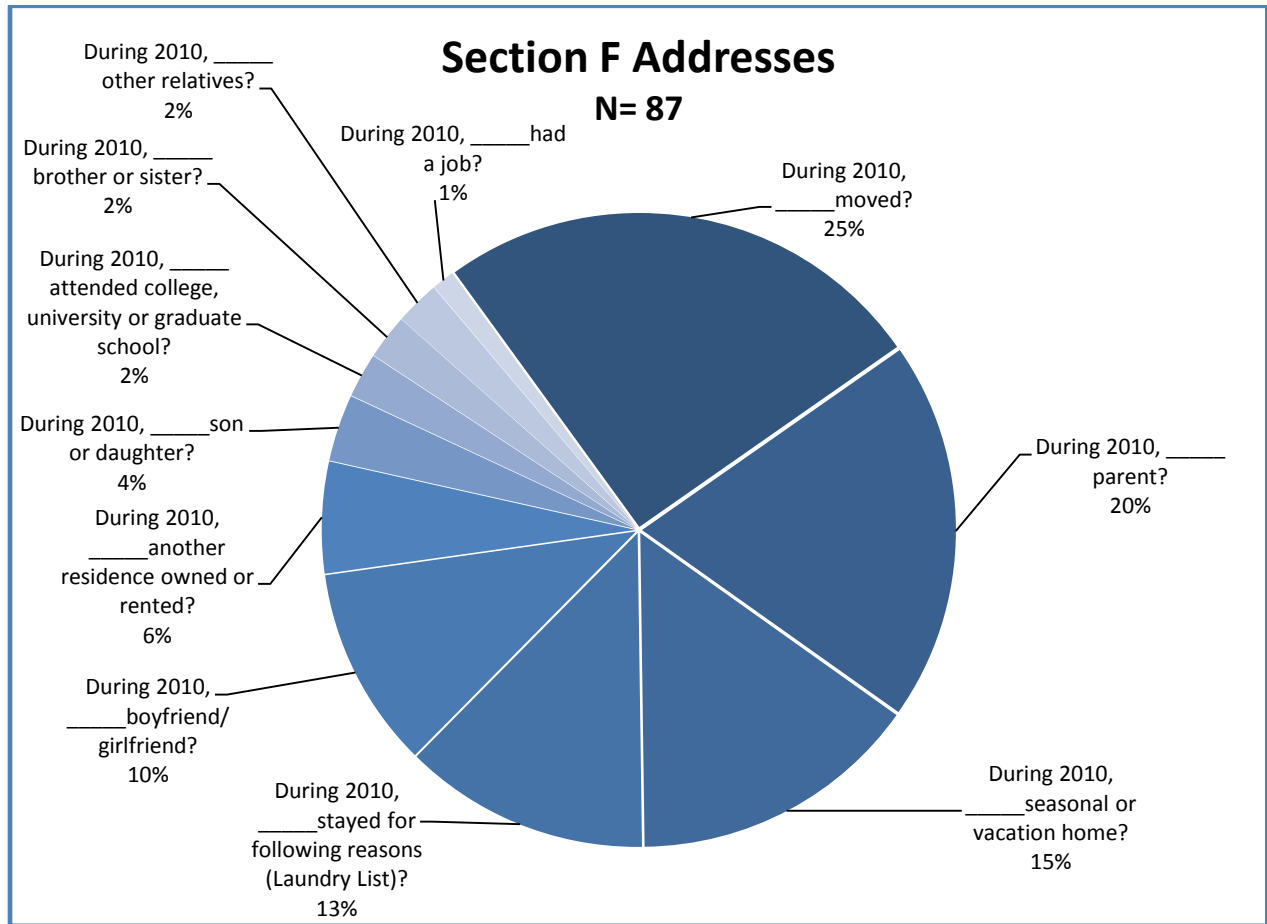


Figure 5-2. Percent of Addresses Provided by TCFU Question in Section G (Seniors), Round 2

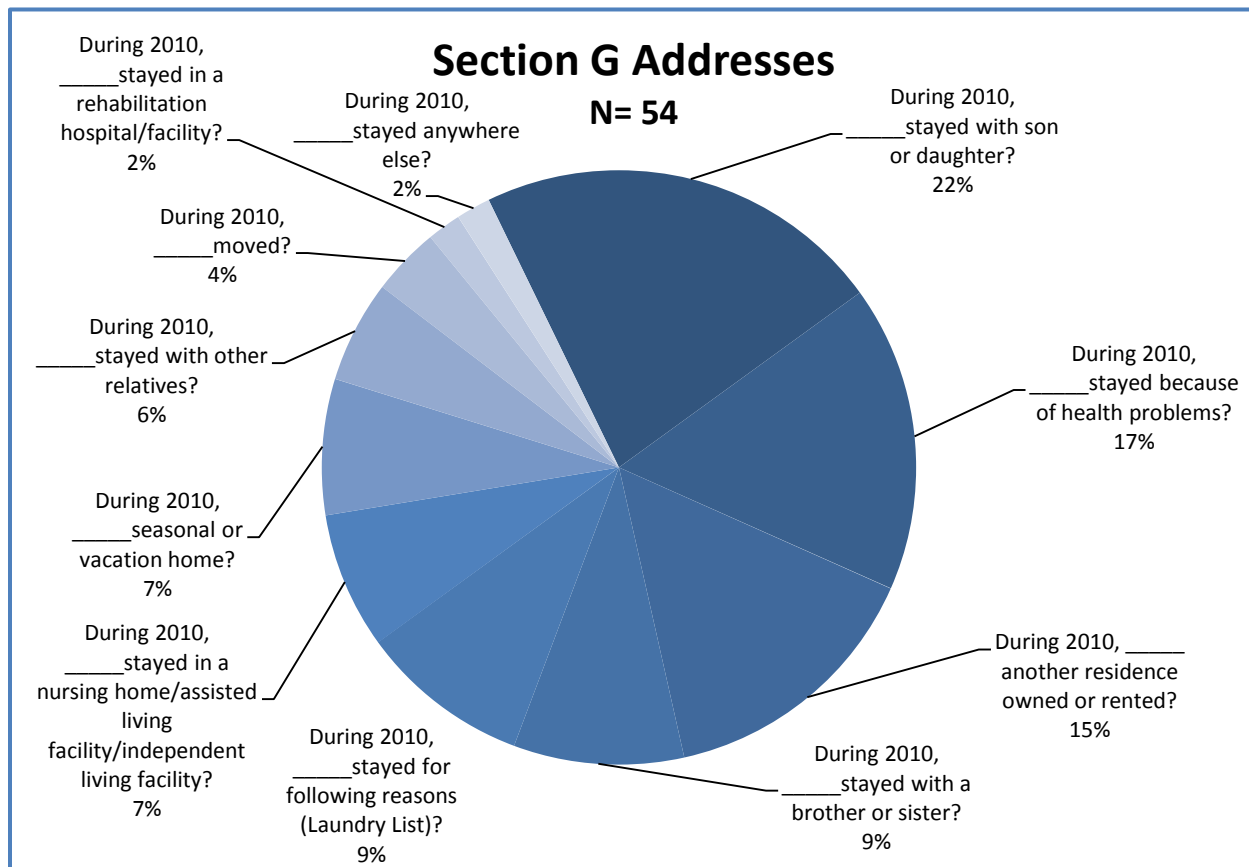
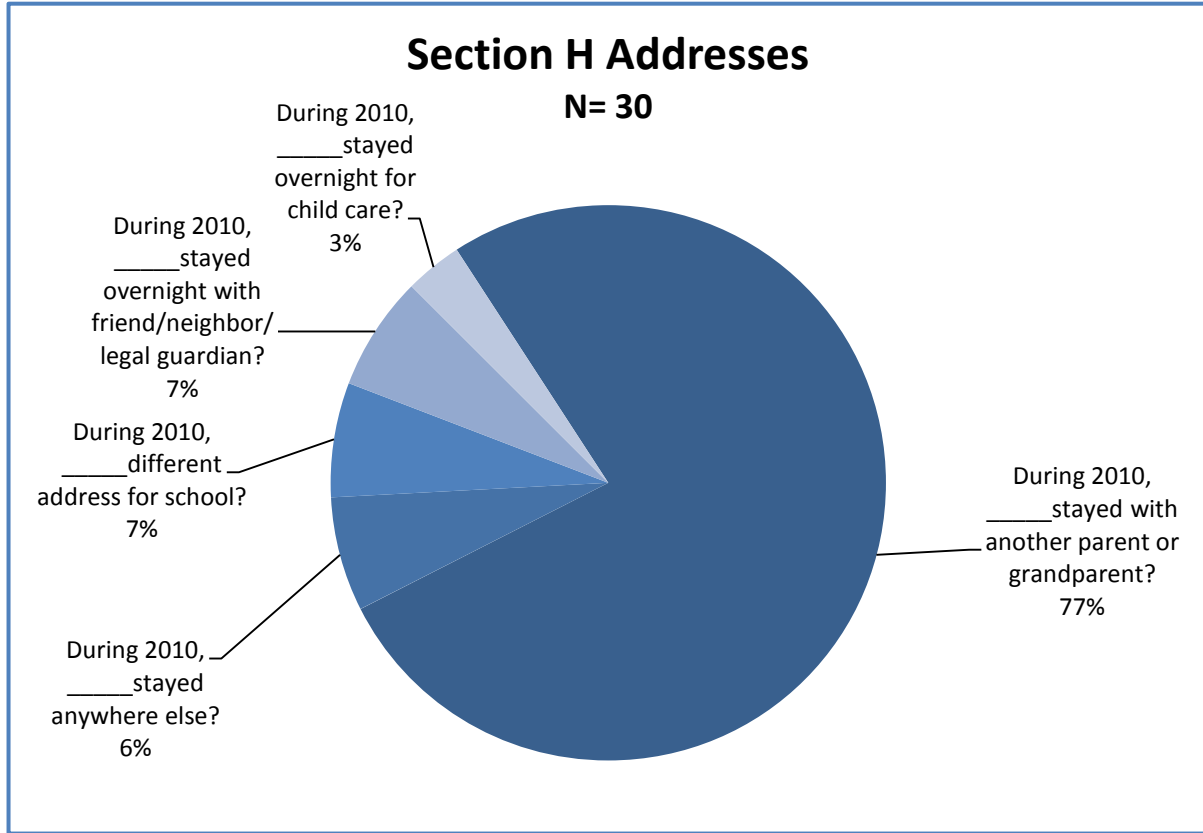


Figure 5-3. Percent of Addresses Provided by TCFU Question in Section H (Children), Round 2



5.1.5 Reasons for Duplication (Living Situations) by Cell for Verified Dup Interviews

Among the 226 completed interviews, 155 verified the dup address, meaning that the respondent confirmed or mentioned the other address that is listed in the recruitment file. However, 35 of the 155 verified cases did not have a complete address or dates and required Census Bureau review, during which it was determined that the information given was sufficient to allow for matching. We categorized their reasons for duplication (living situations) in seven major categories (in order of frequency discovered):

1. Moved,
2. GQ (Type 3 cases),
3. Other property,
4. Relatives' household,
5. Convenience address used for a purpose other than living or staying (e.g., to get mail, for school),

6. Custody,¹⁵ and
7. Nonresident/Completed wrong form.

By examining **Table 5-7**, we observe the following reasons for duplication (living situations):

Type 1 Cases (Phone Match, Whole or Partial Household Match)

A total of 41 Type 1 cases were verified (or 98% of the 42 completed Type 1 interviews). Regardless of whole or partial household match, in each of the cells, “moved” was the most frequently observed reason for duplication, except for when all duplicates were seniors (see cells 1b and 1c). Instead, “other property” was the most dominant reason for duplication for seniors. Only one interview was completed in cell 1g (partial household match where all dups are children) because there were few households classified as 1g in the recruitment file, but it was determined to be duplicated because of “relatives’ household.”

Of these interviews, the Census Bureau determined that two cases were nonresidents and had completed the wrong form, and they were both Type 1 cases. In PM878 (cell 1c, whole household match: the matches include children), the respondent filled out a census form at a house that she was showing as a realtor. The respondent for TK401 (cell 1d, whole household match: any other combination of ages) said that she filled out an “extra” form that belonged to a friend’s vacation home, and then was also enumerated at her own, correct address. In both instances, respondents recognized the dup address, but the reasons for duplication were such that they had completed a form that they should not have as a nonresident.

Type 2 Cases (Nonphone Match, Whole or Household Match)

There were 73 Type 2 cases (or 60% of the 125 completed Type 2 interviews) where the respondent mentioned or confirmed the dup address and across nine cells. Similar to Type 1, four of the cells were whole household matches and five were partial household matches. When all duplicates were children in the partial household match cases (cell 2g), custody and convenience address¹⁶ were dominant reasons for duplication. This pattern was not observed for whole or partial household match cases that include children (cells 2c and 2h)—the households either moved or had another property, but no custody or convenience

¹⁵ The definition of custody differs between cognitive and qualitative interviews. In the cognitive interviews, we use “custody” very conservatively, referring only to legal custody. This term is used more loosely in the qualitative part of the report where nonformal living arrangements are also referred to as custody.

¹⁶ Although the TCFU does not ask about convenience addresses directly, this reason for duplication reveals itself in questions that ask about places for different purposes. For example, in SC11447, the dup address was revealed when the respondent answered “yes” to Section H’s Question 3 series (Other than the places you already mentioned, during 2010, has had a different address for school?) and provided the address. However, details about why and how it was used for school were shared during interviewer probing.

address living situations were identified. Furthermore, when the partial household matched that involved children (2g for all dups are children and 2h for other age combinations with children), “relatives’ household” was identified as one of the reasons for duplication. However, this was not observed in whole household match with children. Those “relatives’ household” cases were: 4 of 9 interviews in cell 2h (partial household match: any other combination of ages) and 4 of 14 interviews in cell 2g (partial household match: all duplicates are children).

Reasons for duplication among whole and partial household match seniors included both “moved” and “other property” (same in Type 1), but partial household match seniors were observed more frequently to be duplicated in relatives’ households (6 of 11 interviews in cell 2f).

When duplicates were adults (not seniors or children), the variety of reasons for duplication differed by whether there was a whole household or partial household match. When the whole household matched (cell 2a), “moved” was the dominant reason for duplication, followed by “other property.” However, in partial household adult matches (cell 2e), reasons for duplication were about equally distributed among “convenience address,” “moved,” “other property,” and “relatives’ household.”

Type 3 Cases (HU and GQ)

Forty-one of 59 (or 69.5%) Type 3 cases verified duplication occurred between a housing unit and a GQ. However, three cases were determined to be misclassified GQ cells: BS99213, BS99072, and SC96811. They were all classified as matching to a Workers GQ in the recruitment file. After review of the data, the Census Bureau suspected that they were misclassified GQ cells because all three duplicated persons were minors who attended boarding schools.

Table 5-7. Reasons for Duplication (Living Situations) by Cell for Verified Dup Interviews

Cells by Type	Verified Dup / Reasons for Duplication							
	Completed wrong form	Convenience address	Custody	GQ	Moved	Other property	Relatives' household	Total
Type 1 Cases – Phone Match	2	1	0	0	18	16	4	41
1a: Whole household match: All duplicates are adults	0	1	0	0	5	3	0	9
1b: Whole household match: All duplicates are seniors	0	0	0	0	1	5	0	6
1c: Whole household match: The matches include children	1	0	0	0	3	1	0	5
1d: Whole household match: Any other combination of ages	1	0	0	0	1c	1	1	4
1e: Partial household match: All duplicates are adults	0	0	0	0	4*	1	1	6
1f: Partial household match: All duplicates are seniors	0	0	0	0	1*	4	0	5
1g: Partial household match: All duplicates are children	0	0	0	0	0	0	1	1
1h: Partial household match: Other age combinations with children	0	0	0	0	2	1	1	4
1i: Partial household match: All other combination of ages	0	0	0	0	1	0	0	1
Type 2 Cases – Nonphone Match	0	6	6	0	31	14	16	73
2a: Whole household match: All duplicates are adults	0	0	0	0	10	4	0	14
2b: Whole household match: All duplicates are seniors	0	0	0	0	3	1	0	4
2c: Whole household match: the matches include children	0	0	0	0	5	1	0	6

(continued)

Table 5-7. Reasons for Duplication (Living Situations) by Cell for Verified Dup Interviews (continued)

Cells by Type	Verified Dup / Reasons for Duplication							
	Completed wrong form	Convenience address	Custody	GQ	Moved	Other property	Relatives' household	Total
2d: Whole household match: Any other combination of ages	0	0	0	0	2	0	0	2
2e: Partial household match: All duplicates are adults	0	3	0	0	4	3	2	12
2f: Partial household match: All duplicates are seniors	0	0	0	0	2	3	6	11
2g: Partial household match: All duplicates are children	0	3	6	0	1	0	4	14
2h: Partial household match: Other age combinations with children	0	0	0	0	4	1	4	9
2j: Partial household match: Any other combination of ages	0	0	0	0	0	1	0	1
Type 3 Cases	0	0	0	41	0	0	0	41
3a: I: Military GQ	0	0	0	3	0	0	0	3
3b: J: College GQ	0	0	0	9	0	0	0	9
3c: K: Jail GQ	0	0	0	9	0	0	0	9
3d: L: Juvenile GQ	0	0	0	1	0	0	0	1
3e: N: Group home GQ	0	0	0	1	0	0	0	1
3f: M: Nursing home GQ	0	0	0	8	0	0	0	8
3g: O: Homeless GQ	0	0	0	6	0	0	0	6
3h: P: Workers GQ	0	0	0	4	0	0	0	4
Total	2	7	6	41	49	30	20	155

10141021676393516613 (3b), respondent never lived in the GQ (dorm)
 99213, 99072, 96811 (3h) are misclassified GQ cells (boarding schools)
 20656688596865221566 (1d), respondent never lived in the dup address
 * 8342 (1f) and 4406 (1e) moved but were GQs misclassified as Type 1

5.1.6 Proxy versus Nonproxy Respondents

As shown in **Table 5-8**, when the respondent was a duplicate person himself or herself (nonproxy respondent), the interview appeared slightly more successful. Approximately 69.2% of interviews with a nonproxy respondent resulted in a verified dup, compared to 67.7% in proxy interviews. Fewer nonproxy respondents (14.6%) did not confirm or mention the other address in the recruitment file than did proxy respondents (19.8%).

Table 5-8. Case Outcome by Proxy versus Nonproxy Respondent

Case Outcome	Nonproxy	Proxy
Verified dup	90 (69.2%)*	65 (67.7%)**
Not revealed dup	19 (14.6%)	19 (19.8%)
HU mix-up	1 (0.8%)	0 (0.0%)
false match	10 (7.7%)	4 (4.2%)
suspected false match	10 (7.7%)	8 (8.3%)
Total	130	96

* 85 verified in TCFU, 1 verified in TCFU and EHC, 1 in EHC, and 3 elsewhere in cognitive interview.

** 60 verified in TCFU, 4 elsewhere in cog iw, and 1 in TCFU and elsewhere in cognitive interview.

In this study, we did not have a direct measure of the quality of data provided by proxies versus nonproxy respondents. However, in each round of cognitive testing, we conducted one dependent *cognitive* interview (a total of two pairs of independent and dependent interviews). In both cases, one of the dependent interviews was conducted with the duplicate and the other with a proxy respondent, providing anecdotal comparison of responses to the same questions about the same living situation.

5.1.7 Round 1 Dependent Interview

The interview with the duplicate was conducted first; the second interview was conducted with the dup's sibling. At times, the proxy expressed concerns about answering for the dup. Even though the dup address was revealed in both cases, the two reports did not match completely. Details comparing the two interviews can be found in **Table 5-9**.

Table 5-9. Mismatched Responses by Proxy and Dup about CaseID 1532, Round 1

	SC1532 (proxy)	TF1532 (dup)
D4 – When live at prepped address*?	Incomplete dates (confused by 2010 reference)	Complete dates
D6 – At prepped address* on April 1 st ?	No	Yes
Moved	Yes	Yes
Address 1	Complete	Complete
Address 2	Partial	Complete
F7 – Stayed with a parent?	No	Yes (visited about a week)
F13 – Laundry List – 7 nights?	No	? (Interviewer inadvertently skipped 7-night follow-up)

*Address at which the interview took place—with dependent cases, we interviewed at each of the two addresses from the duplication file.

The dup address was revealed in both interviews by the same TCFU question (asking if the dup had moved). There were different responses to the question asking if the dup was living at the current address on April 1. The dup gave two complete addresses for where he/she had lived in 2010, whereas the proxy gave a complete and a partial address. The proxy was only able to provide the city, state, and street off which the address was. When asked if the dup had stayed with a parent, the proxy said “no,” while the dup said “yes,” thinking about a week he/she had stayed with a parent. When the “laundry list” question was asked, the duplicate provided an address, while the proxy did not. This was likely due to an interviewer error where the 7-night question was inadvertently skipped. The proxy reported yes to the same “laundry list” question (vacations), but said “no” when asked the 7-night question.

5.1.8 Round 2 Dependent Interview

The first cognitive interview was conducted with the proxy respondent (TK89277), the mother of the adult dup and grandmother of the two dup children. The dup address was not revealed. The respondent reported her daughter and two children lived with her at Side A in 2010 and moved to a new place in May 2011. The interviewer noted that the respondent made a comment that they were very private people, and this may be part of the reason why the dup address was not revealed. The differences in responses provided by the proxy and dup herself are presented in **Table 5-10**.

Table 5-10. Mismatched Responses by Proxy and Dup about CaseID 89277, Round 2

	TK89277 (Proxy)	PM89277 (Dup)
D4 – When live at prepped address*?	Entire year	Entire year
D6 – At prepped address* on April 1 st ?	Yes	Yes
F7 – (Adult) Stayed with a parent?	No (but qualified daughter stayed with her)	No
H1 – (Children) Stayed with a parent or grandparent?	No	Yes
Address 1		Father’s address
Address 2		Dup address

*Address at which the interview took place—with dependent cases, we interviewed at each of the two addresses from the duplication file.

The dependent interview was with the adult dup and the dup address was revealed for the children, in 2010. She never confirmed she spent time at her mom’s address (the dup but not for the respondent herself. The respondent was contacted at one of the two addresses in the duplication file, and she revealed her children spent “a couple of nights out of the year” at her mom’s address (the other address in the duplication file). The adult dup also revealed the father’s address where the children spent time “a couple of weekends during the year” address). No specific dates (related to spending time at these addresses) were provided—respondent noted such stays occurred “off and on” throughout the year.

Interestingly, both respondents claimed the dups stayed at two different addresses the entire year. Privacy concerns and confusion about dates (misplacing the move to Side B) may be the reason for the contentious reports. When filling out the EHC, the dup marked her move to Side B as a landmark event in 2010; she said she and her two children moved to the Side B address on January 1, 2010. Side A census form was sent by mail, while the side B form was completed by a census enumerator. Even though the move to Side B occurred in 2010, it is unclear whose report is erroneous.

Four additional dependent interviews were completed as qualitative interviews in Round 2, and details about these are discussed in **Chapter 4**.

5.1.9 One Person Dups versus Multiple Person Dups

Table 5-11 suggests that interviews with respondents from multiple dup households were more successful than one person dup households. For multiple dup interviews, 76.6% confirmed the dup address. This is compared to 61.1% of one-person dup interviews that confirmed the dup address. Interviews with one-person dup also resulted in 23 (25.6%) confirmed and suspected false matches, but only one household was suspected to be a false match in multiple dup interviews.¹⁷ These numbers are reported for Type 1 and Type 2 cases only, because Type 3 cases were designed to be one-person dup only.

Table 5-11. Case Outcome for One Person Dups versus Multiple Person Dups (Type 1 and 2 Only)

Outcome	1 Person Dup	Multiple Dups
Verified dup	55 (61.1%)*	59 (76.6%)**
Not revealed dup	12 (13.3%)	16 (20.8%)
HU mix-up	0 (0.0%)	1 (1.3%)
False match	10 (11.1%)	0 (0.0%)
Suspected false match	13 (14.4%)	1 (1.3%)
Total	90 (100%)	77 (100%)

* 52 verified in TCFU, 3 verified elsewhere in cognitive interview.

** 55 verified in TCFU, 1 verified in TCFU and EHC, 1 in TCFU and elsewhere in cognitive interview, and 2 elsewhere in cog interview.

Table 5-12 shows the case outcome for one person and multiple dup households, separated by type of interviews. Regardless of the number of dups, Type 1 interviews were more successful in verifying the duplication than Type 2 interviews. Duplication was verified in all Type 1 interviews except in one interview where the respondent did not confirm the dup address, and it was a partial household match case in the sample.

¹⁷ As discussed in **Chapter 2, Section 2.3**, the number of matched people in a household is a factor in determining whether there is a false match during Census Bureau's data review. The more matches that can be found in the data (in this case, the more people who can be matched), the less likely a false match is suspected.

We observed in **Table 5-11** that 23 of the 24 confirmed or suspected false matches were one-person dup interviews, and **Table 5-12** confirms that they were all Type 2 cases. The vast majority of those cases (21 of 23) came from the partial household match sample.

Only one multiple dups interview was suspected to be a false match during Census Bureau's data review (SC69799). This Type 2 interview was classified as a 2j (partial household match: any other combination of ages) in the recruitment file. The side interviewed listed a set of elderly parents and an adult son and the other side listed just the mother and son, who were the dups. The two addresses are only a mile apart, but different surnames were listed for the dup mother. During the interview with the dup mother, the only other address given was when the family went on vacation.

Table 5-12. Case Outcome for One Person Dups versus Multiple Person Dups by Interview Type

Case Outcome by Type	One Person Dup	Multiple Dups
Type 1 Cases	15	27
Verified dup (a)	15 (100%)	26 (96%)
Not revealed dup	0	1
Type 2 Cases	75	50
Verified dup	*40 (53%)	**33 (66%)
Not revealed dup	12 (16%)	15 (30%)
HU mix-up	0	1 (2%)
False match	10 (13%)	0
Suspected false match	13 (17%)	1 (2%)

* 37 verified in TCFU, 3 elsewhere in cognitive interviewer.

** 29 verified in TCFU, 1 case verified in TCFU & EHC, 1 in TCFU and elsewhere in cog iw, and 2 elsewhere in cognitive interviewer.

5.1.10 Type of Enumeration: Mail versus NRFU

Each case consists of two addresses that were matched because there was one or more computer-identified suspected duplicate persons (whole household or partial household can be duplicated). Each address may have been enumerated by mail, a NRFU interview, or telephone. According to the recruitment file, the Type 1 and Type 2 HU interviews that were determined to have been a verified dup case were enumerated by the following:

- Mail-Mail: a form was completed and mailed back in for both HUs.
- Mail-NRFU or NRFU-Mail: a form was completed and mailed back in for one address, and the other address had an NRFU interview conducted because a mail return was not received for that HU.
- NRFU-NRFU: an NRFU interview was conducted for both HUs.

A total of 114 HU interviews were determined to have been a verified dup case, meaning that the respondent confirmed or mentioned the other address that was listed in the recruitment file. As shown in **Table 5-13**, the most frequent type of enumeration is “Mail-NRFU or NRFU-Mail.” They comprise 56.1% of the 114 HUs. About a third or 30.7% of these HUs were enumerated by the “Mail-Mail” type, while 13.2% were enumerated by “NRFU-NRFU.”

When type of enumeration of a partial versus whole household match were compared, 70% of the whole household match cases had both an NRFU interview and a completed mail form. For partial household match cases, “NRFU-Mail or Mail-NRFU” was still the most frequently observed enumeration type, but the percentage difference with other types were not as striking. Few households that had a whole household match completed a NRFU interview on both sides.

Table 5-13. Type of Enumeration by Household Match

Enumeration	Partial Household Match	Whole Household Match	Total
NRFU-Mail or Mail-NRFU	29 (45.3%)	35 (70.0%)	64 (56.1%)
Mail-Mail	22 (34.4%)	13 (26.0%)	35 (30.7%)
NRFU-NRFU	13 (20.3%)	2 (4.0%)	15 (13.2%)
Total	64 (100%)	50 (100%)	114 (100%)

When reasons for duplication were examined for the whole household match cases, we found that having moved between the two addresses was the dominating reason and most likely to be enumerated by the NRFU or mail type. These were permanent moves where the household changed residence for good. This makes logical sense because the mail and NRFU operations are consecutive, with mail taking place in the March/April time frame and NRFU taking place in May through July. Having another property was the second most frequent reason for duplication either in the NRFU/mail type, or mail only from both sides. **Table 5-14** supports these observations.

Table 5-14. Type of Enumeration by Reasons for Duplication: Whole Household Match

Reasons for duplication	NRFU-Mail or Mail-NRFU	Mail-Mail	NRFU-NRFU	Total
Completed wrong form	2	0	0	2
Convenience address	1	0	0	1
Moved	25	4	1	30
Other property	7	8	1	16
Relatives' household	0	1	0	1
Total	35	13	2	50

Table 5-15 shows the type of enumeration by reasons for duplication for the partial household match interviews. Unlike observations made for the whole household match interviews, having moved and being enumerated in a relatives' household are equally likely to be enumerated by the NRFU or mail type. Similar to the whole household match observations, having another property was the next most frequent reason for duplication. However, about one third (4 of 14) were enumerated in the NRFU/NRFU type, while only 1 of 16 interviews were enumerated in the whole household match.

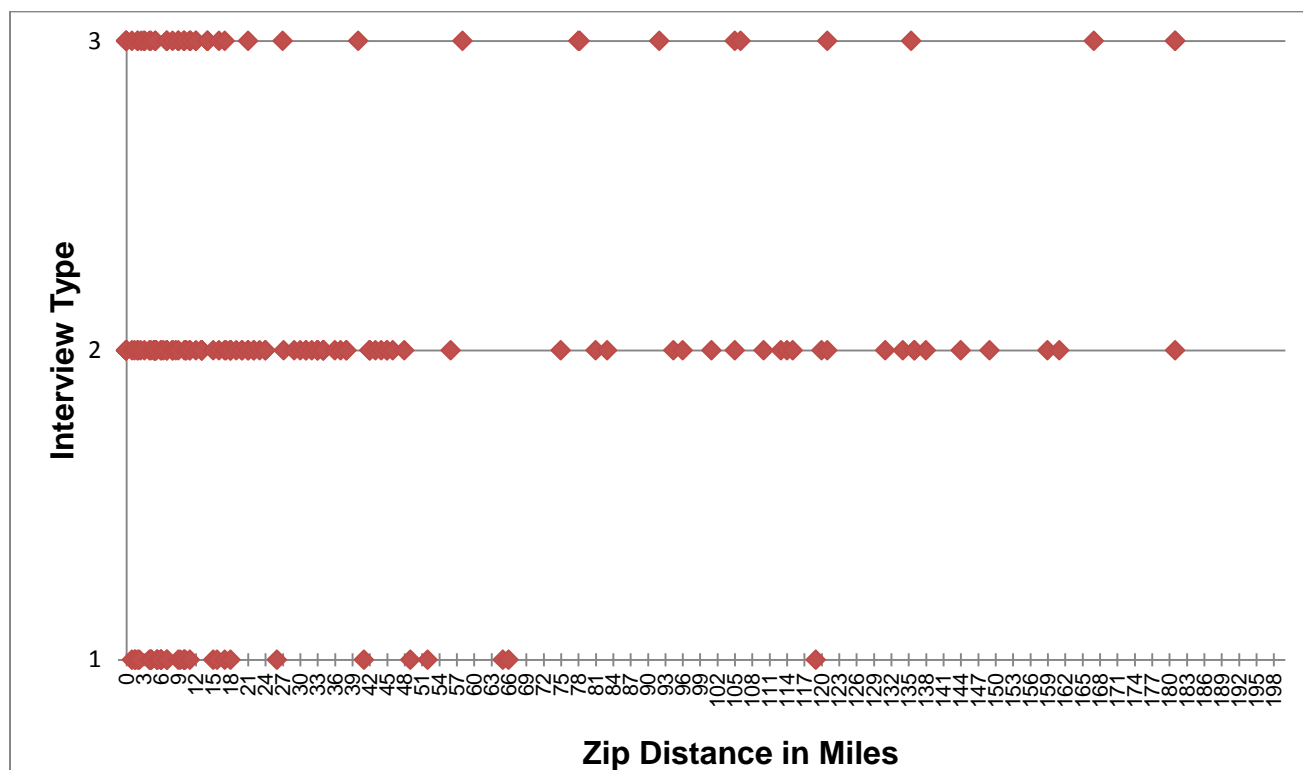
Table 5-15. Type of Enumeration by Reasons for Duplication: Partial Household Match

Reasons for duplication	NRFU-Mail or Mail-NRFU	Mail-Mail	NRFU-NRFU	Total
Convenience address	3	3	0	6
Custody	1	1	4	6
Moved	10	6	3	19
Other property	6	4	4	14
Relatives' household	9	8	2	19
Total	29	22	13	64

5.1.11 Distribution of the Distance Between Addresses, by Type

As discussed in the Recruitment section, the distribution of distance between the two addresses was presented in a scatter plot and shown by type, which can be seen in **Figure 2-1**. Because there appears to be a concentration of cases less than 200 miles apart, we also present a snapshot of 200-mile distance in **Figure 5-4**.

Figure 5-4. A Snapshot at 200 Miles of Distance between Addresses by Type



The following observations are supported by the scatter plots and simple statistics in **Table 5-16**:

Type 1 Cases (Phone Match, Whole or Partial Household Match)

- Among the 42 Type 1 interviews, 35 or 83.3% of them have a distance of 200 miles or less. At the 75% percentile, the distance is at 52 miles. The median distance between Type 1 addresses was 10.
- Compared to Type 2 distribution in the scatter plot, proportionally more Type 1 cases had a distance of greater than 200 miles. Type 1 interviews have the highest mean distance across all three types—191.7 miles.
- The maximum distance between addresses is a HU that is 1,505 miles apart from the other HU where all dups are seniors and the proxy respondent reported the dup address as a relatives' household.

Type 2 Cases (Nonphone Match, Whole or Partial Household Match)

- Compared to other types, Type 2 distances are better distributed from the low end to the maximum. The mean is 113.4 miles.
- Ninety percent or 113 of 125 Type 2 interviews have a distance of 200 miles or less. On the scatter plot shown in **Figure 5-4**, they appear to cover the spectrum of 200 miles, but show some concentration under 50 miles. **Table 5-16** shows a median of 24 miles.

- As shown in **Table 5-16**, the 90% percentile is 181 miles and the 75% percentile is 94 miles.
- The maximum distance between addresses is 2,460 miles, the farthest of all types of interviews. The interviewer was able to verify the dup address for that HU, which was duplicated because of a second property.

Type 3 Cases (HU and GQ)

- Because all Type 3 interviews (n=59) were suspected to be duplicated at a GQ, the distance between the HU and GQ was not managed during the recruitment phase.
- The interview that had maximum distance between the HU side and the GQ side is 966 miles and was classified to be a jail GQ, but the interview was determined to be a false match (TK98034). The next furthest distance between the HU side and the GQ side is 613 miles, and the dup address was verified in that interview to be a military GQ (SC98017).

Table 5-16. Basic Statistical Measures for Distance between Addresses

Measures	Type 1 (n=42)	Type 2 (n=125)	Type 3 (n=59)
Mean	191.8	113.4	84.3
SD	419.3	316.0	181.0
Variance	175,779	99,862	32,778
Median	10	24	11.1
Mode	6	0	0
Range	1,504	2,460	966
Quantiles			
100% Max	1,505	2,460	966
99%	1,505	2,166	966
95%	1,186	544	603
90%	902	181	181
75% Q3	52	94.42	78.26
50% Median	10	24	11.11
25% Q1	5.33	8	5
10%	2.26	3.15	2
5%	1.51	0	0
1%	1	0	0
0% Min	1	0	0

5.1.12 Likelihood of Revealing the Dup Address

We attempted a logistic regression to predict the likelihood of revealing the dup address as a function of case type, number of duplicates, type of respondent (proxy vs. nonproxy), zip distance, reason for duplication, type of enumeration, respondent demographic characteristics, and interviewer. The stepwise model could not converge, so we constrained

the predictors to variables for which we had theoretical reasons to believe would predict the outcome of the interview. A model that converged successfully included interview type, number of duplicates, type of respondent, and type of enumeration as predictors. However, only interview type was significant. We reran the model including only interview type as a predictor (Likelihood Ratio Chi-square=29.5, $p < 0.01$). The results showed that with Type 1 interviews, we were 30 times more likely to reveal the dup address than with Type 2 interviews and 18 times more likely than with Type 3 interviews. There was no significant difference between Type 2 and Type 3 interviews. These results are not surprising given that Type 1 interviews have one additional level of matching (a telephone number), which ensures that in most cases we are at least talking to the correct person. This information can be used for the design of the CATI interviews. For example, an automated check of each provided address against the dup address can be implemented for Type 1 cases only.

5.2 Living Situations

5.2.1 Addresses Revealed Outside of the TCFU

Overall, the TCFU captured the living situations of participants and contributed to 95% of the uncovered dup addresses among the cases where the dup address was revealed. In only seven instances the dup address was revealed during the cognitive portion of the interview after the TCFU was completed, and in one instance, the dup address was revealed during the EHC administration (TK3896). In addition, the EHC helped fill in a gap in dates (the dup address was already revealed during the TCFU interview, SC79069) and yielded at least one new address in nine interviews across both rounds of cognitive testing.

When the dup address was revealed during the cognitive portion of the interview, most of the time it was either because the interviewer was trying to close a gap in dates reported during the TCFU portion of the interview (e.g., DC89767), or a respondent realized he/she was not answering about 2010 (e.g., DC99338). In another instance, the case was a misclassified GQ case (BS99213), and the interviewer was able to bring up the dup address during probing (see next paragraph for details). On another occasion, the respondent did not recall the dup address until the very end of the cognitive interview, after being cued by so many facts about his/her living situation in 2010 (e.g., TF28906).

On two occasions the dup address was revealed rather unconventionally. In two instances, it was a result of interviewers not strictly following the protocol. For example, when interviewing BS99213 about a dup child, the interviewer had to administer Section P (housing for workers). The respondent had already reported that the minor was in a boarding school, so the interviewer concluded she had the wrong TCFU section and asked what was the address of the school.

When a *new* address (that was not a dup address) was revealed during the EHC, it was related to taking a vacation that was not previously reported (e.g., PM91370), living somewhere temporarily due to house renovations or closing on a house (e.g., SC67747 and TF68594), or filling in a gap in dates that were provided during the TCFU (SC79069). When a new address was revealed during the cognitive portion of the interview, it was related to overnight stays with relatives (brought up by asking respondents if they stayed at any other places, e.g., SC5526); vacations (e.g., SC7476, SC24872, SC74203); and stays that filled gaps in dates provided during the TCFU (SC27151).

These results reveal that changes to the TCFU questions to capture additional information will not be necessary. When an address was revealed outside of the TCFU, it was most often a recall problem rather than lack of detail in the questionnaire and possibly, it was related to the timing of the cognitive interviews—several months to over a year after census day.

5.2.2 Gaps in Dates

Gaps in dates were coded in 10 instances in Round 2¹⁸ of cognitive interviewing. The definition of a “date gap” covers missing information for a time period or conflicting information provided for the same time period (e.g., being at two different places at the same time). **Table 5-17** presents reasons for date gaps by frequency of occurrence. Date gaps were coded in five proxy and five nonproxy cases. The reasons for date gaps were mainly lack of knowledge about the dup’s whereabouts throughout the year (two of the three cases were proxy respondents), or the different way respondents thought about spending time at a facility (in both cases, dups were hospitalized for a period of 2010, but reported living at their address for the entire year).

Table 5-17. Reasons for Gaps in Dates, by Instances of Occurrence

Reasons for Date Gaps	Number of Times
Not knowledgeable respondent	3
Deceased Dup	2
Gap (reason unclear)	3
Conflicting dates - permanent residence whole year	2
Total	10

¹⁸ Such data were not coded in Round 1.

5.2.3 Number of Unique Addresses

A total of 208 unique addresses were reported in Round 2¹⁹ of the TCFU cognitive test by 180 participants. **Table 5-18** presents percentage of proxy and nonproxy respondents who provided complete and partial unique addresses.

Table 5-18. Percent Proxy and Nonproxy Respondents who Provided Unique Address Information, Round 2

Unique Address Information	Nonproxy Respondent (n=98)	Proxy Respondent (n=82)
Complete	56%	39%
Partial	62%	73%

There were no differences between the average number of unique addresses provided by males versus females. Among respondents who provided a unique address, everyone provided about two unique addresses. This was also the case for the different age categories.

Overall, the information obtained during the TCFU cognitive interviews on both dates and locations can successfully be used with the Census Residence Rules to determine where a dup should be counted in the census (in the instances when the dup address was revealed). However, some cases, especially Type 3 cases, required additional clerical work since the partial addresses were often limited to a facility name or description of the location. For example, one respondent (SC97281) gave the name of a rehabilitation center where she stayed, which was the duplicate location, but she could not provide the address. After the interviewer did a Google search, she was able to determine the address of the facility. In another instance (SC98812), the respondent lived at a shelter and, though she provided her address, it did not match the address in the duplication file because her address was for the shelter building where she lived and the duplication file address was the shelter office building. Such cases are examples in which automated checks that are employed during the TCFU interview will not work well and should be taken into account when algorithms that match provided addresses to the duplication file are developed.

Furthermore, without listening to the individual tapes retrospectively, we are unable to distinguish between information obtained strictly during the TCFU versus information obtained outside of the TCFU questions (e.g., unscripted probing during the TCFU interview); thus, such conclusion may be premature. In addition, the two dependent cases described in **Section 5.1.7** and **5.1.8** show evidence that different respondents (proxy vs. nonproxy) presented a different picture of a person's living situation.

¹⁹ The coding of addresses in Round 1 did not make the distinction between a new address and an address that might have already been provided during the interview.

5.2.4 Language Used to Describe Living Situations/Reasons for Stays

When respondents reported staying at an address other than their primary residence for any period of time, they seemed to use vague quantifiers rather than dates. When referring to family members, friends, significant others, second homes, and vacation homes, respondents continuously used “off and on,” “couple weekends a month,” “intermittently,” “occasionally,” “holidays,” or “at least once a month.” For example, one respondent (SC23395) was unable to provide exact dates after providing the duplicate address, but described the duplicate’s stays at a seasonal vacation home as being “some weekends in the summer. I’m not sure which ones.”

When explaining reasons for stays or why they stayed somewhere else, respondents were pretty open and detailed, volunteering information along with responses to the specific TCFU questions, such as

“I drive up to visit with my boyfriend on weekends mostly during summer months,”

“hospitalization for the birth of second child.”

“All of us traveled to [CITY] to visit an aunt.”

“It’s a casino but we go there for vacation. The last 3 or 4 times we haven’t had to pay for the room and they gave us money to spend.”

“We traveled, actually started in China, and then went to Cambodia. China was a business day. My wife came with me, and we went from there to vacation in Cambodia.”

5.2.5 Patterns of Movement

Across the different living situations, moving patterns and reasons for staying at different locations provided by respondents were fairly easy to categorize or capture within one of the TCFU questions (e.g., SC7740, AN35276, and TK11211 fell easily into the seasonal/vacation homes category; AN58942 matched another place for a job; SC5526 and TF7580 matched owned or rented another place category; SC7916 and TF1532 fell under stayed with a parent; TK11211 and TK94062 stayed with son or daughter; TF4105 and TF86843 stayed with a boyfriend/girlfriend). In addition, the living situations that produced a duplicate address outside the TCFU (EHC or cognitive interview), could all also be easily categorized or captured within one of the TCFU questions, suggesting that the current questions capture various living situations that may result in duplication adequately. As noted earlier in this section, in most cases, it was an issue of recall, rather than the questions not performing as expected.

Respondents’ patterns of movement between addresses were also pretty regular (e.g., off and on, weekends, summer months), though respondents often used vague quantifiers to describe the period of time rather than exact dates. This dynamic did not negatively impact

capturing them in the TCFU fairly seamlessly. Patterns of movement noted in the TCFU include staying at a relatives' or friends' occasionally, staying at a boyfriend's/girlfriend's/significant other's on weekends or some other frequency, and staying with a relative for a specific reason for a period of time. For example, a duplicate (PM91370) stayed with a grandfather while attending a vocational class for about two months; another duplicate (SC7740) had a seasonal/vacation home where he/she stayed off and on between April to October; yet another duplicate (TK94605) had a second home/condo where she stayed on weekends if she had business or pleasure in the city but otherwise stayed in what she called her seasonal or vacation home in the suburbs. In another case (TK90535), the duplicate was a child who visited and stayed with her dad every other weekend or "26 weekends a year" as her mom, the proxy, stated.

5.2.6 "Most of Time" Questions

To make a decision where a dup should be counted, three pieces of information are needed: address, duration (dates at a particular address), and frequency of stay. This allows the Census Bureau to determine where each person should have been counted in the census. Each address in the TCFU questionnaire was followed by "when" and "how often" questions.

When respondents were asked such questions, specifically "How often did [dup] stay there?" and, "During 2010, when did [dup] live or stay at that address?", respondents immediately provided quantifiers such as "all the time," "everyday," "7-days a week," "24/7," "whole year," "all year," or "entire year" before an interviewer could read the response choices or probe for specific dates. Once the categories were read for the question asking "How often did [dup] stay there?", respondents almost always selected "most of the time"; however, many would still emphasize "all the time," "everyday," etc. In general these quantifiers were accompanied with some frustration or sense that the "how often" question was asking the same thing as the preceding question, "During 2010, when did [dup] live or stay at this address?"

We found no differences between initial sections of the TCFU (D or E) and subsequent sections (F through R) in terms of language used to describe frequencies (i.e., there were no differences in describing frequencies of staying at addresses we provided at the beginning of the interview and addresses respondents volunteered during the interview). A word search of responses to the "how often" question revealed that 38% of initial sections (D or E²⁰) and 28% of the following sections (F through R²¹) contained the term "all" (e.g., "all the time," "all day," "all year"). In addition, 26% of the initial section and 22% of the follow-up section responses contained the term "every" (e.g., "every day," "every night").

²⁰ Based on 81 respondents

²¹ Based on 32 respondents

Since some respondents did seem a bit agitated with this exchange, we recommend adding a response option, “all of the time” and rewording the question to incorporate the response options being read with the question stem. For example, “Which category best describes how often [dup] stayed there, during those dates? All of the time, most of the time, half of the time, or less than half of the time.” Having the interviewer read the categories each time as a part of the question instead of noting the response and trying to fit the response into a category or probe for clarity would alleviate any agitation or confusion over what the question is asking and eliminate frustration for respondents who felt this question was redundant.

5.3 Problematic Issues for CATI Automation

The data quality of both addresses and dates can help inform decisions related to the automation of the CATI instrument. For example, one possible solution to the repetitiveness of the TCFU questionnaire when multiple household members are duplicated is to incorporate checks if any of the addresses provided are the dup address. This, however, will depend on the completeness of the address. When conducting the interviews, interviewers coded if the address data they received were complete (at least street number, street name, city, and state are provided) or partial.

Across both rounds of cognitive interviewing, we gathered a total of 242 complete addresses,²² and 166 partial addresses. **Tables 5-19** and **5-20** present the number of complete and partial addresses that were reported by TCFU question.

Table 5-19. Number of Complete Addresses Provided by TCFU Question

Type of Question	Complete Addresses
Did [dup] move?	105
Stay with another parent (Section H)	22
Own another residence	17
Current address (Section C)	15
Stay with a parent	14
Own seasonal/vacation home	13
Stay with a son/daughter	9
Stay at a nursing home	7
Another address for school	4
Jail GQ	4
Laundry list questions (F13, G14, H9)	4
Stay at a nursing home, jail, emergency shelters (R2)	4
Stay at any other GQ (R3)	4
Stay with a significant other	3
Stay with a brother/sister	2
College GQ	2

(continued)

²² Not unique addresses

Table 5-19. Number of Complete Addresses Provided by TCFU Question (continued)

Type of Question	Complete Addresses
Homeless GQ	2
Stay somewhere for a job	2
Nursing home GQ	2
Stay with another relative	2
Workers GQ	2
Stay at a college, university, or graduate school	1
Juvenile GQ	1
Military GQ	1
Total	242

Table 5-20. Number of Partial Addresses Provided by TCFU Question

Type of Question	Partial Addresses
Stay with another parent (Section H)	20
Nursing home GQ	12
Stay with a parent	12
Stay with a son/daughter	12
Did [dup] move?	11
Stay with another relative	11
Stay with significant other	11
College GQ	10
Stay somewhere for health problems	9
Laundry list questions (F13, G14, H9)	8
Stay with a brother/sister	6
Jail GQ	6
Other GQ	5
Own a seasonal/vacation home	5
Military GQ	4
Stay at a nursing home	4
Homeless GQ	3
Juvenile GQ	3
Current address (Section C)	2
Stay with a friend, neighbor, or legal guardian	2
Group home GQ	2
Stay at a nursing home, jail, emergency shelters (R2)	2
Stay at a rehabilitation hospital	2
Stay at another residence	1
Stay somewhere for child care	1
Stay at college, university, or graduate school	1
Workers GQ	1
Total	166

About 40% of the complete addresses came from the question asking if the dup has moved. This is not surprising, given a move is often a landmark event in one's life and that people

usually move from one permanent residence to another. There was no such clear pattern for partial addresses, but most of them came from questions about living or staying with a family member. It is unclear if the data were partial because of lack of knowledge or because of respondent’s unwillingness to reveal this information about relatives. The only question that did not result in any addresses was the question on adult dups staying with friends.

During Round 1 and the beginning of Round 2, we also coded if the dates that were provided were complete or incomplete. A complete date consisted of a date and month in 2010; a partial or incomplete date consisted of a month only, or any indication when during a particular month that was different from a date (e.g., “mid August”). After the first 52 interviews in Round 2, we instructed interviewers to start recording exact dates in their summaries. Even though this helped examine date gaps and evaluate why the duplication occurs, it hinders us from including the remainder of the Round 2 cases in the analyses of partial and complete dates. Thus, we were able to evaluate a total of 344 provided dates. **Table 5-21** presents the distribution of complete and incomplete dates by type of respondent (dup or proxy), among those who provided at least one date during Round 1 and the beginning of Round 2.

Table 5-21. Percent Proxy and Nonproxy Respondents Who Provided Dates, by Date Type, Round 1, and the Beginning of Round 2

Dates	Nonproxy (n=63)	Proxy (n=35)
Complete	92%	83%
Incomplete	29%	37%

Not surprisingly, nonproxy respondents were more likely to provide complete dates than proxy respondents. Unlike incomplete addresses, incomplete dates seemed to be due to recall problems. **Tables 5-22** and **5-23** present the distribution of codes (complete vs. incomplete dates) by TCFU question.

Table 5-22. Percent Complete Dates Provided in Round 1 and the Beginning of Round 2 by TCFU Question (Out of 339 Provided Dates)

TCFU Question	% of Complete Dates Provided
College GQ (n=3)	100
Current residence (Section C) (n=14)	100
Group home GQ (n=1)	100
Jail GQ (n=2)	100
Military (n=2)	100
Stay at a college, university, or graduate school (n=2)	100
Stay at a nursing home GQ (n=9)	100

(continued)

Table 5-22. Percent Complete Dates Provided in Round 1 and the Beginning of Round 2 by TCFU Question (Out of 339 Provided Dates) (continued)

TCFU Question	% of Complete Dates Provided
Stay at nursing home, jail, emergency shelters (R2) (n=3)	100
Stay at another GQ (R3) (n=3)	100
Stay at another relative (n=4)	100
Stay somewhere for a job (n=1)	100
Stay with a brother/sister (n=1)	100
Workers GQ (n=1)	100
Prepped address (Sections D or E) (n=166)	90
Stay with another parent (Section H) (n=10)	90
Did [dup] move? (n=73)	86
Own a seasonal/vacation Home (n=9)	78
Stay at a nursing home (n=3)	67
Stay with a parent (n=12)	58
Have another address for school (n=2)	50
Homeless GQ (n=2)	50
Laundry list questions (F13, G14, H9) (n=8)	50
Stay at a rehabilitation hospital (n=2)	50
Stay with a son/daughter (n=3)	33
Stay with significant other (n=3)	33

Table 5-23. Percent Partial Dates Provided in Round 1 and the Beginning of Round 2 by TCFU Questions (Out of 339 Provided Dates)

Type	% of Partial Dates Provided
Nursing home GQ (n=2)	100
Own another residence (n=3)	100
Stay with another relative (n=4)	100
Stay with a son/daughter (n=3)	67
Stay with significant other (n=3)	67
Have another address for school (n=2)	50
Homeless GQ (n=2)	50
Laundry list questions (F13, G14, H9) (n=8)	50
Stay at a rehabilitation hospital (n=2)	50
Stay with a parent (n=12)	42
Stay at a nursing home (n=3)	33
Own a seasonal/vacation Home (n=9)	22
Did [dup] move? (n=73)	14
Prepped address (Sections D or E) (n=166)	10
Stay with another parent (Section H) (n=10)	10

Confirming when the dup stayed or lived at the prepared address yielded the most complete dates (about 50%). Complete dates were also associated with moves, as moves are usually salient enough to be well remembered. However, we have no means of verifying the accuracy of the provided information.

We looked at number of complete and partial dates that were provided for each address (complete or partial) in an attempt to assess the overall quality of responses (e.g., if we get complete addresses, do we get complete dates that would allow us to determine where the dup should be counted?). **Table 5-24** presents the counts of complete and incomplete

dates corresponding to number of complete addresses provided. For example, of the 59 people who provided one complete address, they also provided 32 complete dates and 15 incomplete dates. In some cases, a large number of addresses were provided by a single respondent. According to the table below, one respondent provided seven complete addresses, eight complete dates, and four incomplete dates. In this case, the extra complete and incomplete dates indicate that the respondent also provided some partial addresses in which the extra dates were given in response to those. Dates from Sections D and E are excluded from the counts since respondents are not asked to provide an address. The results show no link between number of complete addresses and dates provided (either complete or incomplete).

Table 5-24. Number of Complete and Incomplete Dates by Number of Complete Addresses

Address Complete	Complete Dates	Incomplete Dates
1 (n=59)	32	15
2 (n=26)	11	4
3 (n=7)	8	0
4 (n=6)	9	5
5 (n=5)	15	1
6 (n=4)	12	0
7 (n=1)	8	4
8 (n=1)	2	1
9 (n=1)	9	2
13 (n=1)	10	0
Total	116	32

Table 5-25 shows the counts of complete and incomplete dates corresponding to number of partial addresses provided. Again, there seem to be no connection between number of partial addresses and dates provided (either complete or incomplete).

Table 5-25. Number of Complete and Incomplete Dates by Number of Partial Addresses

Address Partial	Complete Dates	Incomplete Dates
1 (n=56)	24	8
2 (n=32)	18	8
3 (n=12)	26	10
5 (n=2)	5	3
Total	73	29

Complete dates and addresses are needed if we want to rely on a fully automatic check. We have evidence that this may not be possible for all cases. For example, we noticed that Type 3 cases were less likely to provide complete addresses as the GQ places were often not salient to them. Often, such cases required Google searches to identify the address of the facility (when a name or other descriptors were mentioned) and determine if this was the dup address. When address information was not that salient (e.g., staying at a relative’s house), some participants were motivated enough to call and gather this information (e.g., TF28240). Also, some participants made use of their cell phones or the EHC to provide dates. We do not expect this will be the case in a telephone setting and possibly the amount of clerical work needed to determine if the dup address was revealed will be greater.

5.4 Privacy, Confidentiality, Sensitivity, and Respondent Burden

5.4.1 Privacy

A total of 55 participants across both rounds voiced concerns about privacy during the interview. Among those, 26 were proxy respondents and 29 were nonproxy respondents. Most of the comments related to privacy were expressed during the cognitive portion of the TCFU, in response to specific probing. **Table 5-26** summarizes the TCFU questions and cognitive probes that yielded privacy concerns.

Table 5-26. Number of Times Privacy Concerns were Expressed During the Interview by Question Type

Question	Total Privacy Concerns
TCFU Questions	34
Gate Questions	20
Stay anywhere else	3
Laundry list (F13, G14, H9)	3
Stay at a corrections/detention facility (K1)	1
Did [dup] move?	1
Own a seasonal/vacation home	1
Stay at any other GQ (R3)	1

(continued)

Table 5-26. Number of Times Privacy Concerns were Expressed During the Interview by Question Type (continued)

Question	Total Privacy Concerns
Stay with Friends/Family	10
Stay with significant other	5
Stay with friends	2
Stay with a parent	1
Stay with a relative	1
Stay with a son/daughter	1
Follow-up Questions	14
What was the address of that place?	5
Was [dup] there on April 1 st , 2010?	3
Names of the people who usually lived there	3
How often did [dup] stay there?	2
When did [dup] live or stay at that place?	1
Protocol Questions	116
Hesitation to Respond	40
(015) Were there any survey questions that you were hesitant to answer? If so, which ones and why?	20
(016) Other than what we have already talked about, do you think there are questions in the survey that other people would be hesitant to answer? If so, which ones and why?	15
(047) Do you think your answers to the survey would have been any different if we had called on the phone to ask these questions? If so, how would they be different?	5
General	39
(049) Do you have any overall opinions about the questions in the telephone survey?	14
(011) Overall, what did you think of this telephone interview? Was it easy or difficult?	9
(012) In your own words, what was this survey asking about?	6
(013) Were the survey questions what you expected, or not? What makes you say that?	5
(055) After hearing all of my questions, do you have any questions for me?	3
(054) Do you have any other comments or concerns?	1
(050) Thinking back to when you were first called and asked to participate in this study, what was your initial reaction to the call?	1
Introduction	15
(018) If we were on the phone and I was going through that introduction, do you think it would have affected your decision to participate in the survey or not? Why?	8
(017) What was your reaction to this? What did you think of the information I provided on Title 13 and the OMB number?	5
(021) How would you answer the question “Where have I reached you?” if we called your cell phone and you were not currently at either address (for example, if you were at the grocery store instead)?	1
(025) What was your reaction to this? What did you think of the information I provided on Title 13 and the OMB number?	1

(continued)

Table 5-26. Number of Times Privacy Concerns were Expressed During the Interview by Question Type (continued)

Question	Total Privacy Concerns
Places Stayed	22
(030) The next questions I asked were about how much time each person in your household spent at each address. How easy or difficult was this question to answer?	6
(025) When you answer(ed) such questions, how long do you think [you~NAME] would have to stay with relatives to mention it when we ask these questions? Do you think if [you~NAME] stayed overnight once you would mention it?	3
(033) After you gave me an address, did you ever think of it again, as it might be overlapping and relates to another question? For example, an address that [you~NAME] stayed at for a job might also have been an address with a relative – did this happen?	2
(026) How often do you think [you~NAME] would have to stay with relatives to mention it when we ask these questions?	1
(027) How long do you think [you~NAME] would have to stay with friends to mention it when we ask these questions? Do you think if [you~NAME] stayed overnight once you would mention it? What if [you~NAME] stayed with friends for 1 week? 1 month?	1
(029) I gave you a lot of options about the type of location the other address is, including a house you moved from, a vacation or second home, a place for work, and other things. Were these options sufficient, or should there be something else listed there?	1
(031) IF R WAS ASKED A 7-NIGHT FOLLOW UP QUESTION, When I asked if [you ~NAME] stayed at any one place for more than 7 nights total in 2010, were you thinking of 7 consecutive nights, or 7 nights counted up throughout the year? How did you come up with your answer?	1
(032) Did you think of any other places [you~NAME] might have stayed but not mention them? Could you tell me why?	1
(033) How long do you think [you~NAME] would have to stay at any of these places to mention it when we ask these questions? Do you think if [you~NAME] stayed overnight once you would mention it? What if [you~NAME] stayed someplace for 1 week? 1 month? T	1
(034) Did you notice that I read “other than the places you already mentioned”? How did you interpret this when you reported for yourself? How did you interpret it when you reported for someone else?	1
(036) Were any previous living situations omitted?	1
(041) How often does [NAME] stay at the other place?	1
(040) Can you describe [NAME’s] living situation for me? Please tell me how much time [NAME] spent at each of his/her addresses in the past year, that is, during 2010?	1
(014) What time period were you thinking about when you were answering the questions in the survey?	1
Total	150

When probed explicitly about concerns, respondents expressed privacy concerns ranging from a specific aspect of the questionnaire (e.g., asking for names of relatives), to finding the whole TCFU questionnaire invasive. For example, one respondent (EP5785) was hesitant to disclose her relative's information "because of privacy." She noted: "I wouldn't disclose the exact address even if I knew it." Another participant (AN63894) commented: "In my opinion it's none of the governments business what [DUP] does on a day-to-day basis. It's irrelevant, it's a little... it's beyond big-brother. It's none-of-your-business stuff. Ok, and I'm not saying this to you, I'm saying this to our government. Go away, that's what I'm saying. Enough."

Some participants voiced concerns during the TCFU administration. Asking for other people's addresses and whether the dup stayed with a girlfriend or a boyfriend provoked the most comments. For example, one respondent (MS66750) said he did not know the address, but later during the interview revealed that he did not want to provide this information as he considered it private. In response to staying with a boyfriend or a girlfriend, another respondent (TK90633) said: "That's too personal." Another respondent (TK16740) said the question was "nosy"; yet another commented: "That's out of order. Too invasive."

Asking parents about their children also elicited concerns, especially when the child was the only duplicate in the household (also see **Section 5.5.4, Negative Reaction**).

Respondents were not informed in advance about the details of the survey (e.g., about whom the survey would be asking), and many assumed the interview would be about themselves. A few respondents mentioned that they would not have agreed to do the interview if they knew the questions would focus only on their son or daughter. For example, one respondent (MS66750) said: "It's a survey asking me, but I don't know why they are all about [dup child's name], like where she lived. The survey questions should be geared toward me, we both live in the same home, but clearly you are interested in my daughter. I would not have agreed to this if I had known that you are asking questions about my daughter." Another respondent (TK90535) commented: "Kind of strange to ask about a child, I'm protective of my child and asking where they sleep is a little strange ..."

Custody situations also brought up a heightened sense of concern. For example, one respondent (TK56737) said: "The census is being nosy; you are getting people suspicious by asking questions about a child, especially in situations like ours where we have a custody issue, I could think you are someone here to fish for information..."

Privacy concerns related to children were more prevalent with proxies rather than nonproxies, which is not surprising, given we did not interview children, but only their proxies. Similarly, asking respondents to provide names of people who usually live at a particular address was found alarming (also see **Section 5.5.4, Negative Reaction**). This

question was a necessary part of the TCFU as it would help confirming the dup address if there was a name match between the TCFU information and the household roster of the suspected dup address. However, asking respondents to provide names associated with addresses or other people's addresses elicited the most refusals (**Table 5-27**). For example, one participant (TF11572) refused to answer any questions related to addresses and names. When asked if he/she thought of other places where the dup might have stayed, the respondent simply said: "Sure. I'm still not going to tell you." In another case (EP5785) even though the respondent refused to provide a complete address for a trip the entire family took to visit grandparents, she did provide a partial address. The respondent also refused to provide the full names stating "Do we have to tell you? I don't feel comfortable disclosing too much without their consent."

Interestingly, the total number of refusal codes was very low across both rounds of data collection. Perhaps, this can be attributed to the high motivation of participants, possibly a result of the face-to-face mode of data collection and the incentives for participation.

Table 5-27. Number of Refusal Codes Assigned to TCFU Questions across Rounds 1 and 2 of TCFU Cognitive Testing (n=14²³)

TCFU Question	Number of Refusal Codes
Names of the people who usually live there	12
What was the address of that place?	5
Was [dup] there on April 1 st , 2010?	2
Stay anywhere else	1
Did [dup] move?	1
Total	21

5.4.2 Confidentiality

No TCFU questions were coded as questions provoking confidentiality concerns. Only 7 out of the 226 participants expressed concerns related to the use of their data or were worried about the ulterior motive of the TCFU questionnaire. For example, one respondent (AN35276) insisted on clarifying that the information she gave would not be going anywhere further, making sure her information would not be saved or reserved. She said she came "from an older era where there is a lot of suspicion, so that's why I'm curious." Similarly, another respondent (AN22237) requested the audiotape from the interview to be mailed back to him. Yet another participant (AN97190) said the dup child did not stay at a neighbors' house because she didn't "know where this could possibly go" and she added, "so I don't want to implicate people who may be innocent."

²³ Where "n" is the number of participants who were assigned a refusal code at least once.

5.4.3 Sensitivity

Some of the targeted GQ questions (staying at a shelter, a jail, etc.) were perceived as sensitive by respondents and led to untruthful responses. For example, one participant (TK3896) denied staying at a shelter during the TCFU, but admitted to it during the cognitive portion of the interview. He simply stated he did not want to talk about it. Another nonproxy respondent (TK98124) commented on being asked the jail question: “To me, that’s kind of private.” Similarly, a proxy respondent (TK8482) was hesitant to answer the same question; yet another proxy respondent (PM97532) was hesitant to answer the whole section (R2), saying: “That’s a little personal.”

The dup address was not revealed in 17% of the GQ interviews²⁴ (**Section 5.1.3**). The success rate may be partially driven by the questions being perceived as sensitive (even when respondents did not explicitly state that), as only five of the GQ cases were suspected to be misclassified²⁵ (**Table 5-28**). An alternative explanation is the lack of knowledge of GQ addresses as participants did not seem to have a strong connection to such places.

Table 5-28. Misclassified Cases across both Rounds of Interviewing

Type of Misclassification	Number of Cases
GQ (misclassified GQ cell)	3
Not revealed dup (misclassified GQ cell)	2
Dup moved (GQ misclassified as Type 1)	2
Total	7

5.4.4 Frustration

When multiple duplicates in the household existed and when they had the same living situations, the repetitiveness of the survey fostered frustration. In Round 2, 14 respondents expressed frustration with the repetitiveness of the TCFU questions. Some expressions were nonverbal; for example, the interviewer noted that PM91775 was rolling her eyes as the TCFU questions were repeated.

5.4.5 Willingness to Provide Information

Though some respondents may have noted concerns about privacy and hesitation in the cognitive portion of the interview, most respondents still provided address information and information on household members fairly openly (e.g., TK72940: respondent provided the

²⁴ As a comparison, the dup address was not revealed in only one Type 1 case and 22% of the Type 2 cases.

²⁵ Misclassified cases are cases that were listed under the wrong type (Type 1, Type 2 or Type 3). All seven misclassified cases had some GQ connection – three cases were classified as the wrong GQ (Workers instead of Boarding School); two cases were classified as Type 1 cases, but were in fact Type 3 cases as dups moved to a rehab or skilled nursing facility, and two cases were listed as GQ cases (Group Home), but the dup address was not revealed.

complete address of rental property that turned out to be the duplicate address, and although he didn't provide the name of the person living there, he noted her relationship to him as a renter; AN71939: duplicate provided the complete address and full names of daughter and daughter's family where duplicate visited during holidays [this was not however the duplicate address]; TK11211: duplicate provided the complete address of his and his wife's seasonal vacation home, when probed to ask if he had any concern about providing the complete address, the respondent stated it was a matter of public record anyway. Some respondents only provided partial addresses or relationship of household members at an address, but overall very few respondents actually refused to provide all information. However, this study may provide a very conservative idea of respondents' unwillingness to reveal the information of interest, especially since it was conducted in face-to-face mode and participants were presented with interviewer's Census Bureau badges to verify the legitimacy of the study as well as compensated for their participation.

5.4.6 Willingness to Do a Phone Interview

During the cognitive and debriefing portion of the interviews, several respondents expressed hesitation or apprehension when asked "(49) would your responses be any different if we had call on phone..." and "(018) if we were on the phone and I was going through the introduction, do you think it would have affected your decision to participate." Those who were explicit about their concern cited fraud, privacy, and not being able to confirm or be sure who is on the other end of the phone, such as these respondents (SC7916): "I'm a lot more hesitant to give any type of information especially private information"; (TK2912): "I would have probably been hesitant and probably wouldn't have answered some of the questions"; (PM89341): "I don't know that I could trust people over the phone"; and (SC24872): "I can't always trust who is on the other end of the phone and I personally wouldn't want to give my information to somebody I couldn't see and know this is who I'm talking to and yes they're legit. You showed me your badge." On the other hand, one respondent (SC29429) did state because it is the Census Bureau and it would be after they had just participated in the census, they would likely still cooperate. Another respondent (EP5785) stated that though she would still do the interview over the phone that she wouldn't have stayed on the phone that long. When probed how long she would be likely to stay, she said about 10 minutes.

To allay some of these concerns expressed by respondents, there are several recommendations that might provide some sense of trust for respondent when approached by phone:

- As much as possible, have "Census Bureau" show on recipients' caller ID.
- Design advance mailing material to name the U.S. Census Bureau more prominently on the envelope, as some respondents admitted that they did not open the advance

letter or threw it away. Most people are not aware that the Census Bureau is a part of the Department of Commerce.

- Design a notification campaign (billboards, radio, news) that will inform the general public that the Census Bureau may be contacting households to ask some follow-up questions to help improve the census questions.

5.5 Problems with Question Wording and Order

Another goal of the cognitive test was to explore comprehension issues with the TCFU questionnaire. This section presents the result of this effort.

5.5.1 Confusion and Misunderstanding

One of the goals of the cognitive interviews was to detect any confusion or misunderstanding related to specific questions from the TCFU. We looked at questions that yielded incorrect responses (based on the information known about the respondent living situation), questions that participants found confusing, and questions that yielded “unscripted” answers (responses that did not fall into any of the provided response categories). The latter may be indicative that either the questions were confusing or did not offer adequate response options. **Table 5-29** presents counts of times when questions were coded as inducing incorrect responses, causing confusion, or provoking unscripted answers. The table is based on 108 cases where one of those codes was assigned at least once. However, the fact that the remaining 118 cases were not assigned any of such codes is not necessarily indicative of an absence of problems—such problems, if existent, were not voiced during the interview or not detected by the interviewers. The total column represents counts of instances when a question was coded in at least one of these three categories. Not surprisingly, follow-up questions were found to be more problematic than gate questions—in most cases, follow-up questions required an open-ended response (address, date, names), while all gate questions were in the Yes/No format. The most problematic questions seem to be the “how often” and “when did dup live or stay at an address” questions. These results are not surprising given the number of times these questions were asked—the structure of the TCFU was such that each gate question that yielded a positive response was followed by a question on address and frequency of being at that address (see examples and descriptions of the TCFU and the gate questions in **Chapter 2 Methodology, Section 2.4.2**).

Table 5-29. Frequency of Occurrence of Incorrect Responses, Confusion, and Unscripted Answers, by Question

Question	TCFU Incorrect	TCFU Confused	TCFU Unscripted Answers	Total
Gate Questions	56	58	36	150
Did [dup] move?	15	7	2	24
Laundry list questions (F13, G14, H9)	7	9	1	17
Stay with a parent	6	6	3	15
Stay with a son/daughter	5	7	2	14
Own a seasonal/vacation home	2	6	2	10
Stay anywhere else	3	2	4	9
Stay with relatives	4	2	3	9
Own another residence	1	4	2	7
Stay with significant other	1	2	3	6
Stay with brother/sister	1	3	2	6
Stay somewhere because of a job	1	1	4	6
Stay with friends	1	0	4	5
Type 3 laundry list (I, J, K, L, M, N, O, P, Q)	3	2	0	5
Stay at a jail, nursing home or emergency shelter (R2)	3	1	0	4
Nursing home	1	0	2	3
Stay at any other GQ (R3)	0	2	1	3
Stay at a rehabilitation hospital	1	2	0	3
Another address for school	1	1	0	2
Is [dup] a foster child	0	0	1	1
Stay somewhere for health problems	0	1	0	1
Follow-up Questions	51	72	338	461
How often did [dup] stay there?	9	19	210	238
When did [dup] live or stay at that place?	13	26	113	152
Was [dup] there on April 1 st ?	19	10	4	33
Names of the people who usually live there	3	7	6	16
Stay for more than 7-nights total	7	1	2	10
What was the address of that place?	0	8	1	9
Stay overnight while under arrest	0	1	0	1
Stay somewhere for child? care	0	0	1	1
How many semesters stayed at an address?	0	0	1	1

Confusion with the TFCU questions seemed to vary by respondent age. **Table 5-30** presents the percent of respondents who were assigned a confusion code at least once. Even though we did not run a trend test, there seems to be a positive correlation between age and percent of respondents who were assigned at least one confusion code. This is not surprising given the research on respondent cognitive abilities and age (Herzog & Dielman, 1985; Andrews & Herzog, 1986; Knauper, Belli, Hill, & Herzog, 1997). Interestingly,

nonproxy cases received the confusion code more times than proxy cases (50% and 38%, respectively). This may be caused by proxy respondents being less knowledgeable; thus, they can be less motivated and pay less attention to the survey questions.

Table 5-30. Percent Respondents Assigned at Least One Confusion Code by Respondent Age

Age	Percent with at Least One Response Coded as Confusion
18-29	36%
30-49	40%
50-69	46%
70+	56%

The meaning of the word “stay” provoked the biggest confusion. Many participants asked for a definition of “stay,” and some felt they couldn’t answer the question since no definition was provided. For example, one respondent (TF56982) was unsure if “stay” meant “reside” or “visit.” Another respondent (TF84903) commented that the definition of “stay” includes living and would involve more than a month. For that respondent “stay” and “visit” were completely different. Similarly, another participant (SC22866) interpreted stay to mean “plan to live there”; while “visit” meant going on a holiday to spend time with family. The definitions of “live” and “stay” brought further confusion in the interpretation of living situations; for example, one participant (EP5785) answered “yes” to staying with a son or daughter because she had minor kids living with her (this question was intended to gather stays at another place with adult sons or daughters).

Another point of confusion was the laundry list, as a few people selected multiple categories to describe the same event because they couldn’t distinguish between hobby and vacation if they went skiing, or a conference and vacation if they extended their trip.

A few people also were confused when answering for just 2010 (given most interviews took part in 2011). In addition, some participants were not answering for the whole year, but rather from April 1 until the end of December 2010. For example, one respondent (SC79069) said “No” to moving because she was thinking about having moved from her current residence. She later revealed that she moved into her current residence in March 2010. In another instance (SC24872), when asked what time period the respondent was thinking about, the respondent said, “Majority of the time period I was thinking about was from like June to December, more of the latter part of the year. That was more of my focus.”

Providing names of other people that usually stay at a location (especially when it was a facility, such as a hospital or a hotel) was confusing to respondents. Such questions often

yielded unscripted responses. For example, one participant (SC23395) responded: “No one—it’s a hospital.”

For those who moved (and especially proxies who moved with the dup), answering if someone had moved was confusing. The question was often misinterpreted as asking if they had moved from their current residence; for example, one participant (SC1680) commented: “This is a stupid question. You can see that I’m still here.” Another participant (SC2365), responding for both he and his wife, interpreted the question to ask if his wife moved away from him.

The “how often” questions also brought up confusion during the interview. Some respondents misinterpreted the questions to mean how much time during the day/month/year one spends at a particular address; thus, responses often had explanations such as “half the time, because I go to work all week.” A good example of the misinterpretation of the “how often” questions is a participant (SC7476) indicating staying at home “less than half the time” and explaining: “I only stayed there after hours when I’m not at work and school.”

5.5.2 Incorrect Responses

The most incorrect responses were coded in instances when respondents had to answer if someone was at a particular address on April 1, 2010. There were two main reasons that led to incorrect answers: (1) respondents were either confused by dates, or (2) were thinking of a location previously mentioned in the interview. For example, a participant (SC6252) initially reported not being at an address on April 1, 2010, but later, during the cognitive portion of the interview, it became clear she was.

The question on whether someone has moved induced incorrect responses as well. This was particularly true for households with multiple duplicates, where incorrect responses were mostly caused by misinterpreting the statement “other than the places you already mentioned.” For example, one respondent (SC5273) said “yes” for himself and his wife, but “no” for his kids, despite the fact that the whole family moved together. “Other than places you already mentioned” may have been interpreted to mean when he mentioned it for himself. A possible reason for such responses is that participants learned that once they responded positively to a gate question, a series of more detailed questions followed. Another cause of misreport seems to be when respondents interpret the question on moving to mean “have you moved from the address I just asked you about?” which was usually their current address. In this instance, respondents may be thinking “I haven’t moved *from* here” and not considering that they did recently move *to* this place.

The questions on when someone lives or stays at a particular address were also assigned codes for incorrect responses, mainly due to date confusion. Usually, such discrepancies

were revealed by the respondent at a later point in the interview; for example, a participant (AN5953) reported she did not live at a particular address in 2010 in Section E, but later reported this was an address she moved from in 2010.

The 7-night follow up question (intended to measure a total of 7 nights over the course of the year) was also misinterpreted by the majority of respondents. It was asked of 66 participants and was misinterpreted to mean 7 consecutive nights by 58 respondents. When probed whether thinking of 7 nights total would change their responses, more than half of the respondents said it would. For example, one respondent was staying with parents at least once a month, but said “no” to the 7-night question, thinking of 7 consecutive nights (SC5273). Similarly, another participant made the error when reporting on a duplicated child, not considering nights the child had spent at the grandparents’ or at friends’ houses (SC24872). One participant (SC71457) explicitly expressed confusion about the 7-night question, but said that regardless of the definition of what constitutes a 7-night period, responses to the TCFU questions would not have changed.

5.5.3 Unscripted Answers

We looked for responses that were volunteered by participants and did not fall into any of the provided response categories as indicators of unclear question meaning, unclear response task, or response task that does not fit the answer categories. Majority of the unscripted answers were provoked by one of the follow-up questions asking about frequency of staying at a particular address, when an address was provided—the “how often” question. Many participants volunteered “all the time” (used at least once by 41 of the respondents) and “every day” (used at least once by 25 of the respondents). In most cases, even when interviewers read the response options, participants still continued to respond using unscripted responses.

Unscripted answers were also dominant in another type of follow-up to the address question, asking when the dup lived at a particular address (“when did [dup] live there”). When respondents were still living at the address in question and were asked about dates, they often responded with “until now” or “until present” or by saying “he/she is currently living there.” For example, when asked “During 2010, when did you live at that place?” one participant (EP775) said: “We are still living there.” It was also common for participants to ignore the “during 2010” qualifier and provide a date outside the timeframe of interest when someone started living at a particular address. For example, when asked the same question, one respondent (AN22237) said: “We moved in 1963 and have been there ever since.”

5.5.4 Negative Reaction

Interviewers were instructed to note any negative reactions expressed by respondents during the interview. **Table 5-31** presents instances of negative reaction codes assigned to

specific questions. This table is based on only 32 cases who voiced a negative reaction during the administration to TCFU questionnaire at least once.

Table 5-31. Frequency of “Negative Reaction” Code Assigned to a TCFU Question

Question	Number of Times Coded as “Negative Reaction”
Was [dup] there on April 1 st ?	6
How often did [dup] stay there?	6
Stay anywhere else	3
Stay with friends	3
When did [dup] live or stay at that place?	3
Stay with significant other	2
Did [dup] move?	2
Names of people who usually live there	2
Stay at any other GQ (R3)	2
Stay with a brother/sister	1
Stay somewhere because of a job	1
Laundry list questions (F13, G14, H9)	1
Stay with a parent	1
Stay at a jail, nursing home or emergency shelter (R2)	1
Stay with a relative	1
Own a seasonal/vacation home	1
Total	36

Most negative reactions were related to privacy; participants found certain questions (or the repetition of the same questions for every member of the household) to be too intrusive. Responses like “you are being nosy” and “none of your business” came up repeatedly. Participants did not like reporting on other family members, especially children and particularly in cases when the child was the only duplicate. One participant (TF67354) became very upset when she was asked about her spouse and said: “I don’t care to get into...it seems to me that this question is trying to make something out of nothing. I don’t like the inference of that. I don’t like that.” She seemed to interpret the questions about the whereabouts of her husband to imply that he was cheating or doing something wrong behind her back.

The reference to April 1, 2010 also provoked some negativism; participants wanted to know why that particular date was of interest. One respondent (TF58214) stated: “The question that you kept asking about April 1st made me wonder what they are after. It was slightly creepy.”

Overall, negative responses were related to not understanding the goal of the survey; many comments on intrusion were qualified by “What does this have to do with the census?” One respondent (DC89767) commented that the Census Bureau was “prying into information they shouldn’t be concerned about.” Another respondent (PM89341) wrote on the EHC

form: “Most of the questions are innocuous, but often seem intrusive – and I seriously doubt if immigrants or ‘aliens’ would answer them. I think you need to give a believable explanation why you are asking them.”

5.6 Problems with Form Design

5.6.1 Problems with Skip Patterns

Overall, we experienced a very low number of interviewer skip errors across both rounds of cognitive interviewing. The skip errors that were detected were mostly errors of commission rather than omission. In at least two cases (BS99213 and VW6613) such failure to follow the skip pattern actually produced the dup address that otherwise may have remained unrevealed. **Table 5-32** summarized the frequency of skip errors by type of error.

Table 5-32. Frequency of Occurrence of Skip Errors by Skip Error Type

Type of Skip Error	Number of Times
Skipped a gate question to go to a followup question*	1
Skipped a followup question	4
Administered unnecessary questions	9
Routing error (C, D, E sections)	2
Wrong section prepared*	1

*Round 1 only

The majority of the errors occurred because interviewers administered unnecessary sections, which was the case with Type 1 interviews when both addresses were recognized, but instead of skipping to the end, interviewers administered Sections F, G, or H, or failed to skip to the appropriate gate question and asked unnecessary subquestions.

Such problems are not anticipated for when the instrument is programmed for CATI administration. Another advantage of having a computerized instrument is the possibility to control the length of the instrument, thus reducing respondent burden. For example, an algorithm that checks if any of the provided addresses during the interview is a match to what is in the dup file can be utilized to end the interview once the dup address is revealed. In addition to minimizing respondent burden, this approach would minimize sensitivity and privacy concerns by not requiring repetition of the same detailed questions for other household members and especially children.

5.6.2 Age Filters

Based on previous cognitive testing (Childs et al., 2009), the TCFU instrument was created to ask targeted questions about the dup persons based on (1) phone number match (Type 1 vs. Type 2 instrument); (2) dup’s age (e.g., Section F was asked of adults only, Section H was administered to children, and Section G was asked of seniors only); and (3) whether the match was a household-household match (Type 1 and 2 instruments) or household-

group quarters (GQ) match (Type 3 instrument). Overall, this strategy seemed to work well and was adequate for various living situations. A small number of detailed questions, however, were found to be age inappropriate. Some respondents laughed when we asked about hobbies and activities of people 70 years of age or older (Section G, Q14), or whether they were in the military in 2010 (Section G, Q10). For example, when asked the military question, one participant (TK7472) said: "Alright, let's start from the beginning; my father is going to be XX on Christmas day, so obviously he's not been in the military. I don't think we'd want to put our country's interest at risk with him and neither would he, so I thought that was a dumb question for both my parents, truthfully. Like the question didn't take any thought what was... umm, the information that you already had." Another participant (TK91346) laughed and said: "I am too old for that."

Another set of questions (asking about who usually lives at specific places such as hospitals, rehabilitation facilities, hotels, etc.) were found inadequate. Respondents either laughed or were perplexed by such questions. Thus, for example, in Section G, Q7 (asking if the senior has stayed in a facility) and Q8 (asking if the senior has stayed in a hospital) should not have a follow-up question asking about the names of the people who usually live there, as such information is not part of respondent's knowledge and residents are usually transient.

5.6.3 Address Information

In addition to the age-targeted modules, the TCFU instrument was designed to provide both addresses to respondents when a phone match existed. This strategy seemed to work well, and only one participant was confused after receiving both addresses at the beginning of the interview (TF4105). The second address was likely the address of a roommate, who moved out in 2010, but both addresses were associated with participant's cell phone number. According to the interviewer report, the respondent was a little confused at the beginning of the TCFU as he did not recognize the second address, but soon understood how to respond. This was the only Type 1 case where the dup address was not revealed. In all other instances (42 cases), presenting both addresses was perceived well by respondents and no one expressed any privacy concerns.

5.6.4 Asking Respondents about Staying with Family/Friends and Significant Others

In asking respondents about staying with different family members or relatives, we were able to reveal 16 duplicate situations. In addition, these questions yielded 37 complete and 39 partial addresses. In most situations, if the address where dups lived or stayed for any amount of time was a family member's, respondents were able and willing to provide a complete address. When the duplicate just visited for a short period of time, such as for a weekend or 2 weeks, or the family member lived in another state, we collected a partial address, largely just the city and state.

Table 5-33 is a cross tabulation of reasons for duplication and positive responses to the questions that ask about staying with family, friends, or significant others that yielded an address (either complete or partial). The total is the number of addresses that were provided as a result of saying “yes” to one of the questions that asked about staying with family, friends, or a significant others. Each row presents the number of addresses provided by reason for duplication. For example, seven participants, who were duplicated as a result of using a convenience address, answered “yes” to staying with family, friends, and significant others gate questions, but provided only four addresses in the follow-up questions. Similarly, 20 respondents, who were duplicated at a relative’s address, answered “yes” to the gate questions about staying with family, friends, or significant others, but not everyone provided an address to the follow-up questions—we obtained a total of 15 addresses from such respondents. Overall, this table illustrates that questions related to family, friends, and significant others were probably perceived as too personal, regardless of what was the actual reason for duplication.

Table 5-33. Number of Addresses Provided for Staying with Family/Friends/Significant Others’ Question, by Reasons for Duplication

Reasons for Duplication	Number of Addresses Provided as a Follow-up to Staying with Friends, Family, or Significant Other
Completed wrong form (n=2)	0
Convenience address (n=7)	4
Custody (n=6)	6
HU mix-up (n=1)	1
Moved (n=49)	15
Other property (n=30)	6
Relatives’ household (n=20)	15
Total	47

5.6.5 Laundry List Questions

The TCFU questionnaire employed a “laundry list” series of questions asking about various unlikely, but possible, reasons for duplication toward the end of the interview. In only one occasion (PM91370) the “laundry list” question confirmed the dup address that was already revealed earlier. In this case, the respondent and her husband were duplicated staying at a grandfather’s address (to which they ultimately moved in 2011). The respondent’s husband was going to bricklaying training at the time and was spending the majority of the week at the grandfather’s house. The respondent herself would also drive to the grandfather’s house to spend time with her husband. Respondent filled out the census form for their address at the time, but later learned that her mother-in-law filled out the census form for the grandfather’s house, listing the respondent and her husband as residents there.

Most respondents seemed to not pay complete attention to the separate items that constituted the laundry list and would answer “no” to all, but backtrack and eventually change a response to reflect being at a conference or caring for someone at a hospital.

6. KEY LESSONS LEARNED

This chapter reviews key lessons learned for interviewing and respondent recruitment during the qualitative interviewing and cognitive testing phase of the TCFU. The reader is cautioned when interpreting or generalizing these lessons learned because the full TCFU interview operation is quite different from the recruitment logistics and details of this study. The TCFU will be CATI programmed instrument; the “recruiters” will be the interviewers; the TCFU is mandatory by law and not compensated; and there are no specific quotas to fill because all cases should be worked. However, parallel issues can be observed, and we offer recommendations to the TCFU operation in the last section.

6.1 Interviewing

Twelve experienced interviewers completed 226 cognitive and 50 qualitative interviews over the course of two rounds of interviewing. Because this particular study recruited respondents from a list sample, the majority of the interviews were conducted in the field, rather than at a centralized location such as a cognitive interviewing laboratory. This introduced many lessons learned related to interviewer selection, training, and management.

6.1.1 Interviewer Selection

Although respondent cancellations and “no shows” are expected problems during the interviewing process, several interviewers were more successful than others. We measured success by interviewer productivity, specifically being able to complete assigned interviews. The following characteristics were observed about successful interviewers and can be useful for interviewer selection on future studies.

- Placed one or more reminder calls prior to the appointment date to establish a rapport with the respondent and to ensure that the respondent had marked his or her calendar about the appointment. Not all interviewers were comfortable interacting with respondents on this level. We recommend providing a standardized script or designate someone else make the reminder calls.
- Provided recruiters a flexible schedule for making appointments—when respondents found it convenient to attend to an interview, they were more likely to follow through.
- Used Web accessible tools, such as Google calendar, that allowed for real-time availability updates (e.g., recruiters could pull up the calendar while on the phone with the respondent without fearing that the availability may have changed).
- Felt comfortable in handling unexpected situations, especially because respondents came from different backgrounds and expectations.

- Prepared for the interview by having an organized portfolio of materials (printed TCFU, protocol guide, EHC, consent forms, receipt form, distressed respondent protocol) and supplies (audiotape, recorder, incentive money, directions, etc.)

We learned that the most successful interviewers also demonstrated the following characteristics. These are specific to completing interviews in the field.

- Receptive to meeting respondents in a location outside of the immediate area where the interviewer resided or worked (e.g., for this study, some interviewers drove as far as 80 miles one way to complete an interview).
- Conducted research ahead of time about the area of the interview:
 - Confirmed that the agreed upon meeting location still existed (e.g., some respondents suggested public locations that were defunct).
 - Confirmed the exact address and availability of the meeting location (e.g., some respondents suggested meeting at a specific library, but gave the wrong address, or suggested a meeting time that was outside of the library's operating hours).
 - Researched backup meeting locations in the event that the first location could not be used.
 - Researched the best way to travel to the meeting location. For example, one interviewer determined that taking a ferry rather than driving would be more efficient.
- Felt comfortable with conducting interviews in areas not usually frequented by the interviewer. Advance research helped lessen the discomfort on the part of the interviewer and suggested other areas as a meeting point.
- Motivated to conduct interviews in the field and to handle logistics that came with these type of interviews, such as rescheduling interviews on his or her own and following up with respondents after a no show.

6.1.2 Interviewer Training

All interviewers participated in a 2-day in-person training at the Census Bureau headquarters. We learned the following about interviewer trainings:

- A well-designed background and research objective module was significant in impressing upon the interviewers the importance of the study. For example, the Census Bureau training included examples of how duplication might occur in the census and the purpose of the TCFU.
- Because of the length and complexity of the TCFU questionnaire, a 2-day training did not seem sufficient. Remedial trainings were conducted because several interviewers made mistakes in following skip patterns. A 3-day training would have been ideal.
- During the training, several demonstrations of the TCFU interview were provided by the trainers. Because the trainees (interviewers) were still learning the flow and skip pattern of the TCFU at the time, many could not easily follow the sequence of the

questions even though they had the TCFU in front of them. We suggest the following for future trainings when paper questionnaire versions are used:

- Read the question identifier (usually a number) before reading the question itself to ensure that trainees are following the same sequence.
- Invite trainees to participate in the demonstration, such as acting as the respondent by following a script.
- Conduct a round-robin interview. Because all interviewers are quite experienced, this training style will facilitate discussion and help to reinforce desirable interviewer behaviors.

Before starting of the second round of interviewing, a refresher training was conducted, but the training length was shortened to 1 day. Four new interviewers were added in this round. Among the four new interviewers, two had participated in the first training, but did not conduct interviews during the first round. We learned the following from the refresher training:

- The new interviewers (including the two who had participated in the first training) needed more reinforcement, particularly related to the level of details needed for the summary report and prepping the TCFU questionnaire. We had arranged for a teleconference in advance of the group training to go over these topics, but it still was not sufficient.
- Training modules about interviewing logistics were added and received positive feedback. The additions were in response to issues that arose during the first round of interviewing. Topics like these could be addressed during the initial training on future studies:
 - interviewer safety in the field,
 - decision tree on how to handle unexpected situations,
 - “good” and “bad” examples of summary report details and the use of the report template, and
 - experience sharing on various aspects of interviewing and interactions with respondents.

6.1.3 Managing the Interviewing Process

The most significant procedural adjustment was prepping the TCFU questionnaire for cognitive interviews. Although the TCFU will be interviewer administered using CATI when implemented on a large-scale operation by the Census Bureau, the cognitive interviews used a paper version of the TCFU. Advance “prepping” of the TCFU questionnaire was necessary in this study to facilitate the interview flow. For example, the name of the duplicated persons in a household can be added to each question during the prepping process. Originally, this was designed to be a recruiters’ task because recruiters have all the Title 13 information for a case from the laptop. However, we reassigned this task to the interviewers because of three reasons.

1. Because this study involved a large team of interviewers that are stationed at different locations, a prepped questionnaire might not be received by the particular interviewer in time for an interview.
2. The prepping instructions were written using logic statements such as “if X, then Y.” Interviewers were a better match than recruiters to interpret these logic statements.
3. The time taken to complete prep served as an opportunity for the interviewer to become familiar with the questions to be administered as well as the names of the duplicated persons.

Although having interviewers prep the TCFU questionnaire had its merits, it was time consuming and was an added task required of the interviewers. However, interviewers reported gaining efficiency as the interviewing period progressed. Additional adjustments were made to facilitate this process:

- Created electronic folders by type of interviews. Each folder contained the “minimum sections” of the TCFU in one file. Although the TCFU questionnaire has sections tailored to each specific case (e.g., senior dups receive Section G), certain sections are administered to all dups, and we refer to them as “minimum sections.” We extracted these sections and organized them in one electronic file so they could be printed for each interview. We also extracted each variable section in its own file and organized them by Type 1, Type 2, and Type 3 interviews. This way, interviewers could print just the relevant sections for the type of assigned interview, making the questionnaire assembly process simpler.
- Printed TCFU on regular-sized paper (8.5x11), rather than the 11x14 odd size that would require special handling.
- Provided interviewers with preprinted Event History Calendars (EHCs) for the cognitive interview portion. (The EHCs were used as part of the cognitive interview, not as part of the TCFU.)

We also implemented additional management procedures, and recommend them for future studies:

- Provide interviewers with a checklist of supplies and materials that are needed for an interview.
- Require interviewers to report on the outcome of an appointment right away to facilitate progress monitoring.
- Closely monitor summary report completion, while allowing for flexibility when several interviews were completed close to each other.
- Hold regular interviewer debriefing to share lessons learned and provide feedback to and from recruiters.

Furthermore, during the interviewing period, interviewers continued to raise an issue—the design of only asking only about dups in the TCFU interview was problematic when the

respondent was a proxy. Interviewers reported that proxy respondents were surprised that the interviewer had no questions about them, the respondent. Because of protecting confidentiality and privacy, the interviewers could not disclose the suspected duplication. Proxy respondents, however, were in general satisfied with the explanation that not everyone in the household is covered in the TCFU. This explanation was part of the Frequently Asked Questions (FAQs) provided to the interviewers. However, the situation became quite sensitive when the dups were minor children or when the dups were in jail or other socially undesirable situations. This is an important lessons learned because interviewers needed a more convincing response in the form of an FAQ.

6.2 Respondent Recruitment

As discussed in **Chapter 2, Section 2.6**, the team of recruiters contacted over 3,000 households during the active recruitment period, with a success rate of between 9%. Advance letters were sent to one side of a case (in some cases, both sides) prior to starting the telephone recruitment, although the cold-calling method complemented the recruitment when necessary. In the first round, four recruiters were site specific. In the second round, two recruiters who were qualified to be interviewers changed their role, and three new recruiters were added. In total, seven recruiters participated over the duration of the study, and we present lessons learned about managing recruitment and recruiters, the advance letter mailouts, and identifying false matches during recruitment.

6.2.1 Managing Recruitment and Recruiters

As described in **Chapter 2, Section 2.6**, Census Bureau provided a list of suspected duplicates on secure loaner laptops, and the list was organized by households within 100 miles of the interviewing sites and identified by 27 HU and GQ living situations. Several lessons were learned on managing this component, but they are specific to this study and the strict PII protection stipulations associated with using Census Bureau loaner laptops (they are disabled for the Web or USB port, and the list cannot be printed); it was not possible to use an automated case manager.

File Layout and Case Assignments

Based on our experience, we recommend the following approach for presenting the file layout on the laptop and for making case assignments.

- *More information helps target specific quotas.* To transfer as little PII information as possible, Census Bureau provided minimal information about the households on the laptop. However, without gender and race/ethnicity information, we were unable to ascertain these characteristics until screening or after the interview itself were completed. Reaching diverse demographic characteristics in the respondents was therefore challenging to control; however, different racial compositions naturally occurred during the recruitment process.

- *Minimize the number of files that any single recruiter needs to access on the laptop, thus minimizing file sizes.* We implemented the following in the second round:
 1. Analyzed the available sample ahead of time and divided it into two subsamples. Gave priority to the subsample that could be worked faster, specifically cases that were closer to the interviewing sites (preference was given to a 50-mile radius) and households that were within the same area.
 2. Divided the suspected duplicates list by interviewing sites rather than by each of the 27 HU and GQ subtypes.
 3. Within each of the interviewing sites, divided the files by the three types of interviews—Type 1, Type 2, and Type 3—because they had different recruitment goals.
- *Remove households without a telephone number from the recruitment files (the side used for advance letters).* Since the recruitment was a telephone operation only, contacts with households that did have telephones could only be initiated by the households if they responded to the advance letter. The recruiters could not initiate the contact and therefore these cases quickly became cold.

Recruiting for “Dependent” Interviews

As discussed in **Chapter 2, Section 2.6.4**, despite reviewing every possible completed independent interview for eligibility, recruiting for dependent interviews proved to be a challenge. These interviews are called dependent interviews because they are recruited dependently based on a completed interview with the other side of the address (the “independent” interview). Throughout the project, Census Bureau was aware of the challenges related to coordinating the recruitment of qualified dependent households. First, an independent interview must be completed with enough time left in the field period to recruit for the dependent interview. Second, the other side of the completed independent interview may not qualify for recruitment as a dependent interview. Exclusions were households with only one resident listed or a single dup who is the only eligible adult listed, households that were further than 100 miles from where the interviewer was stationed, the dup was not revealed in the independent interview (therefore the dependent address could not be positively matched), or there was no telephone number for recruiters to attempt. Among those that did qualify, not all would render useful data and therefore were excluded after the Census Bureau reviewed the data. For example, in a Type 2 partial household match, single adult dup interview (DC93430) revealed that the single dup had lived with her cousin temporarily as she transitioned between homes in Texas and Illinois. Because the reason for duplication was clear after the independent interview, pursuing a dependent interview with the cousin would not have been meaningful. Furthermore, the same interviewer who conducted the independent interview cannot interview the dependent household, thus restricting the availability of the interviewing staff. At the end of the project, a total of six dependent interviews were completed, including two cognitive and four qualitative interviews.

To increase the success of recruiting dependent households, our recommendations for future operation are as follows:

- Front load case assignments with cases that have the greatest likelihood of yielding dependent interviews. This would require a significant amount of time by the recruitment task leader to analyze the sample, but would likely increase the chances of a dependent interview being completed.
 - Select cases where both sides have intact phone numbers; otherwise, the recruiters cannot reach the dependent households.
 - Select cases where there are multiple potential adult respondents on each household side, so attempts can be made with more than one adult.
 - Initially assign cases where both sides are within geographic proximity to an interviewer.
- During independent interviews, have interviewer collect multiple alternative phone numbers for dependent side. Immediately review all completed cases with interviewers and identify possible dependent cases for Census Bureau to review.
- Coordinate with the Census Bureau so that data review can be completed quickly for cases that have dependent potentials, making sure there is sufficient time to recruit these households.
- Possibly allow cases with unrevealed dups to be eligible. These are cases where the dup address was not discussed in the independent interview, but there was not enough evidence to determine that they were false matches.

Essentially, the coordination for dependent interviews requires a high level of management attention and coordination between all parties involved.

Best Practices for Respondent Recruitment

Based on recruiters debriefing, we identified the following best practices for respondent recruitment:

- Refer to the advance letter mailed from the U.S. Census Bureau. This was effective especially for those respondents who recalled receiving the letter.
- Stress how the respondent's experiences and perceptions with the census could make the next census better (the respondent will have an impact in improving something that everyone does).
- Promise that the interview and audio taping is voluntary and that any question can be skipped, and there are no right or wrong answers (respondent is in control/not compelled to give information they are not comfortable providing)
- Convenience the respondents, for example, mention that interviewer will meet them in a safe environment, including their home or neutral public location at a time convenient to them. This was particularly important to seniors who were uncomfortable with a stranger coming to their home or otherwise unable to go to another place (infirm or caretakers of others).

- Legitimize the interviewers by asking respondents to confirm the identity of the interviewer by an official U.S. Census picture ID badge that the interviewer will wear.
- Although it was at times frustrating to have to coordinate two computers (the PII laptop and an Internet and Google maps connected computer), recruiters turned this to their advantage when scheduling respondents by explaining they were slow because they were using two computers because all PII was isolated on an independent machine or on paper. Recruiters said this level of PII security impressed recruits and made them happier to participate.
- Be empathetic and listen to respondents' concerns; however, try not to let it dominate the purpose of the recruitment call.

An important lesson learned about best practices is to use experienced recruiters. Because each recruiter has his or her own strengths and weaknesses, we suggest tailoring case assignments according to recruiters' strengths. For example, although most recruiters reported that the senior population was the most difficult to recruit because of trust and comprehension issues, one recruiter was particularly successful. Therefore, we assigned more recruitment among the senior population to that recruiter. However, this recruiter was less successful in bringing anomalous situations to the management team, such as false matches (see **Section 6.2.3** on identifying false matches and problematic sample during recruitment). Having a dedicated recruitment task leader is vital to this process. The task leader can select cases in a purposeful manner (e.g., more households with greater distances between Side A and B address) and make strategic assignments to different recruiters.

Observations about Type 1 Cases

Type 1 cases, where the phone number is shared by Side A and Side B addresses, had unique issues that the recruiters had to navigate.

- Among households in which we were able to make contact using the movers screener in Round 2, Type 1 cases appeared three times more likely to be movers than Type 2, nonphone match cases.
- Telephone numbers were often cell phones. Recruiters reported getting through to respondents while they were driving or while the recruit was at work, and the call experienced interruptions by colleagues and scheduled activities.
- Some respondents were confused about how the recruiter obtained their cell phone number and the Side A and Side B addresses. Recruiters responded honestly that it was the information available to them from the U.S. Census Bureau. These same questions were brought up during interviews as well. Recruiters and interviewers reported that respondents generally accepted that they must have provided their cell phone information on their decennial census forms.
- Per the study design, recruiters provided both addresses to the respondent to determine which one was being called. Although providing both addresses

occasionally caused initial anxiety on the part of the respondents, no recruiter reported lasting sensitivities. Some examples of the anxieties included:

- When respondents had moved and the recruiter provided both the old and the new address, the respondents saw the old address as “wrong.” Respondents were less concerned about the sensitivity of the addresses than they were that the census might have incorrect or erroneous information. It was important to them that the address from where they moved should no longer be considered the “correct” address by the Census Bureau.
- Another situation with the “wrong” address surfaced when respondents reported that one of the addresses provided by the recruiter was zoned commercial or work places and not a housing unit. Respondents knew these addresses because they, or their family member, either worked at or owned these businesses. Because they associated the census with places they live, hearing the workplace addresses alarmed them. In a few instances, respondents’ initial reaction was that the government had “caught” them (that they had made a mistake in the initial enumeration). Recruiters had to become adept at relieving these concerns, especially in several occasions where they spoke to a nondup spouse and the other address was the dup’s work address.

Furthermore, subtype 1g cases (same phone, partial HH match where all dups are children) is unique in that only minors are duplicated in the household. As with all Type 1 cases, because the phone number is the same on both sides, it is impossible for the recruiter to know which address is reached when the telephone is answered. The adult contacted might be unaware of the other address, thus creating a potential confidentiality and privacy violation. As a solution, Census Bureau instructed that 1g cases be treated like Type 2 cases, both in recruitment and interviewing. To minimize the risk to privacy, only two recruiters were given these assignments and were trained in the subtleties of the task. One recruiter reported that she attempted to verify which address she was calling by saying “to verify that I have the right address can you give me just the first two numbers of your address.” This provided a nonthreatening opening to having the respondent supply enough information in to determine which address she had actually reached. Once this hurdle was overcome, recruitment of these cases proceeded similarly to other Type 2 cases, without any particular sensitivity issues arising on the part of the respondents.

Challenges during Screening

Several challenges surfaced during the respondent screening process, and illustrated that scripted screening questions need to be enhanced by probing.

Screening Movers

In the second round, Census Bureau instructed that recruiters screen out households that had made a permanent move between March and August of 2010 (the decennial census field period). However, simply administering the scripted screening question asking respondents whether they moved between March and August 2010 was not sufficient.

Although recruiters emphasized the term “permanent move,” probing further to determine the nature of the move was consequential in a few cases. These were challenges encountered:

- Respondents had varied interpretation of what constitutes a “permanent move.” For example, some households were moving back and forth between two relatives or their own homes in ways that were not permanent and continued to fluctuate after the August 2010 date.
- There was some recall issue because some respondents were being screened in the spring of 2011, which was more than a year after their move.
- There were also several cases where although the respondent indicated that they had not made a permanent move between March and August 2010, they answered that they moved during the TCFU.

Screening for Federal Employment

One of the first questions in the screener was whether the respondent worked for the federal government. Such employment status made them ineligible for an incentive payment, but they could still participate in the interview. Surprisingly, some recruiters reported there was confusion when they used the script, especially among the elderly and disadvantaged. These populations would respond “Yes” to this screener, but when probed it was determined they were referring to any government check, including food stamps, social security checks, etc. Recruiters found this to be a problem even when they emphasized the word employed in an attempt to distinguish between payment and work.

Language Barriers

Because the recruitment and interviewing were designed to be conducted in English only, recruiters encountered language barriers when no adults in the household spoke English. We did not (and could not) collect detailed information on all language barriers encountered, but recruiters reported that Spanish or Asian language households were the most commonly recognized language barriers. There were 10 to 15 occasions in Round 2 where recruiters reached a Spanish speaker who then handed the phone to a child to translate. But the concept of voluntary research study and the census were too high level for children to grasp, and therefore, they were not a reliable source for gaining access to another English-speaking household adult (and our normal procedure would exclude speaking to children).

Common Respondent Reactions

Recruiters noted the comments that were mostly commonly made by respondents, and which required refusal aversion or additional explanations:

- Already filled out census so they’ve “done their part.”
- The government already has too much information.

- How neighbors/friends “cheated” on the census, their taxes, government checks, etc.
- Caller ID did not say “US Census Bureau.”
- Legitimacy of the project, including questioning if the project was a “sting” from an enforcement branch of government.
- Several recruiters felt that the seniors appeared more vulnerable when verifying address information about other locations where they lived and were more suspicious about giving out this information. As noted earlier, some recruiters were more adept at gaining cooperation among the senior population than others.

There was some anecdotal evidence that the \$40 incentive only appeared consequential to certain respondents’ decisions to participate. Recruiters reported that for Type 3 respondents, particularly those who were more economically fragile, the incentive payment seemed more effective. Offering *no* incentive certainly was not attractive. For example, for the military GQ cell, only one dup agreed to participate because of civic duty (military personnel are federal employees and therefore cannot be compensated for participating in a government-funded study like this). Other respondents were proxies who could get paid. In addition, recruiters also reported that while always welcome, it did not appear significant to most Type 1 and 2 respondents; refusals were based on distrust and a lack of time, and the payment was too small to have an impact on that need for time.

6.2.2 Advance Letter Mailout

As described in **Chapter 2, Section 2.6.3**, advance letters were sent to at least one side of the household. In the second round, one of the debriefing questions during the cognitive interview was whether the respondent recalled receiving the letter. **Table 6-1** shows that about half of the respondents recalled receiving the letter, even when the letter was sent to the other side from where respondents were reached.

Table 6-1. Recall of Receiving Advance Letter by Type

Type	Yes	No	Total
Type 1	18 (62%)	11 (38%)	29 (100%)
Letter went to side interviewed	15 (75%)	5 (25%)	20 (100%)
Letter sent to the other side	3 (33%)	6 (67%)	9 (100%)
Type 2	52 (51%)	49 (49%)	101 (100%)
Letter went to side interviewed	48 (58%)	35 (42%)	83 (100%)
Letter sent to the other side	4 (22%)	14 (78%)	18 (100%)
Type 3	26 (52%)	24 (48%)	50 (100%)
Total	96 (53%)	84 (47%)	180 (100%)

Our observations about advance letters are as follows:

- Because there was no way for us to predict which side of the address was a respondent's current address, it is difficult to speculate whether the operation was handicapped. What is certain is that the advance letter helped pave the way for respondents who acknowledged receiving it.
- According to the recruiters, householders who called in after receiving an advance letter were far easier to recruit, and it reduced overall recruiter hours for that case. Based on anecdotal information provided by recruiters at the Illinois site, about two to three calls were generated soon after each mailing (averaged 100-150 per mailing in Illinois). The volume was as high as six calls in one week when the mailing size doubled to about 250. However, not all calls resulted in an interview appointment because some were screened out because they moved or because the callers were not rostered since the advance letter reached new residents at that address.
- Referring to the advance letter during the initial call afforded the recruiter an opening to the call.
- Advance letters were sent to at least one side of the address (some seniors received letters at both sides because we knew they were harder to reach), even those without a listed telephone number. However, if households without a telephone number are removed, then no advance letter needs to be sent to these addresses. Those efforts can be redirected to households with a telephone number for which recruiters can follow up.

Finally, while the envelopes were printed with the mailing address and Case ID associated with the household in the list, the letter inside the envelope was generic to minimize Title 13 information generation. Generic letters were also less burdensome for the Census Bureau staff to produce. However, because only the label was printed with the Case ID, it was frequently an issue for recruiters when respondents called in after receiving the letter because the respondent had almost always already thrown out the envelope. Recruiters felt they appeared unprofessional trying to find respondents in the laptop file when the respondent initiated the call. As a solution, we recommend affixing a Case ID label to the letter to allow identification of respondents when they call in. Another alternative is that a self-mailer (where the letter is printed on slightly heavier paper, sealed folded, and the label is affixed to the outside, like newsletters often come) would be a better approach, but would require more coordination.

6.2.3 Identifying False Matches and Problematic Sample during Recruitment

Recruiters were trained to identify potential false matches and bring them to the attention of managers for possible exclusion. Recruiters paid special attention to name variations, relationships of the duplicate to other family members on each side, and distance between sides. Managers sent cases of suspected false matches to Census Bureau for determination. In Round 2, of the 34 cases submitted, 27 were determined by Census Bureau to be false

matches. Potential false matches occurred for a variety of reasons; the following three examples, identified during Round 2, illustrate the types of cases discovered (actual examples with PII removed):

- No one on Side A has the same last name as anyone on Side B. Last names may be similar sounding, but are two distinct last names (i.e., the three member O’Connel family and the four member O’Conner family). The only dup shared between the two is Emily O’Connel and Emily O’Connor who are within a year of each other. The last names look or sound alike but are not the same, and “Emily” is a very common name.
- A common name on both sides is “duplicated” but the relationships show that it is unlikely to be a true match. John Smith seems to live with different sets of biological parents on both sides (e.g., relationship codes are as follows: on side A there is Mary Smith =1; Joseph Smith =2 [husband]; John Smith =3 [biological child] and on side B there is Susan Smith =1; Brad Smith=2 [husband]; John Smith=3 [biological child]). In both cases the relationship between the female and the child was reported as biological; therefore, John is the biological child of the female on both sides and both sets of parents, with a common last name, and a common first name.
- A name is slightly misspelled on one side, and again relationships don’t bear a match. For example, aged couple John Smitt and Mary Smith are listed as 1 and 2 on side A (husband/wife) and on side B Jon Smit and Suzi Smit are 1 and 2 (husband/wife). The h in Smith was probably seen by the scanner as a t because of the poor handwriting of the elderly Mr. Smith.

Some additional problematic issues that occurred in 1g cases were where the phone number was shared, but the only duplicates were minors:

- On several 1g cases, a recruiter noticed that an identical phone number was listed across multiple household matches. Census reviewed the cases and determined that the same phone number also showed up across a number of additional cases that were not part of this study. Six cases within the sample were identified as affected, four 1g and two 1e cases. The census team agreed these cases should not be contacted.
- Because discrepancies in names listed are rare in Type 1 cases where phone numbers are the same in both addresses for a case, name differences between household sides indicated a possible false match. These cases all occurred with the same phone number shared among multiple households. Census Bureau concurred that this was probably an error in the data and no calls should be made to these cases.

The Census Bureau loaner laptops that recruiters received contained information such as name, address, age, household members, and telephone number. Although recruiters found much of the information invaluable to the recruiting process, there were also instances where they felt additional information would have been helpful in identifying false matches:

- **Gender.** Recruiters noted that because of the diversity of ethnicities in the sample it was often hard to distinguish gender or know how to pronounce names. This inhibited the use of pronouns and honorifics in the natural flow of conversation. One recruiter also noted that when there were only two adults in the household and gender could be determined, she was able to ask the male adult who acknowledged reaching the “Smith” residence, “is this John Smith” helped to establish her legitimacy; when gender was not clear in the name (due to unfamiliarity or gender neutral names) it was not possible to do this.
- **Birth date.** When trying to distinguish a possible false match, a birth date would have confirmed whether to go forward with flagging the case for review or proceeding to active recruitment (e.g., a Sara Smith/Sarah Smyth with the same birthday might warrant a call without review, whereas with very different birthdays may be flagged for review).
- **Enumerated by proxy.** Recruiters wished they had this information for two reasons. When initially reviewing for false match, spelling of names would be less consequential if the enumeration was by proxy. In addition, when screening movers knowing that the other household was enumerated by proxy would confirm the information the respondent provided about moving.

6.3 Recommendations for TCFU Operation

Although interviewing and recruiting for cognitive interview respondents is inherently different from the TCFU operation, we identified several parallel issues that may be useful. Our recommendations are as follows:

- The need for Census Bureau review of suspected false matches during recruitment suggests that it is necessary to train skilled clerks during the TCFU operation to conduct such a review. **Chapter 2, Section 2.3** also discussed that almost half of the completed cognitive interviews required Census Bureau data review when an exact dup match could not be ascertained. About a third of the reviewed cases were determined to have verified the dup address. Several dup matches were also sent for Census Bureau review, which uncovered GQ misclassifications. These are indications of a clerical operation for the TCFU, especially when a dup match cannot be confirmed by the automated TCFU matching.
- Retain experienced recruiters and assign cases according to recruiters’ strengths (e.g., some recruiters may be more successful reaching households where all dups are seniors).
- If possible, give recruiters more freedom in customizing their introduction when calling a household, so persuasive points can be tailored. Provide a bulleted list of points that must be mentioned, such as calling from the U.S. Census Bureau, Title 13, etc. However, specific screening questions should be scripted and carefully followed and our experience was that at times it would still be necessary to probe a response to a scripted question to ensure that respondent understood it as intended.
- If possible, recipients’ Caller IDs should show “U.S. Census Bureau” to help legitimize the call.

- Our recruitment was strictly a telephone operation, and we understand that TCFU will also be telephone only without a field component. Our recruiters noted that they left numerous voice messages where it was not possible to determine why the respondents never called back or what barriers to participation were in place. In addition, as reported in **Chapter 2, Section 2.6.1**, almost half of the telephone numbers (about 44%) were either not listed in the recruitment file or were problematic (disconnected, fax, etc.) on both sides of a case. This will likely be encountered in the TCFU operation. However, recruiting activities on this study probably encountered more problematic telephone numbers because of the length of time elapsed between the interview and when the respondent sent in their census form.
- We recommend advance letters for the TCFU operation if at all possible. We found advance letters to be a useful tool in gaining cooperation among those who received it and it also served as a neutral opening to the recruitment call. We recommend, at a minimum, sending advance letters to households that are expected to be more difficult to recruit, such as when all dups are seniors.
- Offer the TCFU in non-English languages, particularly Spanish and major Asian languages. In the least, language assistance should be provided for the initial contact to identify English-speaking household members who can locate the person with whom the recruiters need to speak.
- Provide an immediate opportunity for the respondent to acknowledge a permanent move (with probing from the recruiter/interviewer to confirm that the move was indeed permanent) and then skip the rest of the TCFU interview. Because the recruiters are also the interviewers in the actual TCFU operation, this recommendation is relevant to both recruitment and the design of the TCFU.
- Treat 1g cases (Type 1, partial HH match, all dups are children) like Type 2 cases during recruitment and interviewing to avoid potential PII violation when the adults are aware of the other address where only minors are duplicates.
- Provide comprehensive training to recruiters and interviewers:
 - Train recruiters to handle situations when reaching respondents on their cell phone. Our experience was that Type 1 cases were often cell phones, and respondents could be driving or distracted when they answer the phone.
 - When the duplicates are minor children or when the interview is being completed by a proxy, train interviewers/recruiters on providing reasonable and convincing reasons why queries about only the duplicate children are being asked and why there are no questions that pertain to the proxy.
 - Create FAQs to address common respondent concerns:
 - Why should I participate when I've already turned in my census form?
 - Why is the government asking for more information?
 - How did you get my addresses/telephone number?
 - How do you "prove" that you are who you say you are?
 - How do I know this is not some kind of scam?

7. CONCLUSIONS

7.1 Qualitative Interviews

The main aim of the qualitative study was to shed light on the processes and events within households that may result in duplications. The main sources of duplication were moving, custody situations, and second homes.²⁶

7.1.1 *Complex Ties: Presence at versus Connection to an Address*

In a number of situations, complex ties between interconnected households affected the duplications we observed. This was most evident in custody cases since not all situations where children have a presence in two households are covered by formal agreements such as divorce decrees. Especially with grandparents and aunts or uncles, the custody may be flexible, inconsistent, and part of a set of difficult relationships. (We have termed this "informal custody.") These situations may not be reported as "custody" in cues that use this term since relatives describe the child's presence in their household in other ways. In addition, parents who have not formally transferred custody may report the child's presence, regardless of the amount of time spent there. Complex family ties also affected the reporting of second homes. Such ties may reflect economic ties between related families—families that co-own property or use properties for other economic reasons, such as family-based businesses, may report members in both places regardless of the actual amount of time spent there. Convenience addresses (where a person uses an address to receive mail or for other legal purposes) also appeared generally to reflect family ties—we learned that people maintain an address with a particular relative, and may be reported there even when they are not there most of the time.

Respondents seemed to err by including family members without reference to the actual amount of time spent in the household. It is likely that they believed these reports were in some sense accurate, since they described the family unit. To improve reporting, the census form must stress the essential core concept: the actual presence of an individual, not the familial or economic tie.

Such complex situations may also affect response by effecting interpretation of survey cues. We observed that the simple cues for duplication situations did not always work to elicit these stories, and other cues than those intended were used (e.g., when a custody situation was described as a "second home"). This may reflect the complexity of the situations. Thus, we concluded that question strategies should include multiple ways of identifying situations where people might be duplicated. Simple screeners may not be effective.

²⁶ Other sources were: convenience addresses, highly mobile people, and movement between residential housing units and places where care is received.

Movers accounted for a large proportion of duplications. The duplications essentially occurred because the household was enumerated in both places. Respondents were willing to provide information about move addresses and dates, and should be provided with an opportunity to do so on the census form. (Addresses for movers were also successfully recovered in the cognitive study.)

7.1.2 Concept Matching

Census definitions and concepts may affect the ability to respond "accurately" if not clearly stated. In the qualitative data, respondents' ideas did not match census definitions in the following important ways:

1. Our respondents had a social rather than physical definition of the household: they were concerned with telling us who "belonged" in their household, based on other criteria than physical presence.
2. "Custody" referred only to agreements about custody, and was not extended to informal situations. In addition, parents with custody agreements granting them with a smaller amount of time may still regard this as "custody." This may lead to the erroneous enumeration of children where they spend a minor part of time.
3. Respondents believed that a person can live in two places, and did not see the necessity for identifying one place as the "right" place to enumerate someone. The idea that a person can only be counted in one place did not seem natural, and even when provided with this information, respondents were not sure why it was necessary.

If respondents are to report according to specific definitions, the Census Bureau has to provide them with information on the concepts required. To promote adequate probing, enumerators also need to understand the census definition well.

7.1.3 Accuracy Concerns

Our protocols were designed to elicit information without directly mentioning the particular duplication of interest to us. This indirectness may have caused some respondents to have the sense that we were checking the data they originally submitted to the census.

Respondents often indicated that they wanted to be "accurate" and showed some anxiety about a possible error on their part. We may need to provide specific assurances that we are also checking up on census procedures; thus, any error may have come from a source other than their initial report. However, stressing accuracy in any way may have negative effects, too. It might easily lead to creating a seamless story to assert the accuracy of the original report, rather than encouraging efforts to improve memory for complex situations. Respondents' concern for accuracy may in fact lessen the motivation to work on specific memory of where the person being discussed was during the reference period. A balance needs to be found between encouraging accuracy and creating anxiety about errors in reporting. Explanations provided in the interview, the recruitment script, and the general context of the interview all play a role in achieving this balance.

7.1.4 Quality of Address Information

Although respondents wanted to report accurately, in many cases they did not know the complete address of the places on which they were reporting. They offered neighborhood information, cross streets, or driving directions as a substitute. This occurred even when ex-spouses reported on the addresses where children in joint custody spent time. Although this information was adequate to verify duplication, it may not be sufficient for automation of the verification procedures.

7.1.5 Language Expressing Time Concepts

We attempted to examine the way respondents reported on the time spent at various places, and on repeated patterns of visits away from the household. Although our data are inadequate to form definite conclusions, we noted that respondents naturally used indefinite quantifiers and rate-based calculations of total time spent away. Further research on natural language for reporting of time concepts would assist in framing probes to elicit this information.

7.2 Cognitive Interviews

The purpose of the cognitive study was multifold: we wanted to get an understanding about question comprehension and exhaustiveness of the TCFU questionnaire, privacy, and confidentiality. We also wanted to gain first-hand knowledge from suspected duplicates on all possible living or other arrangements that led to duplication and potential sensitivities attached to them.

7.2.1 Success Uncovering the Dup Address

The cognitive study showed 68% success rate in uncovering the dup address, 95% of which came from the TCFU questionnaire. Although such success rate may not seem high enough, in only 17% of the cases were we unsuccessful uncovering the dup address; the remaining 15% of the cases were suspected false matches. The high rate of dup addresses revealed in the TCFU questionnaire rather than other portions of the interview suggests the level of detail in the questionnaire was adequate for the wide range of living situations we encountered.

The quality of the address and date data we obtained in most cases would be sufficient to apply the residency rules to determine where a dup should be counted. However, data quality may differ during a phone interview when the pace of the interview is very different from a face-to-face setting, and respondents may not be motivated enough to call relatives and see whether they can provide their address information or to pull out a calendar to make sure the dates they provide are correct. Thus, it is hard to predict if incorporating the dup address in a data check algorithms will be a worthwhile option for automating the TCFU instrument. At a minimum, this option can be considered for movers, where the majority of

the addresses were complete. The CATI programming can also incorporate checks on date gaps and auto fills for addresses once the interviewer starts typing an address that has already been provided during the interview.

7.2.2 Proxy versus Nonproxy Reporting

There was almost no difference in success rate between interviews conducted with proxy versus nonproxy respondents. We did not have sufficient information to examine if the quality of the obtained information was significantly different between proxies and nonproxies. Anecdotally, the dependent interviews that were conducted across both rounds demonstrated differences in reports by proxies and nonproxies. The number of complete versus partial addresses provided was very similar across proxy versus nonproxy respondents. The same was true of partial dates, but on average, nonproxy respondents provided more complete dates. Based on this study, we do not have sufficient information to speculate if data provided by proxy versus nonproxy would require more clerical effort; thus, we cannot make recommendations on the type of respondent that has to be pursued with the launch of the TCFU telephone data collection effort.

7.2.3 Question Comprehension

Both question stems and response options seemed to work well, with several exceptions. All questions asking “how often” or “when” someone stayed at a particular address produces responses that were not covered by the scripted response categories. (This is similar to the qualitative results on natural language for expressing time concepts.) Specifically, the addition of an all-inclusive category, such as “every day” or “all the time” is necessary to improve the existing response options.

Generally, the TCFU questions were understood as intended. However, sometimes, knowing the respondent’s situation, it was obvious he/she was not providing an accurate response. Moving situations yielded the most incorrect responses,²⁷ especially when there were multiple duplicates that moved together (e.g., parents and their children), or a proxy moved with the dup. The phrase “other than the places you already mentioned” used in most gate questions seemed to induce confusion as respondents often misinterpreted it while reporting on additional family members. When proxies moved with the dup, the question if the dup moved was often misinterpreted to ask if the dup moved away.

Regardless of willingness, respondents were unable to answer questions related to public places, such as hotels or hospitals. Both proxy and nonproxy respondents were often unable to provide addresses of such places and found the question on “names of the people who usually live there” inappropriate. The same was observed in the GQ cases where often

²⁷ This is probably not surprising given movers were the largest category among cases with uncovered dup addresses (32%).

revealing the dup address was based on partial information (either facility name, or some description of the neighborhood). This suggests that the current level of detail on hotels and vacation places is unnecessary, and that additional clerical work would likely be required for most GQ cases.

“Staying with someone” was a term that needed to be defined. Many respondents asked for a definition or volunteered one when answering the question. Because of the different conversational dynamic on the phone and faster pace of the interview, we do not expect respondents to be qualifying their responses as observed in this study; thus, we would recommend providing a definition of “stay.”

Targeting the TCFU questions to specific age categories seemed to work well. Only a small number of questions were found age inappropriate (e.g., asking if 70 years olds were in the military in 2010). Some of the targeted questions for GQ cases were perceived as sensitive (e.g., staying at a shelter, being in jail) based on respondent comments. This sensitivity, combined with people not knowing addresses of public facilities may explain the success rate in uncovering the dup address for the GQ cases (in 17% of the cases the dup address was not revealed; only 5 GQ cases were considered misclassified).

Providing both addresses when a telephone match existed (Type 1 cases) also proved to work well and significantly reduced respondent burden.²⁸ This will be especially valuable when there are multiple dups in the same household, and the repetitive nature of the questions can foster frustration. We observed this in our face-to-face interviews and suspect it may become a bigger problem in a telephone survey administration, where break-off rates are higher.

7.2.4 Mode of Data Collection

Because one of the primary objectives of this study was to cognitively test the TCFU questionnaire, the interviews were conducted face to face. We are not sure if we would be able to obtain the same success rate of uncovering dup addresses on the phone. We explicitly asked respondents of their willingness to provide such information on the phone and how their responses would have been different. Many participants were concerned about fraud and providing such detailed information to someone they cannot verify is legitimate. In addition, some respondents noted the length of the interview and expressed unwillingness to stay on the phone for such a long period of time. Given these concerns, we recommend using the Census Bureau name extensively in advance letters, caller IDs, and possibly survey advertisement campaigns. Capitalizing on instrument automation can help reduce burden and shorten the length of the survey if algorithms for address verification can

²⁸ When respondents were familiar with both addresses, interviewers moved to the concluding section of the interview.

be developed (assuming complete date information associated with such addresses) and interviews are terminated the moment the dup address is revealed.

7.3 Dependent Interviews

Five dependent cases were examined in the qualitative study, in which the same living situation was discussed by respondents in different households. Considerable differences emerged between the versions of the duplicate's residence pattern in the each side of the paired interviews. A notable pattern was the creation of a complete, self-consistent story about the presence of the duplicated person in the household. In these instances, the respondent always told us that the duplicate lived with them.

Such interviews indicate that different households have vastly different views of the membership of the individual (i.e., they each "claimed" the relative). The gap indicates that one or both accounts are inaccurate. The accounts are complete and self-consistent, but no external evidence allows an assessment of truth.

Similarly, the two dependent cognitive interviews provided mismatching responses, but these issues seemed to be related to proxy versus nonproxy responding, privacy concerns, and confusion about dates. The most likely explanation for the possible difference between the cognitive and qualitative interviews is the respondents' understanding of the survey context. In the qualitative interview, respondents were told, or were able to infer, that the Census Bureau was looking for a single place to "count" someone. (We told them this in the instructions for the Qualitative Protocol in Round 2, and the same information could be easily inferred in Round 1.) In contrast, the TCFU interview was longer and less conversational, and respondents may not have understood its purpose. This would not permit the creation of a self-consistent version. These results suggest that we need to balance the value of letting people know about counting everyone "in only one place" with potentially creating a tendency to "claim" a relative. However, because of the small number of dependent cases, these conclusions remain tentative. It should be noted that such "claims" in the qualitative cases and one of the cognitive cases are associated with custody cases, because recruiting for dependent cases was concentrated on custody. We have no measure of how frequent this pattern will be with general survey respondents. The question what motivates the desire for self-consistency remains—it is possible that the mode of data collection and the incentive payment were factors driving this behavior. Further research with dependent cases in other living situations would be necessary to see if a similar pattern emerges elsewhere.

7.4 Memory Issues for Respondents

Because this research was done a year to a year and a half after the census, the issue of respondent memory is important in assessing the results. In the qualitative study, we were

able to note some memory issues for respondents, who became uncertain of dates or the circumstances of the initial enumerations during the census. However, in reporting the places that household members go or assessing where they generally live, we did not notice this pattern. The stories remain essentially stable, despite repeated probing. This may be related to the creation of self-consistent accounts, since the repeated probing probably would have led to at least some inconsistency in the reports. However, the cognitive interviews did find inconsistent reports, mainly related to dates and time spent at particular addresses. We are unclear if the length of the TCFU interview, followed by cognitive probing might have contributed to such inconsistencies (i.e., respondents not paying attention), or the constant cueing actually improved memory over time.

7.5 Privacy and Sensitivity

7.5.1 Intrusiveness of the Interview

Respondents in both the qualitative and cognitive studies suggested that the subject of the interview itself was somewhat intrusive—questions about one’s living situation and presence of household members were perceived “personal.” Further research would be needed to assess the effects of this sense of intrusiveness on data quality. If the general topic of the interview is experienced as intrusive, better explanations are necessary to frame the data request. The case about why this data is necessary should be made to respondents in coverage operations. The information in the qualitative interview about census advertising shows that respondents recall messages about “counting people” and community benefit. These purposes are seen in a positive light. However, respondents do not see the connection between them and a fine-grained look at who goes where, when, and for how long. Coverage operations need to do a better job at explaining why such data are needed. On this basis, it may be suggested that the “once and only once” message needs to be incorporated into the advertising, backed up with a plea for “accuracy.”

Particular attention should be focused on minimizing privacy concerns when respondent are reporting on other dups in the households. In the cognitive interviews, on several occasions respondents called family members to ask for permission to provide the information we were requesting. This suggests participants do not feel they have the right to disclose information on other family members. Possibly a different mechanism applies when asking parents about their children’s living situations. Privacy concerns in such cases are probably related to emotional protectiveness rather than information “ownership.”

7.5.2 Sensitivity of Particular Issues

In the qualitative data, there is little open complaint or refusal to provide information, but some issues appeared difficult to discuss (e.g., foreclosure, loss of jobs, and some custody situations). This sensitivity may have been seen in late revelation of data (where something

is only revealed toward the end of the interview). It seems likely that repeated probing about the same situation is necessary to elicit the full story.

A related pattern is suppression of data—the duplication is not mentioned at all. The qualitative interviews show evidence, although some of it is circumstantial, that there was information that respondents did not reveal—relationships with unmarried partners, or certain custody situations. We inferred this information from relationship and other data in census records (such as the duplicate being listed with an unmarried partner, or a duplicated child being listed with a grandparent). Some issues appear to have been suppressed in the cognitive data as well. In some GQ cases (jail, shelters) information was not revealed, probably because it was sensitive. Different options can be explored to reduce the sensitivity of some questions, from asking open-ended questions that allow respondents to describe the sensitive situation in their own words to loading the questions with assertions that particular living situations are typical for many people.

We have to note that this study may provide a very conservative idea about the privacy and sensitivity concerns that might be raised during a telephone interview.

7.6 Recommendations and Future Research

7.6.1 Procedural Steps

The administration of the TCFU questionnaire as part of the cognitive interview allowed us to gain some insight into procedures that need to be employed during the telephone data collection.

Advance Letters and Survey Sponsor

We believe advance letters would be invaluable in supporting the legitimacy of the study. Often, participants in the cognitive interviews would remember receiving such letters in the mail; however, they would not always associate them with the Census Bureau since the envelopes that were used stated “Department of Commerce.” We believe that designing advance mailing materials that prominently display “U.S. Census Bureau” will be beneficial for the telephone study.

During the cognitive interview, we probed participants explicitly if they would be willing to take part and provide the same kind of information in a telephone interview. Many respondents expressed concerns about telephone fraud and inability to verify the legitimacy of the caller. We recommend “Census Bureau” to be displayed on caller IDs to mitigate such concerns.

Automation of the CATI Instrument

The length of the interview was frustrating for some respondents, especially when they had to reiterate the same living situation for all household members. The possibility of controlling the instrument length through automation of the address verification process needs to be explored. We believe that creating algorithms that check if any of the provided addresses match the dup address (supported with the necessary date information) can significantly reduce burden—once a match is identified, the interview is terminated. Such an approach to verification would also minimize privacy concerns, especially when it comes to reports on children. However, we acknowledge such procedures may not be possible for all living situations. For example, in many GQ cases we obtained partial address information and clerical work was required to establish a complete address that then could be verified in the dup file. On the other hand, movers tend to know their previous address and move out date fairly accurately.

The programming of the instrument will also allow for checks on date gaps or inconsistencies, which in turn can help the automation of the verification process.

Mode of Data Collection

We conducted the TCFU interviews in a face-to-face²⁹ mode. This was beneficial in not only providing respondents with assurance about the legitimacy of the interviews, but also allowing them to use various sources of information, such as checking calendars on their phones, checking with other household members, or making phone calls to gather addresses. Such additional sources will not be easily accessible in a telephone setting, if respondents are motivated enough to use them, and we do not have a way to assess the extent to which mode effects would affect data quality.

As part of the cognitive interview, we also employed EHC to cue recall even further. We did not, however, find the use of EHC worthwhile—typically, no new living arrangements relevant to the duplication process were discovered. We saw EHC use in terms of providing a visual aid of the reference period of interest; some participants were peeking into the EHC to come up with dates, or commented they wished they had a calendar in front of them when answering date questions. We believe that mailing a calendar that respondents would not be likely to throw away along with the advance letter will be beneficial to data quality and possibly recruiting efforts.

²⁹ Before the beginning of the TCFU portion of the interview, we instructed respondents to pretend we were calling them on the phone; however, we do not believe this let us make inferences about telephone interviews.

7.6.2 Census Forms

A major category of duplication seen in Round 1³⁰ was movers. Moving data are easily retrieved in our qualitative and cognitive interviews. Since these data are readily available from respondents, it appears that these duplications are preventable. Movers should be provided with a way of indicating on the census form the new address and the date the move took place and specific instructions for what to check when they return the form for the other address. Several respondents volunteered that they wrote their new addresses on their census forms, but the current procedures do not allow for such information to be captured.

Similarly, the enumerator's form needs to be revised to include specific reporting about moves, with places to collect addresses, dates, and whole/part household information. Enumerators should be trained how to collect information about moves, whether or not the household is re-enumerated.

In the qualitative interview, we also saw some difficulty with the wording of the overcount coverage question. We found that the expression "for child custody" was not interpreted as intended. Further work is needed on ways to express the presence of a child, which does not imply that there is a formal custody agreement. The term "joint custody" probably would not work, especially for the informal custody situations; the term "physical custody" may be useful to indicate that what we are looking for is where the child is actually located.

Another comprehension issue we discovered was related to the term "seasonal or second residence." We found that the "seasonal" association seemed to swamp the idea of "second residence" for any purpose. Providing relevant examples, "such as a vacation home or a residence maintained to be closer to work," may ensure that items on the census form are interpreted as intended.

Finally, work is needed to provide explanations on the census form related to concepts such as "household," counting someone "once and only in one place," and ways to convey the idea about data accuracy.

7.6.3 Future Research

Our endeavors to answer the research questions posed at the beginning of this report opened another avenue for research. We believe the following areas need well-designed studies in the future:

- Examine data quality in proxy versus nonproxy interviews. We looked at the number of complete versus partial addresses and saw no difference in the quality of the information provided. However, data accuracy should be systematically evaluated, as

³⁰ In Round 2, we made an effort to screen out movers in order to be able to assess other living situations.

well as the difference in clerical time to uncover the dup address in the two conditions.

- Pretest the TCFU on the phone. Further research is necessary to evaluate how privacy issues will play out in a real-time data collection and what will be the impact of telephone mode on data quality (partial versus complete address and date data).
- Examine ways to stress that we are interested in the physical presence of people in the household, rather than social ties. This could include the residence rules, coverage questions, and other ways to include the message in advertising, online information, and other media.
- Research ways to lessen the reaction to the "intrusiveness" of the questions. This may involve giving better information and explanation about the "once and only in one place" concept.
- Research ways to allow movers to report the addresses and dates of moves on the census form. Such data would easily be provided by movers, if they had the opportunity. There should be a way to provide these data in Internet versions of the questionnaire, at least, and there should some way to flag it on the MOMB form. Such change should be introduced to the enumerator form.
- Test ways to express custody concepts in the overcount coverage question. Further research into custody cases may add more understanding of how respondents see the living arrangements of children. This research should include informal and formal custody and custodial relatives other than parents. Research should focus on the interrelationship between custody expectations (both informal and court defined) and perceptions of where the child "lives." Critical to this research is interviewing both sides of the arrangement.
- Continue research on dependent cases. This may help explain possible patterns of suppressing data and "claiming" the duplicate in both (paired) households. It would be useful to expand this research over a wide range of causes of duplication.
- Investigate the role of shared family properties and co-owned properties to further research into duplications caused by second homes.
- Examine ways in which respondents naturally express time concepts. To achieve a full resolution of duplications, a clear picture of the time spent by the duplicate in both households must be elicited. Our research into respondents' accounts of time spent indicate respondent often rely on vague quantifiers and on rate-based reporting. Additional research would be helpful in creating effective strategies for probing and disambiguating true census residence.

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GLOSSARY FOR COMMONLY USED DUPLICATE TERMS

- **CATI** (Computer-assisted telephone interviewing): CATI is a data collection technique using the telephone. The interviewer follows scripted prompts provided by the computer and enters the data directly into the computer.
- **Convenience address**: An address used for mail delivery, school registration, and legal documents, such as licenses, rather than for habitation.
- **CFU** (Coverage follow-up) and **TCFU** (Targeted coverage follow-up): CFU refers to the follow-up interview that the Census Bureau conducts with a household that has been identified as possibly having a coverage problem in the census. The CFU interview is not specific to the type of coverage situation, but asks if any person in the household stayed at another place. TCFU refers to the new interview that is being tested on this study.
- **Dependent interview**: A dependent interview is conducted about the second address (the other side of the match) after an independent interview has been completed with the first address of the match. In dependent interviews, confidentiality is protected similarly to how it is in independent interviews. Respondents did not find out that they were selected because they were duplicated in the census, and the same interviewer did not do both halves of the same match and also did not know the address of the other half.
- **Dup**: A computer-identified suspected duplicate person.
- **Dup address**: Refers to the other address where the respondent was duplicated (not the side currently being interviewed).
- **False match**: The interview and review of data indicate that the two matched people are likely different people.
- **HU address mix-up**: People are listed at the wrong address because of mail delivered to the wrong address or interviewer error in matching the form to the correct address to conduct the interview. For example, one of the currently identified “false matches” in the cognitive interviews appears to be an address mix-up. The same people were listed at two addresses; however, they had no connection with the other address. They were listed by mistake on that form either by mail misdelivery or by interviewer using the incorrect form to enumerate them.
- **GQ** (Group Quarters): Group Quarters are places where people live or stay in a group living arrangement that is usually owned or managed by an entity or organization providing housing and/or services for the residents. Group quarters include such places as college residence halls, residential treatment centers, skilled-nursing facilities, group homes, military barracks, correctional facilities, and workers’ dormitories. GQs recruited for this study included military, college, jail, group home, nursing home, juvenile GQ, homeless GQ, workers GQ, or religious GQ. The census residence rule states that most individuals who were staying in GQs on April 1 should be counted at that location, instead of a housing unit they might usually consider to be their home.
- **High mobility**: A person who lives or stays at several different places and a permanent residence is not perfectly clear.

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- **HU (Housing Unit):** A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.
 - **Laundry list:** Questions from the TCFU that list several activities at the same time.
 - **Mail:** The form was completed and mailed back. Also known as MOMB (Mail Out/Mail Back).
 - **Movers:** People who changed addresses during the census enumeration period. The dates that were reported for these cases range from March to October 2010, and therefore fall within the period encompassing mail and NRFU operations.
 - **Not revealed dup:** The respondent did not confirm or mention the other address we had listed in the recruitment file. We do not have enough information to know whether they actually were connected to that address or if it was a false match.
 - **NRFU (Nonresponse Follow-up):** This interview is conducted when a mail return is not received for the unit. It is also known as an enumerator form and can be completed in person or by telephone.
 - **Partial HH match:** Some people (but not all of them) in one housing unit match to some (possibly all) in another housing unit. Single person households can be in this group if they match to a household with more than one person.
 - **Side A/Side B:** Refers directly to the recruitment file and which of the matched households was recruited and interviewed. Side A and Side B do not necessarily imply anything about the household—assignment to side is arbitrary.
 - **Snowbirds:** Snowbird residences are distinct from other types of second homes in that they offer the opportunity for a regular migratory pattern of use with significant duration and climatic variation. Homes can be owned, rented, or mobile.
 - **Telephone:** If the recruitment file indicates telephone, it refers to an inbound telephone operation called TQA (Telephone Questionnaire Assistance). In some instances, data could be gathered if the person calls for assistance and wants to complete the interview over the phone.
 - **Transitioning seniors:** Transitioning seniors are defined as adults 50-80 years old who may be duplicated because of age-related reasons such as a move related to downsizing or into an assisted living facility. Also included are seniors who may have multiple residences to take advantage of temperate climates (snowbirds) or who live with or move between their adult children's homes.
 - **Type 1 case – HU to HU phone match:** Two housing units have people who match and a phone number that is the same.
 - **Type 2 case – HU to HU nonphone match:** Two housing units have people who match, but the phone number is different between units.

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- **Type 3 case** – HU to GQ match: A person in a housing unit matches to a person in a GQ.
 - **Verified dup**: The respondent confirmed or mentioned the other address we had listed in the recruitment file.
 - **Whole HH match**: All people in one housing unit match to all people in another housing unit. Single person households can fall in this category if the same single person appears alone in both households.

APPENDIX