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Cognitive Testing of the Census 2010
Experimental Overcount Questions for the
Census 2010 Alternative Questionnaire Experiment:
Final Project Report

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This report documents the development and cognitive testing in 2008-9 of an alternative mailout census booklet with special coverage questions to compare to the standard census form in terms of coverage in the Census 2010 Alternative Questionnaire Experiment split-panel test. Both forms include a question asking whether each person in the household sometimes lives or stays somewhere else, and for what reason. On the standard census form, this question functions as a flag for later phone followup to get more complete coverage data. The alternative mailout booklet converts this question into a screener for a new set of questions on the mailout form itself to identify a person's alternative address, usual residence, and Census Day location, making it possible to determine residence from answers on the census form itself during processing with reduced need for telephone followup. If it works, the alternative approach has the potential to improve coverage as well as cut the costs and time involved in conducting followup operations. The report describes the objectives and methods of the testing and presents findings in three main sections: cognitive testing results, alternative wording for the Census Day location question, and how answers to the screener question affect answers to the experimental address, usual residence, and Census Day location questions. The testing indicated that the questionnaire works well and should go forward into the split-panel test. Recommendations are made for making the skip instructions more noticeable, for rewording some questions, and for emphasizing key words in address question 8 and coverage question 10. Final changes to key questions in the questionnaire are shown in the appendix.

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Cognitive Testing of the Census 2010 Experimental Overcount Questions for the Census 2010 Alternative Questionnaire Experiment: Final Project Report

INTRODUCTION

This is the final report on development, cognitive testing, and revision of the experimental 2010 CPEX Overcount booklet with a new sequence of overcount questions conducted in 2008-2009. This booklet is intended for use in the Census 2010 split-panel Alternative Questionnaire Experiment "Avoid Followup Evaluation." The objective of the experimental overcount question sequence is to collect the critical information needed to make it possible to determine, from the answers on the census form itself during processing, where each person should be counted. If it works, this experimental booklet has the potential to improve the accuracy of where persons are counted as well as cut the costs and time involved in conducting telephone followup operations several months later.

Like the standard Census 2010 census form, this experimental questionnaire includes an individual-level question to determine whether each rostered person "sometimes lives or stays somewhere else." The question also includes a list of response categories to designate the type of place or living situation at that other place, such as "in college housing," or "for child custody." Respondents who answer yes are asked to mark all the categories that apply. On the standard census form, this question is used as a flag for possible future telephone followup. On the experimental form, this question is used as a screener for several new questions.

This CPEX Overcount booklet goes beyond the standard Census 2010 census form overcount question. It also collects an alternative address for persons who sometimes live or stay somewhere else, as well as information on their usual residence and where they stayed on Census Day. These new questions make it possible to determine where to count persons from answers on the questionnaire itself during processing.

This project was sponsored by the Decennial Statistical Studies Division (DSSD) and conducted in conjunction with the Overcount Working Group. This working group was led by Sarah Heimel and Geoff Jackson and included Elizabeth (Krejsa) Poehler, Kelly Govern, Leah Marshall, Martine Kostanich, Renee Reeves, Ryan King, and Timothy Stewart from DSSD. Laurie Schwede, Anissa Sorokin, and Virginia Wake Yelei from the Statistical Research Division (SRD) conducted the cognitive testing.

BACKGROUND

Census 2000 was the first census in which a viable nationwide search/match operation was used to identify duplication of persons. The results of the search/match and the A.C.E. (Accuracy and Coverage Evaluation) survey found an unexpectedly high duplication rate: an estimated 5.8 million duplicated persons (Mule 2002). The estimated overcounts and undercounts were revised (Fenstermaker and Haines 2002). One of the factors in the underestimation of duplications was that the A.C.E. questionnaire was not fully effective in accurately identifying respondents' true residences.

In the years after Census 2000 leading to 2010, the focus of the Census 2010 Research and Development Programs on Residence Rules and Coverage Improvement expanded from the prior emphasis on preventing undercounts (omissions) to include identification, resolution and reduction of overcounts (erroneous enumerations and other duplications) as well. The Census Bureau Working Groups on Residence Rules and on Coverage Improvement developed methods for several data collection operations to identify and reduce duplications that can lead to census overcounts.

The groups decided to develop and test new undercount and overcount questions on the census form itself and to identify the types of persons and households at risk of erroneous enumerations. Iterative cognitive testing, a split-panel mailout test of alternative residence rule and coverage questions in 2005 (Heimel 2007), site tests in 2004 and 2006 (Krejsa, Linse, Karl and Van Vleck 2005; Krejsa, Linse, Kostanich, Heimel, Marshall, Banz, and King 2007) and the 2008 Dress Rehearsal (Govern, Kostanich and Heimel 2009) led to the final Census 2010 standard short form questionnaire with overcount and undercount questions.

In addition, the National Academy of Sciences Residence Rule Panel evaluated the proposed revisions to the residence rules and coverage questions (NRC 2006). They recommended developing and testing new questions to collect a person's alternative address and enough residence rule information to determine where the person should be counted in the census from the pattern of answers on the census form itself.

The Census Bureau followed this recommendation by developing an experimental Census 2010 overcount questionnaire booklet for use in the split-panel Alternative Questionnaire Experiment embedded within Census 2010. The experimental booklet is designed to identify persons with more than one address, collect that address, and use answers to residence rule questions on the form itself to determine where that person should be counted. Such a questionnaire has the potential to improve the quality and accuracy of data on where people should be counted, because the information is collected right at the time of census completion when the information is fresh, rather than some months later during a phone followup when recall decay may have clouded the respondent's memory.

This report presents results of cognitive testing of this experimental Census 2010 overcount questionnaire with respondents in household types prone to duplication. During the debriefing, we also elicited descriptions of living situations of household persons to serve as "truth" in assessing the accuracy of the respondents' answers to the screener and follow-up questions for determining where each person should be counted. A separate paper examines in more depth the extent to which the answers respondents marked to the experimental questions accurately reflected where persons with more than one address should be counted (Schwede, Sorokin and Wake 2009). We are currently planning a 2010 Census Evaluation that will also examine the extent to which the answers respondents give to the overcount question accurately reflect where persons should be counted. This "Comparative Ethnographic Studies of Enumeration Methods and Coverage" will be conducted by means of observations of live census interviews and immediate debriefings of respondents to identify types and sources of coverage error in nine race/ethnic communities during Census operations in 2010 (Schwede 2010).

EXPERIMENTAL OVERCOUNT BOOKLET

The experimental 2010 Census overcount booklet [D-1(X13)] includes the same set of basic questions, with the same wording, as the standard Census 2010 questionnaire, with three notable differences: a slightly modified overcount question, the new question set, and formatting changes.

The first difference is in the formatting and purpose of the overcount questions on the two forms. Both the standard and the experimental Census 2010 questionnaire include the overcount question with yes and no check boxes, "Does this person sometimes live or stay somewhere else?" The overcount question also includes a series of checkoff response categories to indicate the type of living situation or place of that other location, such as "in college housing" or "for child custody." On the standard census form, this is the full overcount question—these answers are used as a flag for later phone followup several months later. There is no skip instruction for this question on the standard form.

In contrast, on the experimental booklet tested here, the same overcount question (with the addition of a new response category "for a job or business") is used as a screener to several additional experimental questions, as shown in Figure 1 in the Appendix, Question 7. If the answer is yes, the respondent is asked to answer several additional questions. In Question 8 the respondent is asked to write in the alternative address either in standardized address boxes or in a special write-in section if the place has no standard address or if it is a facility. In Question 9, the respondent is asked to check off the person's usual residence at one of the following locations: 1) the address printed on the

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¹ The experimental questions are numbered differently on the person pages for Persons 2 and above, as compared to Person 1. For Persons 2 and above, the overcount screener, the address question, the usual residence question, and the Census Day location question are numbered 7 through 10 respectively. For Person 1, the same questions are numbered 10 through 13. For the purposes of brevity and clarity, from this point forward in the text, we will use just the numbers 7 through 10 to refer to these questions.

back of the census form (i.e., the mailing address to which the questionnaire had been sent), 2) the address or location that the respondent had just filled in on the lines for Question 8, 3) both places equally or 4) some other place. In Question 10, the respondent is asked to designate the place where the person stayed on Census Day (December 1, 2008, in this cognitive test), using three of the four response categories as in Question 9 (omitting both places equally, as this is for a one-day location). These latter two questions to ascertain, respectively, *de jure* (usual) residence and *de facto* (Census Day location) residence are intended to permit the determination of where the person should be counted in the census from data on the census form itself during processing. If the answer to the "sometimes lives or stays somewhere else" question is no, the respondent is instructed to skip over these questions.

The second difference between the experimental and standard census form is in the length of the "person page," the area in which the core census questions--name, age, birthdate, sex, Hispanic origin, race, and the overcount question--are asked for each person. On the standard form, the "person page" is confined to one column, so that data for two persons are collected on one physical page of the form. On the standard form, there are six "person pages" in the form to record full information for up to six rostered persons in the household (there is also space to record attenuated data for up to four additional persons).

The addition of the new overcount questions necessitated the use of two columns for each person on the experimental form, so that one full page of the questionnaire is needed for each rostered person. In the experimental booklet, there is space to record full information on nine persons and attenuated data (name, sex, age, date of birth, and relation to householder as a yes/no variable) on an additional five persons.

This lengthening of the questions necessitated moving away from the one large folded piece of paper with 6 "pages" characterizing the standard Census 2010 form to a booklet with 12 pages stapled in the middle. It also necessitated formatting the first question on the form—the household population count with residence rule instructions—in text stretching across the page, rather than being double-banked as it is on the standard form.

METHODOLOGY

For our cognitive testing, we aimed to target and recruit respondents who were likely to be in living situations or households found in past research to be at risk of miscounting. These included persons having more than one residence, such as college students, military personnel, persons tenuously attached to households, or recent movers, as well as minorities in general (Mule 2002). These also included large households and complex households with persons other than, or in addition to, nuclear family relatives, especially those including nonrelatives and distant kin, which have been identified as at risk of miscounting in the past two censuses (e.g., de la Puente 1993, Ellis 1994, Schwede 2003,

and Schwede, Blumberg and Chan 2006) and in the 2006 Census Test on the Cheyenne River Sioux Reservation (Schwede 2008).

We conducted 18 cognitive interviews in December 2008 and January 2009 in the Washington DC metropolitan area in our cognitive testing lab and in places more convenient to respondents. One of these respondents did not seem to understand the task and made numerous idiosyncratic mistakes, so we removed her case and did our analysis with the remaining 17 respondents. We paid respondents a small honorarium.

Our small, non-random sample was diverse, with eleven women and six men who ranged in age from 21 to 70, with an average age of 36. Nine were white, five African American, and three Asian, with two of these also identifying as Hispanic. Ten respondents were in rentals and seven were living in owned units. Household size ranged from one to eight persons, distributed as follows: one person in the household (1 respondent), two persons (2), three persons (8), four persons (1), five persons (3), six persons (1) and eight persons (1).

Our respondents were also diversified in household types, as we had intended. Ten of our eighteen respondents were in a variety of family household types. Four respondents were in family households with just "own children." One more household had "own children" as well as a distant relative. Three were in family households with relatives other than children, and two of these had distant relatives (nephews). One last family household included nonrelatives.

The last eight respondents were in nonrelative households. One of these was in a single person household. The remaining seven were in households of two or more nonrelatives, and are classified as complex households.

In our cognitive interviews, we asked respondents to complete the experimental questionnaire as they would if they were alone at home, while we listened, observed and audiotaped the interviews without asking scripted probes. When the respondent had completed the task, we asked a series of retrospective probes and also inquired about any questions that had seemed problematic.

We then asked respondents to describe the living situations of each person in the household to enable us to identify any other places each person may have stayed and to decide where each should be counted, according to the census residence rule and residence situations (Lamas 2009). The census residence rule basically states that persons are to be counted at their usual (*de jure*) residence—where they live and sleep most of the time—but if they have no usual place or are staying in certain types of group quarters on Census Day, they are counted in the (*de facto*) place where they are staying on Census Day. We later compared where we thought each person should be counted according to these rules with the answers to the overcount sequence on the form to see whether the respondents' answers correctly classified each person as to whether they should be counted in the respondent's household or somewhere else. The in-depth results from that analysis are in our paper, "You Really Have to Puzzle This Out: Checking Residence

and Coverage Duplications on a Census 2010 Questionnaire (Schwede, Sorokin and Wake 2009).

FINDINGS PART 1: COGNITIVE TESTING RESULTS

ive or stay somewhere else?
more people live here
☐ At a seasonal or second residence
□ In jail or prison
□ In a nursing home
□ For another reason

Question 7 has three components. The first is the yes/no choice. The second is the skip pattern instruction: whether respondent noted and followed the skip for those persons with an answer of "no" to this question. The third component is whether a second response code is marked in the 8 response code boxes below the no/yes boxes. We consider these components one at a time.

How did respondents answer the yes/no part of this question?

We found that 11 of our 17 respondents marked "no" to sometimes live or stay somewhere else for all persons in the household. Of the six other respondents, one marked "yes" for all persons and the remaining five marked a mix of "yes" and "no" answers. Two of these latter five left yes/no boxes blank for one or more persons, which we interpreted as an indirect yes. One of these marked "for another reason" in the second set of response categories for one person. The other one left the Question 7 yes/no boxes blank for all five persons in the household, but marked "seasonal/second residence" which we also construed as an indirect "yes" for each of them.

Seventeen respondents rostered 62 persons in their households. The 11 respondents who marked "no" for all household persons identified 34 persons who did not live or stay somewhere else. The one respondent who marked "yes" for all persons rostered 5 persons who sometimes live or stay somewhere else. Finally, the five respondents who marked a mix of answers rostered 11 persons with a "yes" for sometimes lives or stays somewhere else and listed 12 persons with a "no" to this question. Hence, six of our seventeen respondents who marked yes for one or more persons in the household identified a total of 16 persons who sometimes live or stay somewhere else. Sixteen respondents identified a total of 46 persons whom they reported did not sometimes live or stay somewhere else.

Did the skip instruction following the "no" answer work?

Sixteen of our seventeen respondents gave a "no" answer to "sometimes live or stay somewhere else" for at least one person in their households. If they completed the form correctly, they should have followed the skip out of the experimental sequence for every household person with a "no" answer. Seven of these followed the skip instruction correctly for all of the persons in their households with a "no" answer to this question.

The skip instruction on the questionnaire version we tested did not work well. The majority in our overall purposive sample—9 of 17 respondents—missed the skip for at least one person. Two of these 9 missed the skip for the first "no" person and thus unnecessarily answered questions 8 through 10, but then saw it and followed it for other "no" persons in the household. The remaining seven respondents missed the skip for every "no" person in the household and filled out answers to the remaining experimental questions when they did not need to do so. Expressed in percentages, respondents missed the skip for 46 percent of all of the persons in households they reported as not having another place where they sometimes live or stay. Clearly, the skip instruction is not working and needs revision.

Recommendation: The skip instruction is not working; the majority of respondents either did not read it or read it but did not follow it (some said in the followup debriefing that they said they did not believe they were being given permission to leave questions blank on the form). Reformatting to make this skip more prominent is recommended. If possible, add a blank line above and below the no/yes boxes to set off the skip instruction from the question stem and the additional response boxes below. We suggest increasing the font size and perhaps printing the arrow and skip instruction in a bright color to increase visibility. We also suggest adding a parenthetical statement before Q8 to reinforce the Q7 skip instruction along the lines of: "(If you marked yes in Question 7):..."

Did respondents marking yes also answer a "reason" category? Which ones?

Earlier we noted that six respondents marked yes and/or a reason or both for a total of 16 persons who sometimes live somewhere else. All six respondents did mark a reason category for all of these 16 persons in their households. Six persons were listed simply as having seasonal or second residences (five from one respondent for herself and the other students she lives with who go home during holidays and summer vacations.) Four were marked solely as "for another reason" (different respondents). Three persons were indicated as staying somewhere else for a job or business (all from one respondent). One person was reported as being in college housing and one was in the military. Finally, the last of the 16 persons had two reasons—a seasonal/second residence, and "another reason."

All of the 17 respondents we are discussing here understood this as asking if persons in their household sometimes live or stay somewhere else (the one we excluded earlier gave an irrelevant answer). Seven gave definitions that basically repeated the key verbs in the question, "live" or "stay," that were close enough to the meaning of the question (for more on meanings of "live" and "stay" to respondents in previous research, see Gerber 1994 and Schwede 2006). Three defined the purpose of the question as an effort to determine a person's "permanent address," "permanent residence," "primary residence," "home address," or "official address." Seven others defined this in terms of patterns of movement, such as splitting one's time proportionally between two or more places, going back and forth repeatedly between two places, and stays elsewhere of a certain minimum time period, such as "at least two weeks."

Two respondents also commented on how broad this question is. One stated,

"The question about "sometimes live or stay someplace else is very broad—it can include a stay in hotel one night or live in a house for 4-5 years. Some categories here are locations, while others are for something else [living situations]. This doesn't make sense...It doesn't compute in my mind."

Another respondent echoed similar sentences, explaining her thought process as she tried to determine whether or not a person she was reporting on ever lived or stayed somewhere else:

"There's another one! Ahhh,...oooh,....hmmm. He goes away for like 6 weeks in the summer time for camp. Seasonal or second residence...mmmmm. Let's see, it's seasonal, but I wouldn't call it a second residence. It can be 4-6 weeks that he's gone in the summer time. Hmmm, college really is 9 months a year.....Oh God. The thing is, you really have to puzzle this out. If you guys are trying to make sure you get a count, an accurate one, you want to know if this person might happen to be somewhere else at the time they are doing the count. Unless you are doing a count, I don't know if you count all year long, I don't know. If you are doing a count in the summer time, you might catch him somewhere else. Otherwise you'd catch him here. So I would still say, no, even though that is a prolonged period of time, that still is no. Oh Golly wow! I'd still say no. Whew! I get to skip, and I think I'm done!

Discussion: This question was developed in the early years of the 2000 to 2008 developmental research period. Most of the changes to this question over that time period were made to tweak the wording of the response categories and/or to reduce the number of categories. The test showed substantial numbers of false positives and false negatives, perhaps due to the very general nature of this question.

Shortly after we presented these results in an oral presentation to the team, the wording of this question was finalized for 2010. It would be useful in the new 2010 to 2020 R & D cycle to consider whether asking a more targeted overcount question might be a more efficient and accurate means of identifying potential overcount situations.

Debriefing Probe: In this question, what does the word "sometimes" mean to you?

Respondents identified several dimensions associated with "sometimes." For instance, some respondents indicated that "sometimes" meant a repeating pattern. Respondents' answers include:

- Every now and then, maybe a couple of times a month
- Every other night, or quarterly
- Traveling back and forth
- Off and on, not every day
- A place that they go frequently and stay for awhile, I guess? I guess like if you're taking care of a parent or something and you stay with them every weekend, something like that
- Regularly;
- Any time, during any amount of frequency.

Other respondents indicated that "sometimes" referred to some minimum proportion of time, for example:

- Part time or maybe half the time, or any of those.
- Sometimes means uh...it's more often, I would say, ¾ at my place, ¼ somewhere else
- Something less than full time---part time I guess
- Occasionally, but not the majority of time

Other respondents were of the opinion that "sometimes" implies a minimum continuous duration of time:

- I'd say non-vacation, more than 2 weeks
- I guess it would bemore than a week. It's like two weeks or two or three months to qualify to be "sometimes." It's like you're not there unless you stay a significant amount of time there.

Other respondents combined ideas already presented:

That's what the question was! Weeklong business trip or one-week a month business trip, or seasonal residence for a month. I answered no, because it's more like a vacation for my son or a really short business trip, not "<u>living</u>." Of course, they are living while they are away, but it's not a domicile.

And finally two others said they were unsure or didn't know what it meant.

Thus respondents are interpreting the word "sometimes" across a variety of dimensions, such as a repeating pattern, some minimum proportion of time (such as a half or quarter of the time), or some minimum duration (more than a week, or two weeks). "Sometimes" is thus a vague quantifier, subject to varying interpretations by respondents that may lead to divergent answers. Followup to questions with vague quantifiers such as this may reveal relatively high rates of possible false positives and negatives to flag and screener questions. In general, survey methodologists try to develop specific time indicators and avoid vague quantifiers.

Suggestion: We suggest that this question and wording be re-examined with a fresh eye toward developing a new more targeted overcount question in the new 2020 Census R & D program.

In paraphrasing, does the respondent mention a time period?

In answering what Question 7 meant in their own words, just one respondent included some reference to a time period. She initially interpreted this question to be asking if the person had *ever* lived or stayed somewhere else. But while completing her form, she did not apply that interpretation of "*ever* lived or stayed" to her mother, who had been living in South America until 8 months before the cognitive interview date, then moved here to live in the house with her children and her divorced husband. This mother occasionally goes back to South America for visits, so we would have expected the respondent to mark yes to the question, but she did not. She marked no for her mother.

Debriefing Probe: When you answered this question, were you thinking about a specific time period or just generally?

• Fourteen of 17 respondents answering this question said they were thinking just generally, and not about a specific time period. Of the two thinking about a specific time period, one mentioned December 1, and the other mentioned the school year (which is actually a general time period). The last person was mostly thinking generally, but took into account that her husband and son were currently at home and their stays elsewhere had been in the past, so she marked no to this question.

How did respondents interpret key "reason" response categories?

In college housing

- 10 mentioned a dorm and nothing else
- 2 did not mention a dorm, but specified it must mean on-campus housing
- 3 mentioned both on- and off-campus housing

Question: Is the intention to limit college housing to just on-campus housing mostly in dorms, or is it to try to get respondents to mark yes for both on- and off-campus housing?

If both, we recommend specifying on the form "in college housing on- or offcampus" to standardize responses; our majority is associating "college housing" with dorms alone.

Seasonal or second residence

- Nine respondents did not directly define "seasonal" residence. They just defined "seasonal" as a place to go during seasons of the year. Respondents often laugh when they read this, because such a place is way beyond their reach. Having "seasonal" before "second residence" might thus be skewing answers primarily toward seasonal and distracting respondents from thinking about alternate residences they may have. If the order is reversed to "second or seasonal residence," perhaps some respondents would have given more thought to whether they had alternative addresses.
- Six respondents who defined both said "second home" was a place other than one's primary residence, such as a relative's house where one goes to visit or a place to go for work.
- Two were not asked this question.

Recommendation: Consider reversing the order of "seasonal" and "second" residence, as in "Second or seasonal residence." A sizeable number of respondents are just focusing on the seasonal residence, which may not be that common and may be too restrictive.

Child custody

• Eight respondents indicated that they associated "child custody" with some sort of legal arrangement, either through divorce or through giving up a child to someone else

- Five respondents did not mention any legal reason: e.g., someone watching over a child; residing with a child overnight; applies to those under 18; have generic custody over children...
- Three said they didn't know what this means
- One was not asked

Comment: "Child custody" does not necessarily imply a legal arrangement associated with divorce; seven respondents did not associate this term with legal custody arrangements associated with divorce. It is probably better to leave this open-ended as is, as grandparents or other relatives can have custody over children.

We asked respondents to tell us in their own words what two alternative phrases connected with living or staying somewhere else to work.

1. "For a job or business"

Respondents had the following interpretations of this phrase:

- Several mentioned working in one place during the week and going home on weekends
- Long-term travel (two weeks or more) staying in longer-term residence, or going out on long fishing trips, or going away to cut Christmas trees
- On-the-road jobs: trucker, regional salesperson
- Going every weekend sequentially to a place for work over three months
- Job paying you to be somewhere and providing housing: e.g., the military
- Relocation for work
- Travel to find available work
- Travel to conventions and/or conferences
- Several others just defined what a job or business is generally

2. "To be closer to work"

• Most respondents gave as an example someone who stays with a friend or has a second place closer to work so that he/she can be close to work during the week and then stay home on the weekend. Others mentioned someone moving closer to work to reduce the commute.

Which of the two options is better for us to use in the overcount question? Respondents interpreted "for a job or business" to include a much wider range of work situations than "to be closer to work." That would seem to be the better alternative.

Recommendation: Use "for a job or business" instead of "closer to work" as a response category in the overcount question.

[&]quot;For another reason"

This general response category was included to enable respondents to answer yes to this question for situations that were not explicitly covered in the prior categories. One situation that falls into this generic category—sometimes living or staying at a boyfriend's/girlfriend's residence while maintaining one's own residence—was of special interest to the team. We were asked to include two respondents in our cognitive testing who lived with roommates, one or more of whom were known to be moving back and forth between their own homes and a boyfriend's/girlfriend's home, in order to see how the respondents answered Question 7. We were not told which of the roommates were moving back and forth for this reason.

In our testing, we asked respondents what they might include in the "for another reason" category. Their answers included:

- For a relationship going to stay sometimes at a boyfriend/girlfriend's house
- Go to stay at a parent's home when they are ill, but not in a nursing home (author's note: for caregiving to elderly, disabled, or ill)
- Grandparent who travels seasonally (author's note: such as snowbirds)
- Family emergency
- Visiting relatives
- For a vacation (author's note: several respondents mentioned vacations when trying to think through what Question 7 was asking for)
- A timeshare

This large range of reasons suggests it is useful to retain this catchall category.

As shown above, we did have some respondents who mentioned mobility due to moving back and forth between their own home and that of a boyfriend/girlfriend. In neither of the two cases deliberately included in this study because of known boyfriend/girlfriend mobility patterns did the respondent mark yes for anyone in the household. In one of these, the respondent did identify this type of situation as an example of the "for another reason" category. This opened the door to ask the respondent whether this was the case in this household. She said yes, and she had thought about marking yes to Question 7 for this person, but then decided not to do it. The respondent said that one roommate started a new relationship like this a few weeks ago, but it is too early to know if this will last, and the roommate is only gone one or two nights a week. She did not identify who this roommate was.

The other respondent selected because of having a roommate who visited a boyfriend never mentioned this relationship and marked no for everyone. We did not bring up this issue during the interview because it is a sensitive topic and the respondent might feel the referring person was giving us prior information about sensitive areas of her or her roommates' living situations.

A boyfriend/girlfriend relationship came up unexpectedly in another household where the respondent said during the debriefing on living situations that he went to stay with his girlfriend on the weekends, but he had marked "No" to Question 7. A fourth respondent

happened to mention at the end of his interview that he has a girlfriend come to stay with him occasionally, but it's only a couple of nights a month and he told us we had to keep this secret.

Thus although the boyfriend/girlfriend situation was identified by three of our respondents, this occurred after the interview was over and we were doing the debriefing. None of these respondents marked yes to question 7 for the relevant persons.

Question: Although it is now very common for unmarried people to stay overnight or longer, or live with significant others and much of the past stigma for this situation has dissolved, our data here suggest this is still a sensitive topic that may seem very intrusive to respondents. In the 2020 Census research and development cycle, do we want to try to draft a response category for this or just let this situation fall under "for other reasons" or not get picked up?

Suggestion on second category suggested by a respondent: We might think of adding a category along the lines of "to give in-home care to an elderly or disabled adult." As the baby boomer generation ages, this living situation will become more prevalent. However, space is limited on the questionnaire. This category may not pick up enough responses to justify the extra space it would take up on the form.

Did the overcount question identify anyone who was included in the household population count (Question 1) who should not have been included? The population count question asks "How many people were living or staying in this house, apartment or mobile home on April 1?" A list of bullets included above this question includes the instruction that college students living away are not to be included in the count.

One respondent who did not read the Question 1 residence instructions included her college student living away at school in her Question 1 household count and on a person page. The respondent did mark "yes" to Question 7 "in college housing" so this erroneous enumeration was identified by the overcount question, as we had intended.

Any indication respondents considered adding a new person to Question 1 or to a person page due to this question?

• Question 7 prompted one respondent to think again about her renter who stays with her five nights a week for work but goes to live with her husband elsewhere on weekends. She had not included this person in the Question 1 population count, but did mark two categories in the Question 2 omission question for this person. Later, during the debriefing, she did change her mind to include this woman in her household count in Question 1, changing that number from 2 to 3 to include this person.

(According to the residence rule, this renter should be in her household population count).

 NOTE that if the respondent had not mentioned this renter in Question 2 and had excluded her from the Question 1 population count, we would have had an invisible omission in this household that would not have been identified unless we included in the CFU sample some cases in which the respondent marked no to the omission question.

Question 8: Full address of the other place where this person sometimes lives or stays

Respondents who marked "yes" to Question 7 indicating that the person sometimes lived or stayed somewhere else should have continued down the column and answered questions 8, 9 and 10. Those who answered "no" to the question were supposed to skip these questions and start completing information on the next person.

Please provide the full address of the other place where Person 1 sometimes lives or stays:

Fields: House number, street name, apartment number, rural route address, city, state, zip code, county

If there is no street address or if this is a facility, please write in a description in the boxes below.

Nine respondents reported 23 people answering Question 8 in some way for one or more persons for whom they were reporting. It was used incorrectly twelve times following a "no" answer in Question 7, meaning that respondents answered that they or the person they were reporting did not live or stay somewhere else, but filled in Question 8 or any portion of it anyway. These are errors that result in unnecessary increases in respondent burden.

While Question 8 was marked for a total of eleven persons with a "yes" answer in question 7, we learned more about their living situations during the debriefings that eight of these persons should not be counted elsewhere. Of the eight, five only lived or stayed somewhere else for a few weeks during the year, four of whom were at their family homes in other countries. One person should not have been counted at all because he was in the military and overseas in the war. Two college students spent the majority of their time at their college address where we conducted our interview (the address provided in Question 8, not at their parents' houses.

While Question 8 was sometimes incorrectly filled in following a "no" answer in Question 7, it was also sometimes neglected following a "yes" answer in Question 7.

Question 8 was not used at all following a "yes" answer in Question 7 for seven persons. It should be noted that five of these seven times were people listed by one particular respondent, a Chinese student. She was very concerned about her and her roommates' privacy, and only listed the first initial of their first names. She did not mark "yes" for any people, but marked "seasonal or second residence" for all people, from which we have inferred a "yes" answer. She also did not provide any address information for any of the people, because of privacy concerns. The other two times no information was provided was because the respondent simply did not know the information.

How did respondents interpret the question?

Eleven respondents correctly interpreted that the question was asking for *another* place someone sometimes lives or stays. Four respondents thought the question was asking them to write in their primary address (the one to which the questionnaire would have been sent). One highly mobile respondent thought the question was asking for an "official" address, which he defined as the place where he receives his mail. The last one did not give an answer.

Were the address headings clear in helping respondents understand what information to put where?

Three respondents noted that they were used to writing their house number with their street name and thought it was odd that the two were separated.

Three respondents saw "county" as "country." Two of them commented that there is no place for people who travel between countries to put another country, and one cited Mexicans and Latin Americans as groups who might need this. One respondent who answered "yes" to Question 7 who didn't fill out any information in Question 8 would not have been able to fill out her roommates' addresses anyway, because three of them (and also the respondent) have addresses in other countries, and international addresses often vary in their order and presentation. A couple of respondents noted that they did not know what a rural route was.

What did the respondents do with the city-style boxes?

When a house number was given, only two respondents put it in the incorrect area, and both times it was under the street name. One respondent noted, "Sometimes you write the address you write across the whole line. You don't just write the house number by itself." The boxes for street name are very long, which might make respondents think that more information is supposed to go there than just their street name. Also, perhaps they are reading it as "street address" instead of street name.

Only two respondents used an apartment number. One wrote it in the street name box first but then also wrote it in the apartment number box.

Only one respondent used the Rural Route Address box, but incorrectly put a city name in it. In the interviews, a couple of participants expressed confusion at what it meant, but it did not seem to affect their responses.

Eight respondents listed a city. Six put it in the correct box, while two placed it in other boxes—the rural route box, and the street name box.

There were inconsistencies in how respondents completed the city and state boxes for Washington, D.C. Two of three respondents who reported DC locations wrote "Washington" in the City box, and "D.C." in the state box. The third wrote both "Washington" and "D.C." in the street name box. Other than these DC cases, there were no issues with the state box and no issues with zip code.

Of six respondents who seemed to have enough information to provide a county, four did and two did not. One wrote "USA" in the county box. One respondent said that county seemed redundant, since the form asked for a zip code as well. She assumed that if the Census Bureau had a zip code, they did not need a county because they could discern the county from the zip code. Other respondents may also assume this, and may not write in their county as a result.

Respondents were willing to provide partial information. Out of the respondents who answered "yes" to Question 7, respondents provided only partial information about 4 people. One participant who was only able to provide partial information noted that he filled it out "to the best of his ability."

Did respondents notice the write-in lines below county: "If there is no street address or if this is a facility, please write in a description in the boxes below."

Some respondents did not notice the two lines of text below county. Of thirteen respondents asked if they noticed it, four said yes while nine said no. A respondent suggested making the two lines of text above the write-in boxes bold so that they would be more noticeable.

What did those two lines of text mean to respondents?

Respondents interpreted this in a variety of ways. Three thought the question was asking for a mailing address, like a P.O. box, in case a physical place didn't have a mailing address. Others suggested places like homeless shelters, houses in developments that haven't been given street addresses yet, hospitals, nursing homes, jails, etc.

This question was directly related to what "facility" meant to respondents. Often, the answers about what a facility meant to respondents echoed their answers about what the lines of text meant to them, in their own words. For respondents, facilities included places like homeless shelters, hospitals, nursing homes, jails, and placed that were "institutional." However, one respondent, not a native speaker of English, thought a facility was a place where mail was collected. Another (who was a native speaker) read "facility" as "factory."

How did respondents use the write-in boxes?

One respondent wrote "parents home." One respondent wrote "In [country]." One respondent wrote "N/A."

How did the respondents feel about the boxes?

No respondents reported that the boxes were too small. One respondent suggested making the lines between the boxes more visible because she had trouble seeing them, and thought that older people might as well.

Recommendations: Change the wording of Question 8 in order to filter out people who might still miss the skip pattern. Suggested wording: "IF you marked yes to question (7), write below the <u>other</u> address where this person sometimes lives or stays." This may be effective, because people often read the first part of a sentence but do not finish it. We hope that this new wording will help people who read only the first part of the sentence to reassess whether or not they need to continue through the panel.

The final approved wording for the 2010 Overcount Booklet is "If you marked yes to Question 7, please provide the full address of the <u>other</u> place where this person sometimes lives or stays.

It is too late in the 2010 R & D cycle to consider making changes to the number of boxes in the address lines and in the style of the address fields. For 2020 research, we suggest considering a decrease in the number of boxes available for house number/apartment number and also in the number of boxes available for street name. The purpose is to reduce the likelihood that respondents will mistakenly write both the number and street name on the same line, as is done on many other forms. Another option would be to collect house number and street name in the same field, though this would probably complicate matching and unduplication.

Recommendation: The majority of respondents did not notice the two write-in lines below county: "If there is no street address or if this is a facility, please write in a

description in the boxes below." To increase visibility, we suggest using bold lettering for the lines that direct respondents about what to write in the write-in boxes. We suggest changing the wording to make it clear that P.O. boxes are excluded.

As noted earlier, questions 9 and 10 are designed to operationalize the census residence rule by establishing the *de jure* residence and *de facto* location of each person who was marked yes in Question 7 as sometimes living or staying somewhere else. Question 9 asks where the person lives or stays most of the time and has check boxes for the address to which the questionnaire is sent, the other address the respondent wrote in for Question 8, both places equally or some other place. Question 10 asks where the person was staying on April 1, 2010 with three of the four response categories in Question 9, omitting the one: "both places equally." The answers to these critical questions make it possible to determine from answers on the form itself whether each person should be counted at this address, the alternate address in Question 8, or some other place.

Question 9: Usual residence (de jure residence) Where does Person X live or stay most of the time?

Questions 9 and 10 are intended to be marked only for those persons with a "yes" answer recorded in Question 7. As noted earlier, six respondents answered yes to Question 7 for 16 of the total of 62 persons rostered in this study. They answered question 9 as follows for these 16 persons: this address, that is, the address printed on the back of the form (7), the new address written in the fields for Question 8 (2), both equally (3), and some other place (4). One of those with some other place marked was a soldier deployed to an overseas war zone who should be in the military, not housing unit, count, if he is counted at all, while another was a young nephew who cycled among three places. The latter case highlights a problem with the response categories – there is room to enter just one alternative address on this experimental form and this person had three addresses among which he cycled. If the third place is where he stays the most, the questionnaire does not capture that information and this case could not be resolved during processing. It would need to go to a telephone followup operation.

However, we found that Question 9 had answers for 33 persons, not just the 16 with "yes" answers: some respondents who missed or did not follow the skip instruction were incorrectly filling in an answer here when they should have left it blank. Three of the respondents mentioned above who had some "yes" and some "no" answers for persons in their households, as well as another four respondents with all "no" answers incorrectly marked a check box in this question for 17 persons with a "no" answer. The distribution of their answers is as follows: this address (14), the new address written in for Question 8 (1), and some other place (2). We note that 14 of these 17 persons incorrectly being marked here "at the address printed on the back of this form" because of missing the skip pattern in Question 7 are actually encouraging in a way: this actually verifies that these person should be counted at this address.

The remaining seven respondents with all "no" answers correctly left Question 9 blank for 29 persons who did not live or stay anywhere else.

It should be noted that answers in this question indicating this address or the alternative address listed in Question 8 are sufficient answers to have a good likelihood of correctly classifying, during data processing, where persons with these answers should be counted in the census from answers on the form. The answer, "both places equally," may be resolved in conjunction with the answer to Question 10, if the answer in that latter question is this address or the alternative address, because when a person stays in two places equally, he or she is then counted in the place where they stay on the Census reference day, as long as it is one of those two places.

Question 10: Census Day location (de facto residence) On December 1, where was this person staying?

The six respondents with a "yes" answer to Question 7 for the collective 16 persons classified the place where they were staying on December 1, 2008 (the Census Reference day for this study) as follows: this address (12), the new address written in the fields for Question 8 (2), and some other place (2).

As with Question 9, this question had a greater number of answers recorded for persons than it should have: 37 actual compared to 16 expected. In this case, four of the respondents who had a mix of "yes" and "no" answers for persons in their households and five other respondents with all "no" answers incorrectly marked answers to this question for an additional 21 persons. The breakdown of answers was as follows: this address (18), the new address written in for Question 8 (1), and some other place (2). We note again that 18 of the 21 who were incorrectly marked here for this address because of missing the skip pattern are actually verifying that they should be counted here.

The remaining respondents with all "no" answers correctly left Question 10 blank for 25 persons who did not live or stay anywhere else.

Using Questions 9 and 10 together to determine where persons should be counted

Of the three persons whose usual addresses were classified in Question 9 as "both equally," all three listed this address, that is, the one listed on the back of the questionnaire, as the place where they were staying on the Census Day for this test. That means these three can be classified as correctly counted in the census at this address, according to the census residence rules.

Of the four persons in Question 9 who were marked as living or staying somewhere else and who also were marked with a usual residence of "some other place," two indicated they were staying at this address on Census Day while two others again marked "some other place." Both of these outcomes would likely need a telephone followup to determine where the persons should be counted.

The very high number of persons for whom an answer was incorrectly marked in Questions 9 and 10 when they should have been skipped over it underscores the need for changing the formatting of the skip instruction to make it much more prominent.

It is clear that missing the skip instruction in Question 7 is affecting responses to both questions 9 and 10 The very high proportion of rostered persons for whom an answer was incorrectly marked in Questions 9 and 10 when they should have been skipped over it, somewhat more than 50%, underscores the need for changing the formatting of the skip instruction to make it much more prominent and more likely to be seen and heeded by respondents. As noted, however, most of them are marking this place (address printed on the back cover) in Questions 9 and 10, which actually verifies the no answer in Question 7. The survey programmers can write specs to identify globally those cases with "no" answers to Question 7 that can be disaggregated from the cases with "yes" answers to 7.

How do respondents interpret the questions?

Q9 "Where does Person X live or stay most of the time?"

The seventeen respondents correctly interpreted that this question was asking to identify the location the person lives or stays most of the time.

Q10 "On December 1, where was this person staying?"

One respondent showed hesitation and confusion over this question. Five respondents did not think about the specific day. Two respondents confused this question with Question 9 and thought the question was "on December 1 where does Person X live or stay most of the time." As a result of this confusion, they stated that there was a contradiction between "on December 1" and "most of the time."

How clear were the response categories in Question 9 and 10?

"The address printed on the back of this questionnaire"

Eleven of 17 respondents assumed it would be their regular home addresses. Eight of the 17 respondents showed confusion in trying to understand this response category. Also, eight did not turn the questionnaire over to look for any address on the back of it.

"The address or location you listed in Question 8"

Two respondents showed hesitation or confusion in understanding this category.

"Both places equally"

We observed no problems in respondent understanding of this category.

"Some other place"

Two respondents showed confusion on this question. One could not decide due to his frequent travel. The other was not clear what this meant.

How did the respondents mark the choices?

See tabulations of the response categories for Questions 9 and 10 above.

Types of incorrect answers include respondents who got confused with the categories of "the address printed on the back of this questionnaire" and "the address or location you listed in Question 8" because they became one address when they filled out their regular home addresses in Question 8.

Additionally, one respondent chose "some other place" as a result of excluding the address he gave in Question 8 and his confusion with the category "the address printed on the back of this questionnaire." Another respondent had difficulty with the category "some other place" due to his frequent travels. He didn't choose this because he regards his home as his official address where he receives his mail.

Recommendations: Highlight the skip instruction in Question 7 to avoid the unnecessary consequential mistakes in answering Questions 9 and Q10. Also, to reduce the problem of recording own home address as the other place in Question 8, we suggest modifying the wording of the second response category in both 9 and 10: The other address or location you listed in Question 8.

FINDINGS PART II: ALTERNATIVE WORDINGS FOR THE CENSUS DAY LOCATION QUESTION

In addition to testing the experimental questions and analyzing how well the question sequence worked, we also presented respondents in the debriefings with three alternative beginnings to the Census Day location (de facto) question and asked how they interpreted each one. We included these questions in the debriefing as a result of discussions our team had on these alternative versions as we were developing the question sequence. At that time, we had just sketchy anecdotal information on how these alternatives worked and we thought it would be interesting to find out a little more about them within our cognitive testing and debriefing on this project. Here are the results of that analysis for our own background knowledge. Perhaps these results will help start discussion of possible new approaches to collecting the de facto residence rule data that might be explored in the 2010-2020 testing cycle.

In the debriefing portion of the cognitive interview, we asked respondents to consider potential alternate wordings for some questions. Specifically, we asked them to provide their interpretations of the phrases "As of December 1st," "On December 1st," and "Around December 1st." The results of the debriefing show that while there may be some general consensus about the meanings of certain phrases, a wide range of interpretations are possible.

"Around December 1st (Census Day in this test)

The first phrase we asked respondents to comment on was, "Around December 1st, where does this person live or stay most of the time?" In order to specifically target respondents' interpretations of the time frame implied by "Around December 1st," we also then asked them specifically, "What does 'around December 1st' mean to you?" We discovered that a plurality of respondents associate the word "around" with a time period spanning one to two weeks. Specifically, seven of the seventeen respondents who commented on this question indicated that "around" meant a duration lasting for a week or two that could happen before or after December 1st, but would somehow include the date itself. For instance, one of these respondents answered, "I guess maybe the last week in November and the first week in December." Some respondents felt "around" could signal an even longer duration of time than a couple of weeks. In fact, five respondents mentioned the word "month" in their answers, and referred to either a time period ranging from a month on either side of December 1st (that is, November 1st to January 1st) or approximately 30 days surrounding December 1st (for example, November 15th to December 15th). One of these noted, "I would think probably within like thirty days would be approximately, so anywhere from like November first to January first." Finally,

three respondents said that "around" would indicate a period of days surrounding December 1st, but not necessarily an entire week. Two other respondents provided answers that did not specifically indicate a duration of time meant by "around." Thus, the phrase "around" generally signified a time period not of only a couple of days, but rather between seven and sixty days for most respondents.

"As of December 1st" (Census Day in this test)

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he next set of questions we asked concerned the phrase "as of December 1st." One respondent could not assign any meaning to the phrase, and one simply repeated the phrase "as of" in her answer, but ten of the sixteen remaining respondents interpreted the question to mean an open time period beginning on (and thus including) December 1st and continuing indefinitely. For example, one respond these respondents explained that it meant, "As of that date forward," while another of these told us it meant, "From December first onward." Conversely, three other respondents felt that "as of December 1st" indicated a time period beginning some time before December 1st and ceasing on (but including) that day. One of these respondents clarified, "To me it means up till and including December 1st, where is that person staying." Finally, three respondents felt that "as of December 1st" meant specifically "on December 1st." Though respondents may have had different ideas about the time period indicated by the phrase "as of," it is important to note that all sixteen respondents who reported a time frame did interpret December 1st as being a part of that time frame.

"On December 1^{st"} (Census Day in this test)

The final wording we asked respondents to interpret was the phrase, "On December 1st, where does this person live or stay most of the time?" Sixteen respondents provided comments indicating a time frame. Nine of those fifteen felt that it referred specifically to December 1st, and did not include any other days. Respondents noted, "It kind of sounds like just that day," and, "It means thinking back exactly to the date of—where was that person found?" However, not all respondents interpreted it to mean specifically December 1st. Two believed it referred to December 1st and onward, while one felt that it might include a day before and after December 1st. Notably, four respondents remarked that this was an odd question and difficult to answer because they were being asked to provide information for where they were living "most of the time" during only a twenty-four hour period. A respondent mused, "...It's kind of strange because December first is only one day. So how can you live or stay most of the time...in twenty-four hours?" Thus, though respondents generally conceived of "on December first" as referring specifically to that day, some respondents allowed for other days to be included in their interpretations, and some respondents expressed some confusion about the question itself.

Finally, we asked respondents whether "On December 1st" meant the same thing as "As of December 1st." The results were fairly split; of the seventeen respondents who provided answers, nine felt that the terms meant different things, while eight believed they meant the same thing. Though this may seem strange considering that earlier only three respondents stated that "as of" meant "on," it is important to remember that all interpretations of "as of" and "on" included the date December 1st. It should be noted that we had been asking respondents whether or not they would have answered questions about their living situations differently for each version of the question; thus, the seeming disparity in respondents' answers regarding their interpretations of "as of" and "on" versus whether or not the terms were the same may have to do with respondents thinking about whether or not their answers would be different, rather than simply whether or not the terms were different in some way.

Recommendations: The experimental census form that will be fielded in the split-panel test will ask two questions: "Where does this person live or stay most of the time?" and "On December 1st where was this person staying?" If the experimental question sequence proves useful particularly for those who have more than one residence and is a part of censuses in the future, it seems necessary to retain two questions in order to ask about both *de facto* and *de jure* residence. However, it may be useful to make a couple of slight changes to the question wording.

The question "Where does this person live or stay most of the time?" proved problematic in cognitive testing, particularly with an exceptionally mobile respondent. When asked this question, he thought about a range of time spanning months from the present. He had difficulty answering this question both for himself and for a roommate. He seemed to be thinking about a rather long period of time, perhaps a year back from the time at which the interview occurred. He told us that he answered "Where do you live or stay most of the time?" with "some other place" for himself because he could not identify a place that he lived or stayed in most of the time. He also answered "some other place" for his roommate, because though she had been living in the same place as the respondent for about a month or two, he assumed that she had spent the rest of her year elsewhere, and he did not know what that place was.

Thus, instead of asking "Where does this person live or stay most of the time?" it might be more useful to use a wording testing in the cognitive debriefing, and use the phrase, "Around December 1st, where does this person live or stay most of the time?" Though "around December 1st, had a rather wide interpretation, respondents did generally set limits on this time period, with none offering interpretations that extended beyond one month either way. This wording would encourage respondents to provide us with information that they might not have thought was relevant if they had been considering a reference period of an entire year, as evidenced in the transient respondent discussed above. Thus, if we narrow the reference period for the respondent without immediately enforcing parameters, we may collect better and more complete data, particularly from respondents who have more than one place to live.

That said, for respondents who split time equally between two or more places, this question may still be difficult to answer. Therefore, a question specifically inquiring only about December first should definitely be offered. The wording appearing in the experimental questionnaire, "On December 1st, where was this person staying?" is a good attempt to capture day-specific data, and does signal a specific date to many respondents, but it may still not be precise enough. Neither "as of" nor "on" December first adequately directed respondents to think only about one day, particularly when the phrase "most of the time" was included, as it was in the cognitive debriefing portion of the interview. However, even when "most of time" was not posed next to "on December 1st," respondents did not interpret "on December 1st," only as a particular day. For instance, on respondent said that "As of December 1st," meant, "From December 1st onward." When she was asked if "On December 1st," meant the same thing as "As of December 1st," she said, "To me it does," which means that she could be interpreting "On December 1st," to mean that day, but also the days following it. Thus, in order to encourage respondents to think only about a particular day, perhaps a word like "specifically" could be added before "on," so that those who reported more than one residence could be correctly enumerated if no usual residence could be determined.

Even if these suggestions are implemented, there will still be some difficulties in determining residence, particularly for those who have more than two usual residences. Therefore, more research directed at understanding complex living situations is needed. If our information about those who split their time among a number of places is more detailed and better, our ability to design questionnaires that correctly determine where they should be counted may be better, too.

FINDINGS PART III: ANSWERS TO THE SCREENER QUESTION AFFECT ANSWERS TO EXPERIMENTAL QUESTIONS 8 TO 10

Did those marking "yes" to this screener provide adequate addresses for followup?

Three provided a complete alternate address for themselves, but incomplete addresses (just city/state) for others in the household. One did not provide addresses for any of the five in her household. This respondent had strong privacy issues—for name, she wrote in just the first initial of the first name for each person, did not provide birthdates, and did not know or write the addresses for the others. Two others gave incomplete data during their cognitive interviews in the office, but both said that if they had been filling in the form at home, they would have found the data and filled it in. One of these respondents gave just the university name, city and state, without any dorm or street name or number. The other respondents gave the city and state of her nephew's mother, but not the street name and number.

Did those marking "yes" to this screener question answer the usual residence and Census Day location questions?

Six respondents gave answers to both Questions 9 and 10, even without having written in any address in 8. The breakdown of the 16 valid persons in terms of usual residence (Question 9) and reference day location (Question 10) is as follows:

- 7 persons 9 and 10 as this address
- 3 persons 9 as "both equally" and 10 as "this address"
- 2 persons both 9 and 10 as "some other place"
- 2 persons 9 "some other place" and 10 as "this address"
- 2 persons both 9 and 10 as "address written in"

How well did this experimental overcount sequence of questions work to get all data elements needed for processing?

- Three of 6 respondents with yes answers provided answers to all questions and provided usable addresses, but only for themselves. One gave his mailing address at his mother's house, but said he never stays there; he thinks we want some permanent address for him. These respondents provided inadequate or no addresses for others in households.
- Two others of the 6 could not provide the full addresses during the cognitive interview in our office, but said they'd provide it if they were at home and could check address books or call.
- Additional note on perceived respondent burden and respondents' deliberately wrong answers to avoid having to fill in "extra" data:
 - One respondent who answered yes for Persons 1 and 2 was frustrated with the additional respondent burden related to filling in alternate addresses for others in the household. He stated he was frustrated with these questions and deliberately changed his Q7 answer to "no" for Persons 3 and 4 to avoid having to answer address questions.
 - O Another respondent also said she would deliberately mark "no" to avoid having to write in address. Thus two of seventeen respondents stated during the cognitive interviews that they would deliberately record false information to avoid expending extra time and effort on completing the questionnaire

Conclusion: Many respondents may be willing and able to answer our experimental sequence and provide alternate addresses for themselves and maybe for their immediate family members. But they may not know and/or want to ask distant relatives or nonrelative roommates/housemates/boarders for alternate addresses of their roommates (this may be considered too intrusive by some). Some respondents

may also give deliberately wrong "no" answers to avoid having to fill in more answers, as shown above for two respondents in this study.

Recommendation: We recommend going forward with this sequence of (revised) questions in the 2010 "Avoid Followup" Alternative Questionnaire Experiment, but recognize there may be some limitations on what respondents will give us.

New recommendation: Add a new question on page 1 after Question 3 to get the name of the person who is filling out the questionnaire. The current question 4 asking for the respondent's telephone number gives the Decennial Statistical Studies Division (DSSD) analysts the name of this respondent and his/her phone number to use during the phone reinterview followup. That way the analyst will know who to try to get as the respondent during the reinterview, without having to ask screening questions in the telephone contact to figure it out. Checking that the Coverage Followup (CFU) phone interviewers have the same respondent in the followup phase who originally filled out the mail form several months earlier would improve the reliability of data and reduce the likelihood of error due to using different respondents in the two operations. There is extra space on the first page of the booklet where an answer line for name could be inserted.

Update: After our presentation of these results, the DSSD team members decided not to add a line for the respondents' name to the form above phone number. This would make the experimental form different from the standard 2010 Census form and possibly introduce error, possibly contaminating the controlled design of the study.

REVISIONS TO THE 2010 CENSUS OVERCOUNT BOOKLET FOR THE 2010 CENSUS "AVOID FOLLOWUP EXPERIMENT."

The authors presented the findings in this report to the Working Group on February 4, 2009. The following changes to the question sequence were made to the final version of the form for use in the 2010 split-panel Alternative Questionnaire Test and may be seen in Figure 2 at the end of this paper:

- 1. The skip instruction was made more visible in several ways. First, a blank line was inserted between the stem of the question and the "no" box. Second, the length of the arrow between the "no" answer and the SKIP instruction was shortened. Third, the font size of the SKIP instruction to the right of the "no" answer and the "Mark all that apply" instruction to the right of the "yes" answer was increased.
- 2. The skip instruction in Question 7 was reinforced by two recommended changes in Q8 for those who may have missed it in Question 7. A new phrase was added at the beginning of the question, "If you answered yes to question 7..." and "the other place"

was underlined to reduce the likelihood that respondents who miss the skip instruction end up unnecessarily writing in address to which the form was sent. It now reads:

"If you marked yes to Question 7, please provide the full address of the <u>other place</u> where this person sometimes lives or stays."

- 3. The second part of Question 8 asks respondents to write in a description of a place in which they stay that has no street address or is a facility. We noted that the unnumbered and plain, unbolded text was missed by a number of respondents and recommended that it be highlighted in some way. The final questionnaire version includes a new arrow and the word NOTE in capital letters to draw the respondents' attention to this item:
 - \rightarrow NOTE: If there is no street address of if this is a facility, please print a description in the boxes below.
- 4. The Census Day reference date in this round of testing was December 1, 2008. The final questionnaire has been revised to reflect April 1, 2010.

REFERENCES CITED

de la Puente, M. 1993. Why Are People Missed or Erroneously Enumerated in the Census: A Summary of Findings from Ethnographic Research, *Proceedings of the 1993 Research Conference on Undercounted Ethnic Populations*, pp. 29-66.

Ellis, Y. 1994. Categorical Data Analysis of Census Omissions. DSSD 1990 REX Memorandum Series #PP-10. July 26.

Fenstermaker, D. and Haines, D. 2002. A.C.E. Revision II: Summary of Estimated Net Coverage. DSSD A.C.E. Revision II Memorandum Series #PP-54. December 31, 2002.

Gerber, E. 1994. Respondents' Understanding of Residence Terminology in Cognitive Research and in the Living Situation Survey. *Bureau of the Census 1994 Annual Research Conference Proceedings*, pp. 434-449.

Govern, K., Kostanich, M., and Heimel, S. 2009. 2008 Coverage Followup Assessment. DSSD 2008 Dress Rehearsal Memorandum Series #0-18, with Memorandum from David Whitford, Chief, Decennial Statistical Studies Division to Frank Vitrano, Chief, Decennial Management Division, dated June 24, 2009.

Heimel, S. 2007. 2005 National Census Test: Initial Coverage. DSSD 2005 Census Memorandum Series #D-06, with cover memo from David. C. Whitford, Chief, Decennial Statistical Studies Division to Frank Vitrano, Chief, Decennial Management Division, dated January 18, 2007.

Krejsa, E., Linse, K., Kostanich, M., Heimel, S., Marshall, L., Banz, E., and King, R. 2007. 2006 Census Test Evaluation #2: Coverage Improvement Final Report, September 24, 2007.

Krejsa, E., Linse, K., Karl, L., and Van Vleck, C. 2005. 2004 Census Test Evaluation Report # 6: Residence Rules and Coverage Questions. 2010 Census Test Memoranda Series, Chapter 2004 Census Test, No. 42. Attached to Memorandum from Frank Vitrano to Distribution List, dated September 29, 2005.

Lamas, E. J. 2009. Residence Rule and Residence Situations for the 2010 Census. Memorandum from Enrique J. Lamas, Chief of Population Division to Frank Vitrano, Chief of the Decennial Management Division. Issued April 24, 2009.

Mule, T. 2002. A.C.E. Revision II Results: Further Study of Person Duplication. *DSSD Revised A.C.E. Estimates Memorandum Series PP-51*. Washington, D.C: U.S. Census Bureau. December 31, 2002.

National Research Council. 2006. *Once, Only Once, and in the Right Place: Residence Rules in the Decennial Census.* Panel on Residence rules in the Decennial Census, Daniel L. Cork and Paul R. Voss (eds). Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Schwede, L. 2010. Comparative Ethnographic Studies of Enumeration Methods and Coverage in Race/Ethnic Subpopulations. Census 2010 CPEX Evaluation Study Plan.

Schwede, L., A. Sorokin, and V.W. Yelei. 2009. "You Really Have to Puzzle This Out: Checking Residence and Coverage Duplications on a Census 2010 Questionnaire." 2009 JSM Proceedings Section on Survey Research Methods, pp. 4504-4518. Available at: www.amstat.org/sections/srms/Proceedings/y2009/Files/305182.pdf

Schwede, L. 2008. "Using Multiple Methods to Identify Types and Sources of Coverage Errors on an American Indian Reservation. Published in the 2008 JSM Proceedings of the Section on Survey Research Methods, pp. 2485-2492.

Schwede, L. 2006 "Who Lives Here?: Complex Ethnic Households in America," in *Complex Ethnic Households in America*, edited by L. Schwede, R. L. Blumberg, and A. Y. Chan. Lanham, MD: Rowman & Littlefield Publishing.

Schwede, L. 2003. "Complex Households and Relationships in the Decennial Census and in Ethnographic Studies of Six Race/Ethnic Groups." Final Census 2000 Testing and Experimentation Program Report.

www.census.gov/pred/www/rpts/Complex%20Households%20Final%20Report.pdf

Schwede, L. 2003. "Rostering, Residence Rules, and Coverage: Where We've Been and Where We're Going," in *Proceedings of the American Statistical Association Section on Survey Research Methods*,pp.3739-3746.

http://www.amstat.org/Sections/Srms/Proceedings/y2003/Files/JSM2003-000649.pdf.

Schwede, L., Blumberg R.L., and Chan, A. 2006. *Complex Ethnic Households in America*. Lanham, Maryland: Rowman & Littlefield Publishing Company.

Schwede, L., Sorokin, A., and Wake V.Y. 2009. "You Really Have to Puzzle This Out: Checking Residence and Coverage Duplications on a Census 2010 Questionnaire." Presented at the JSM Meetings in Washington, DC on August 3. Published in 2009 JSM Proceedings of the Section on Survey Research Methods, pp. 4504-4518.

Appendix, Figure 1: Test Version: Experimental Overcount Question Sequence in 2010 Census Overcount Booklet, Form D-1(X13), finalized on June 18, 2009 $\left(\text{Questions 7 to }10\right)^2$

1. Print name of Person 3	
1. Fill liame of Person 3	7. Does this person sometimes live or stay somewhere else?
Last Name	 No → SKIP to the next person, if more people live here. Yes — Mark X all that apply.
First Name MI	☐ In college housing ☐ At a seasonal or second residence
	☐ In the military ☐ In jail or prison ☐ For a job or business ☐ In a nursing home
2. How is this person related to Person 1? Mark N ONE box.	For child custody For another reason
☐ Husband or wife ☐ Parent-in-law ☐ Biological son or daughter ☐ Son-in-law or daughter-in-law	
Adopted son or daughter Other relative	Please provide the full address of the other place where this person sometimes lives or stays:
Stepson or stepdaughter Roomer or boarder	House Number
☐ Brother or sister ☐ Housemate or roommate	TOTAL TRANSPORT
☐ Father or mother ☐ Unmarried partner	
☐ Grandchild ☐ Other nonrelative	Street Name
3. What is this person's sex? Mark X ONE box.	
☐ Male ☐ Female	
4. What is this person's age and what is this person's date of birth?	
Please report babies as age 0 when the child is less than 1 year old. Print numbers in boxes.	Apartment Number
Age on December 1, 2008 Month Day Year of birth	
	Rural Route Address
→ NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this census, Hispanic origins are not races.	
5. Is this person of Hispanic, Latino, or Spanish origin?	
No, not of Hispanic, Latino, or Spanish origin	City
Yes, Mexican, Mexican Am., Chicano	City
Yes, Puerto Rican	
 Yes, Cuban Yes, another Hispanic, Latino, or Spanish origin — Print origin, for example, 	State ZIP Code
Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.	
	County
	County
6. What is this person's race? Mark x one or more boxes.	
☐ White	If there is no street address or if this is a facility, please write in a
Black, African Am., or Negro	description in the boxes below.
☐ American Indian or Alaska Native — Print name of enrolled or principal tribe. ☐ Principal tribe.	
Asian Indian Japanese Native Hawaiian	9. Where does this person live as stay most of the time?
☐ Chinese ☐ Korean ☐ Guamanian or Chamorro ☐ Filipino ☐ Vietnamese ☐ Samoan	Where does this person live or stay most of the time? The address related as the healt of this questions in
☐ Filipino ☐ Vietnamese ☐ Samoan ☐ Other Asian — Print race, for ☐ Other Pacific Islander —	The address printed on the back of this questionnaire
example, Hmong, Laotian, Thai, Print race, for example,	The address or location you listed in Question 8
Pakistani, Cambodian, and so on. 7 Fijian, Tongan, and so on. 7	Both places equally
	☐ Some other place
☐ Some other race — Print race.	10. On December 1, where was this person staying?
Control lave — I link lave. V	The address printed on the back of this questionnaire
	☐ The address or location you listed in Question 8
	Some other place
→ Continue to Question 7.	If more people were counted in Question 1, continue with Person 4.

 $^{^{2}}$ For Person 1, the same questions are numbered 10 to 13.

Appendix Figure 2: Final Experimental Overcount Question Sequence in 2010 Census Overcount Booklet, Form D-1(X13), finalized on June 18, 2009 (Questions 7 to 10)³

1. Print name of Person 3	7		
1. Print name of Person 3	7. Does this person sometimes live or stay somewhere else?		
Last Name	No →SKIP to the next person, if more people live here.		
	☐ Yes — Mank at that apply. ☐ In college housing ☐ At a seasonal or second residence. ☐ In college housing ☐ At a seasonal or		
First Name MI	☐ In the military ☐ In Iail or prison		
2. How is this person related to Person 1? Mark X ONE box.	For a job or business In a nursing home		
☐ Husband or wife ☐ Parent-In-law ☐ Biological son or daughter ☐ Son-In-law or daughter-In-law	☐ For child custody ☐ For another reason		
☐ Biological son or daughter ☐ Son-in-law or daughter-in-law ☐ Adopted son or daughter ☐ Other relative	 If you marked yes to Question 7, please provide the full address of the other place where this person sometimes lives or stays: 		
☐ Stepson or stepdaughter ☐ Roomer or boarder			
□ Brother or sister □ Housemate or roommate □ Father or mother □ Unmarried partner	House Number		
☐ Grandchild ☐ Other nonrelative			
3. What is this person's sex? Mark X ONE box.	Street Name		
□ Male □ Female			
4. What is this person's age and what is this person's date of birth?			
Please report bables as age 0 when the child is less than 1 year old.	Aparlment Number		
Print numbers in boxes. Age on April 1, 2010 Month Day Year of birth	Apaulies number		
rigo en right i, 2010			
	Rural Route Address		
NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this census, Hispanic origins are not races.			
5. is this person of Hispanic, Latino, or Spanish origin?			
☐ No, not of Hispanic, Latino, or Spanish origin			
Yes, Mexican, Mexican Am., Chicano	City		
☐ Yes, Puerto Rican ☐ Yes, Cuban			
Yes, another Hispanic, Latino, or Spanish origin — Print origin, for example,	State ZIP Code		
Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on 🍞			
	County		
6. What is this person's race? Mark 📝 one or more boxes.			
☐ White	A MOTE When he and address of White he foulth about the		
☐ Black, African Am., or Negro	→ NOTE: If there is no street address or if this is a facility, please print a description in the boxes below.		
	0.00		
☐ Filipino ☐ Vietnamese ☐ Samoan	Where does this person live or stay most of the time?		
☐ Other Asian — Pint ace, for ☐ Other Pacific Islander —	☐ The address printed on the back of this questionnaire ☐ The address or location you listed in Question 8		
example, Hintong, Laotlan, Thal, Print race, tor example, Paikstani, Cambodian, and so on. 7 Fillan, Tongan, and so on. 7	☐ Both places equally		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	☐ Some other place		
	10. On April 1, 2010, where was this person staying?		
☐ Some other race — Print race.	☐ The address printed on the back of this questionnaire		
	☐ The address or location you listed in Question 8 ☐ Some other place		
Li Suite dilei paue			
→ Continue to Question 7.	→ If more people were counted in Question 1 on the front page, continue with Person 4.		
4			
191504			

³ For Person 1, the same questions are numbered 10 to 13.