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**Final Report of an Experiment:
Effects of a Revised Instruction, Deadline,
and Final Question Series
in the Decennial Mail Short Form**

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Final Report of an Experiment: Effects of a Revised Instruction, Deadline, and Final Question Series in the Decennial Mail Short Form

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**FINAL REPORT OF AN EXPERIMENT:
EFFECTS OF A REVISED INSTRUCTION, DEADLINE, AND FINAL QUESTION
SERIES IN THE DECENNIAL MAIL SHORT FORM**

EXECUTIVE SUMMARY

This study was conducted to evaluate several potential improvements in the 2010 Decennial Census mail form:

- A revised instruction about whom to list as Person 1,
- A Final Question series intended to reduce and identify coverage errors, and
- A deadline for return of the form, combined with a compressed mailing schedule.

Westat conducted a national mailout test for the Census Bureau in March and April of 2006. Census questionnaires were mailed to a national sample of addresses on the U. S. Postal Service Delivery Sequence File; Austin TX was excluded to avoid interfering with a census test in that city. Sampled households received an advance letter, an initial questionnaire package, and a thank you/reminder postcard. There was no replacement questionnaire and no follow up for nonresponding households.

Three experimental factors were evaluated in four panels, with 7,095 sample addresses allocated to each panel. A total of 13,703 questionnaires were returned by the cutoff date of May 19, with response rates varying from 50 to 53 percent among panels. A sample of about 600 cases was sent for a Coverage Followup (CFU) interview in order to assess the Final Question series. CFU interviews were conducted by telephone during July of 2006; the response rate was 82 percent.

A. Does a revised instruction about whom to list as Person 1 reduce errors?

This instruction causes considerable respondent confusion and errors in cognitive interviews. Respondents do not know whom to list as Person 1, and some inadvertently leave themselves or other household members off the form. The instruction is important, since it identifies the householder, and subsequent questions ask for the relationship of each person in the household to Person 1. If respondents do not list the correct person (someone who owns or rents the housing unit) as Person 1, relationships will be reported incorrectly for members of the household.

This study evaluated two alternative versions of the instruction. The control version, used in Census 2000, was:

“Please answer the following questions for each person living in this house, apartment, or mobile home. Start with the name of one of the people living here who owns, is buying, or rents this house, apartment, or mobile home. If there is no such person, start with any adult living here. We will refer to this person as Person 1.”

The experimental version was developed through several iterations of cognitive testing and revision. It was:

“Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.”

There was no difference between these two versions of the instruction in the frequency with which respondents left themselves off the form. That error occurred in about 0.27 percent of forms overall. It was not possible in this study to evaluate which instruction leads to fewer errors in selecting which person to list as Person 1, which would require a reinterview. This test therefore does not provide a basis for preferring either version of the instruction. Based on the results of several cognitive tests, the revised wording is recommended for adoption.

Based on the continuing pretest evidence of respondent confusion and the difficulty of developing a clear, readily understood instruction, further research to develop an improved instruction or method for identifying the householder is recommended for implementation in the 2020 census.

Information about the respondent’s name and proxy status (i.e., whether the respondent lived in the household or was filling the form out for others who did) can be used to identify those who omitted themselves from the census form, a coverage error that has been observed in many cognitive tests but not previously confirmed in a mailout test. Results from this test indicate it affected 0.27 percent (s.e.=0.05) of households that mailed back forms. This is significantly different from zero and represents a substantial number of omissions (243,000, assuming 90 million mail returns in 2010). This finding supports a recommendation to retain questions to capture respondent’s name and proxy status and evaluate their use for coverage improvement.

B. Does a Final Question series reduce and identify coverage errors?

Attempts to develop coverage probes to identify coverage errors in the census form have had mixed results. The undercount question, in particular, performed poorly in 2004 and 2005 tests, suggesting that further research to develop and test alternative questions and approaches is needed.

This study developed and tested an experimental “Final Questions for Everyone” section that reminded respondents of the date of Census Day and of people who might inadvertently be left off the form, and asked two “coverage questions,” along with questions to identify the respondent, obtain a telephone number, and determine if the respondent is a non-household proxy.

“Before answering these last questions, please review your answers to be sure you have provided information about each person living or staying here on April 13, 2000. It is easy to miss someone, for example—

- yourself (if you live in this household)
- new babies, or
- temporary guests with no other place to live.

1. Is the number of people for whom you have provided information the same as the number you counted in question 1 on page 1?”

Yes

No—*Please briefly explain the reason.*

2. Did you leave anyone off the form that you thought about including? *For example: a person living at this address who has another home, a person living temporarily away, etc.*

Yes—*Please briefly explain the situation*

No

3. Print here the name and telephone number for the person who filled out this form. *We may call if we don't understand an answer.*

4. Please mark one box—

I live here

I do not live here, but am filling out this form for someone who does”

A random portion of the sample received this experimental version of the Final Question series, and a random portion received the control version, which included questions 3 and 4 above, but did not include the introduction and reminders or the coverage questions.

The Final Questions were placed on the back page of the questionnaire, requiring that space for persons 11 and 12 in the continuation roster be dropped. Placement at the end addresses the problem that the form lacks a clear stopping point. Respondents found this a logical place to review and check their answers, and 94-95 percent of respondents found and answered the questions. A total of 0.5 percent of respondents answered “no” to the first question and 2.4 percent answered “yes” to the second, indicating a possible coverage problem.

To evaluate how effectively the final questions identify coverage errors, all cases with a “no” response to question 1, or a “yes” response to question 2, or a write-in response to either, were selected for a Coverage Followup (CFU) interview, along with a random subsample of cases that were not so flagged. CFU added someone in 4.5 percent of flagged households, compared to 0.7 percent of non-flagged households; the difference is statistically significant. CFU deleted someone in 7.0 percent of flagged households, compared to 2.8 percent of non-flagged households; this difference is also statistically significant. Thus, the Final Questions help discriminate between households in which a coverage follow-up interview is productive from those in which it is much less so. Its efficiency is comparable to the preferred version of the undercount question, and is improved by using a narrower rule for selecting households for follow-up.

In order to evaluate whether the Final Questions (FQ) reduce coverage errors, experimental and control panels were compared in terms of (1) the frequency with which respondents left themselves off the form, (2) the inclusion of new babies, and (3) the occurrence of count discrepancies. There is no evidence that the reminders in the Final Question series led to coverage improvements, but larger samples would be needed to reach more definitive conclusions about coverage effects. There is evidence that the Final Questions stimulated respondents to check over their answers and in some cases fill in Question 1 when it had been left blank. Item nonresponse for Question 1 is 3.1 percent in the experimental forms compared to 4.3 percent in the control; the difference is significant.

The low rate of CFU adds (4.5 percent) in households flagged by the FQ is a disappointing result, since identifying omissions was an important goal of the series. Further analysis suggests that two factors contribute to this result. First, the inclusive wording of Final Question 2 (FQ2) invites mentions of non-residents as well as residents who were left off the form. Most mentions did not survive CFU questioning to be added to census rosters. Second, the CFU failed to identify most possible missed residents described in the write-in responses. (For FQ2, 78 percent of people in residence situations were never identified as possible adds in CFU.) An effective coverage follow-up should identify many, if not most, of the people described in the write-in responses as possible adds, even if subsequent questioning determines they were not Census Day residents. The failure of the CFU to do so was unexpected, and supports recommendations to revise the CFU instrument to better identify possible omitted residents within households, and to evaluate CFU before making a final decision on its implementation in the 2010 census. One revision that might improve the CFU's identification of omissions would be to add *dependent questions* to probe for situations reported on the mail questionnaire in the Final Questions (or to probe answers given to the undercount question).

The mixed results for the Final Questions support a recommendation to further develop and test the Final Questions (and other versions of the undercount question) in the 2010 experimental program. Progress on improving the performance of the undercount questions (or Final Questions) must proceed in tandem with improvements in the CFU instrument, not least because the CFU provides the criterion for evaluating alternative versions of the undercount questions. If the CFU fails to identify most possible missed residents flagged by the Undercount/Final Questions, as occurred in this study, then the latter can never be demonstrated to perform very well.

C. Due date combined with a compressed mailing schedule

Deadline messages in the mailing pieces, coupled with mailings a week later than the conventional schedule, obtained a significantly higher mail response rate, by 2.0 percentage points. In addition, several measures of data completeness and coverage showed significant improvements: compared to the control, the deadline panel had lower item nonresponse for Question 1, included more new babies, and respondents were significantly less likely to leave themselves off the form. This supports a recommendation to consider implementing a deadline, along with a compressed mailing schedule, in 2010. If not feasible, they should be evaluated as part of the 2010 experimental program.

Giving people a deadline and a shorter interval (by one week) in which to complete the form leads to a higher rate of mail response.

I. INTRODUCTION

The primary purpose of this study is to test a revised wording of the census mail questionnaire instruction about whom to list as Person 1. The revised instruction is intended to correct problems that showed up in qualitative tests. The mailout test also evaluates other potential improvements in the mail short form, including a compressed mailing schedule with a deadline for return of the form, and a final question series intended to provide a check on coverage, identify possible coverage errors, and provide a clear stopping point for respondents.

Thus, this research supports the 2010 Census objectives of improving coverage, reducing respondent burden, and reducing costs by improving mail response rates.

II. RESEARCH PROBLEMS

The experiment evaluates three potential improvements in the mail questionnaire.

A. Can an instruction about whom to list as Person 1 be revised to reduce respondent confusion and prevent coverage errors?

Qualitative testing (Dillman, Parsons, and Mahon-Taft, 2004) revealed that the instruction on the mail questionnaire about whom to list as Person 1 that was used in Census 2000 caused serious confusion and errors by respondents in cognitive interviews. Many did not know whom to list as Person 1. Following this instruction is important, because subsequent questions ask for each person's relationship to Person 1, who is considered the householder. Thus, respondents who list the wrong person as Person 1 will be reporting relationships incorrectly for the members of their households. Respondents were not sure whether they needed to include their own name and information, and 13 percent left themselves or someone else off the form entirely, thus introducing coverage errors. They were also confused about where answer spaces were located for all other persons' names. Revised instructions were developed and in cognitive tests were adequately understood (Hunter and de la Puente, 2005; Parsons, Mahon-Taft, and Dillman, 2005) but have not been field tested. This research provides the opportunity to determine whether the revised instruction corrects any tendency for respondents to leave themselves off the form.

In order to assess whether the alternate Person 1 instructions lead fewer respondents to leave themselves off the form, a random portion of the sample received the old wording (used in 2000):

“Please answer the following questions for each person living in this house, apartment, or mobile home. Start with the name of one of the people living here who owns, is buying, or rents this house, apartment, or mobile home. If there is no such person, start with any adult living here. We will refer to this person as Person 1.”

and a random portion received the revised wording:

“Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.”

Note that the revised wording is not identical to the wording of this instruction used in the 2005 and 2006 census tests. Because that wording tested poorly in one of the cognitive tests leading up to this field test, it was further revised.

Note also that this test cannot evaluate which instruction leads to fewer errors in selecting which person to list as Person 1, which would require reinterview.

B. Can a final question series improve coverage and identify possible errors for follow up?

Census rules that determine where people should be enumerated in the census are complex and sometimes counter-intuitive, and guidance to respondents about whom to list in their census forms is necessarily abbreviated and simplified. Qualitative research shows that some respondents do not read the guidance given, others do not understand it when they do read it, while still others ignore it even though they read and understand it because it does not agree with their own notions of who lives in their households (see, e.g., Gerber 1994, 2004; Gerber, Wellens, and Keeley 1996; Dillman, Parsons, and Mahon-Haft 2004).

Errors made in completing rosters of household residents have in past censuses accounted for about a third of all decennial census coverage errors (Hogan 1993). Complex living situations contribute to coverage errors, and people who are unrelated to the respondent, transient, or who have a marginal status in a household tend to be omitted, while college students and people with another residence where they live while working tend to be erroneously included (see, e.g., de la Puente 1993).

In past censuses, special coverage questions have been included on self-administered census forms for the purpose of identifying coverage errors. Such questions usually provide cues to remind respondents of the types of people who might be left off the form inadvertently. In 1970, two coverage questions probed for people who were left off because there was not enough room to report them, or the respondent was not sure about listing them; a third asked about people who were listed but were away from home and a fourth asked about people staying there on Census Day who were not already listed.¹ Although placement of the questions at the bottom of the form increased item nonresponse (one third of respondents failed to answer the coverage questions; Rothwell, 1972), the first probe (question 9) added about 400,000 people to the census (Davie, 1973). (Documentation of the performance of the other coverage probes is not available.) Similar probes were also included in the 1980 and 1990 mail questionnaires (see National Research Council, 2006). In the 2000 census, coverage probes for erroneously included or omitted people appeared in the enumerator questionnaire. Procedures were not followed and the questions did not perform well, resulting in the addition of only about 77,000 people and the deletion of about 83,000 (Nguyen and Zelenek 2003).

¹ The questions were “9. *If you used all 8 lines*—Are there any other persons in this household?, 10. Did you leave anyone out of Question 1 because you were not sure if he should be listed—for example, a new baby still in the hospital, or a lodger who also has another home?, 11. Did you list anyone in Question 1 who is away from home now—for example, on a vacation or in a hospital?, 12. Did anyone stay here on Tuesday, March 31, who is not already listed?” Respondents who gave positive answers to 10, 11, or 12 were asked to record the names and reasons on the back of the form.

In the 2001 Canadian Census, an undercount question (“Step C”)² immediately following the household roster in the mail questionnaire successfully identified census omissions. About 1 percent of respondents gave positive responses, and about 20 percent of these mentioned people who were added to household rosters (Roy 2003).

Coverage questions are being evaluated for possible inclusion in the mail census questionnaire for the 2010 census as well as the nonresponse followup instrument. An “overcount question” is intended to identify other places each person also might have been enumerated. An “undercount question” asked immediately after Question 1 is intended to identify possible omissions. Possible errors would be followed up by a Coverage Followup interview to correct the error, if any. After the undercount question³ performed poorly (that is, it did not identify many omissions) in a 2004 census test (see Krejsa, Linse, Karl, and Van Vleck, 2005), it was revised⁴ and performed somewhat better in a 2005 census test (Linse et al. 2007). However, it still fails to identify most of the omissions identified in coverage follow-up interviews.

Don Dillman and I attempted a different approach to designing questions to identify missed people, inspired in part by one of the seven principles that Norman (1988) proposes for improving the usability of everyday objects: design for error. He urges designers to “Assume that any error that can be made will be made. Plan for it. Think of each action by the user as an attempt to step in the right direction; an error is simply an action that is incompletely or improperly specified. Think of the action as part of a natural, constructive dialog between user and system.... Allow the user to recover from errors, to know what was done and what happened, and to reverse any unwanted outcome. Make it easy to reverse operations; make it hard to do irreversible actions.” (1988: 200).

Here, we apply Norman’s principle by giving respondents a chance to correct coverage errors they may have (inadvertently) made. Our approach differs from previous approaches to the design of coverage questions in several ways.

Orientation. First, we provide an introduction to orient respondents to the task of reviewing the form to be sure it includes everyone in the household. The introduction reminds respondents of the date of Census Day, and includes reminders of several categories of people who might be inadvertently left off:

“Before answering these last questions, please review your answers to be sure you have provided information about each person living or staying here on April 13, 2000. It is easy to miss someone, for example—

- yourself (if you live in this household)
- new babies, or

² “Did you leave anyone out of Step B because you were not sure the person should be listed? *For example: a person living at this address who has another home; a person temporarily away.*”

³ “Are there other people who live or stay at this place part of the time but are not permanent residents, such as live-in employees or children in joint custody?”

⁴ Two revised versions were fielded: “Were there any additional people staying here September 15, 2005 that you did not include in Question 1?” and “Were there any people staying here around September 15, 2005 that were...moving out? Just moving in?...”

- temporary guests with no other place to live.”

Structuring the cognitive task. Final Question 1 (FQ1) provides a cognitive task that should stimulate respondents to look back over their form and compare the number of people reported in Question 1 with the number for whom they provided information:

1. “Is the number of people for whom you have provided information the same as the number you counted in question 1 on page 1?
Yes
No—*Please briefly explain the reason.*”

If it works, the question should facilitate a more active review than simply instructing respondents to check over their forms. Since count discrepancies may result either from erroneous inclusions or from omissions, a “no” response may indicate either type of error, or may reflect an incorrect number given in Q1 even though the number of people reported on is correct.

Although there is no explicit instruction to correct any errors, respondents may do so as a result of answering FQ1. This question has not been previously used as a coverage probe, although the census has in the past followed up count discrepancies of the sort FQ1 asks about.

Final Question 2 (FQ2) is similar to coverage question 10 in the 1970 census and to Step C in the Canadian census, and is intended to identify census omissions:

2. “Did you leave anyone off the form that you thought about including? *For example: a person living at this address who has another home, a person living temporarily away, etc.*
Yes—*Please briefly explain the situation*
No”

Instead of asking respondents if there was anyone they were “not sure” about including, the wording is modified to ask if there was someone they “thought of” including but did not. Thus, identifying potential omissions does not require respondents to express uncertainty in their answers. Qualitative tests show that respondents are usually quite confident about who should be reported (or not reported) as members of their households, even when their reports are erroneous according to census rules. Human judgments are biased by overconfidence in many situations, especially those involving difficult judgments (Griffin and Tversky 2002), and survey respondents typically express high levels of confidence in their answers. As Cannell et al. (1989) note, “respondents [do] not appear to doubt their own, often mistaken, interpretations” (p. 47). This consideration suggests that omissions may be better identified by a question that does not depend on respondents’ uncertainty as the criterion for reporting them.

In cognitive tests, the “thought of” wording was more inclusive than the “not sure” wording (Kerwin and Moses 2006), so it may capture more potential omissions by avoiding any bias due respondents’ overconfidence. The disadvantage is that it is likely to lead to more mentions of

people whom the respondent thought of but decided, confidently and correctly, did not belong on the form.

A similarly-worded debriefing question successfully identified unreported victimization incidents in the National Crime Survey (Martin, Groves, Matlin, and Miller 1986). The question was, “Was there an incident you thought of that you didn’t mention during the interview? I don’t need details.” About 7 percent of respondents reported there was an incident they had failed to report.

Placement. We believe it makes more sense to place coverage questions at the very end of the questionnaire rather than immediately following Question 1. Placement immediately after Question 1 implies to some respondents that they have made a mistake, or are being asked to second-guess an answer they just provided. Cognitive tests found this caused confusion or agitation, or led respondents to go back and change their answers to Question 1, introducing errors (Gerber 2004, Cantor, Heller, and Kerwin 2003). One consequence may be more discrepancies between the household count in question 1, and the number of people for whom information is given (Linse et al. 2007). Following Norman, placement at the end may facilitate correcting errors associated with the action of filling out the questionnaire. Cognitive tests indicate that respondents find this a logical place to review and check their answers, and actually want such items on the census form (Kerwin and Moses 2006).

Placement at the end also addresses the problem that the questionnaire lacks a clear stopping point. In cognitive tests, respondents flip through the pages of the questionnaire before eventually concluding they have answered all the questions they are supposed to (Dillman, Parsons, and Mahon-Taft, 2004). Adding final questions at the end of the Census form gives respondents a sense of completion.

A possible disadvantage of placing the questions at the end is that respondents may never find them. In previous censuses, coverage questions placed at the bottom of the mail form or the back of the enumerator form had high rates of missing data (Rothwell, 1972; Nguyen and Zelenak, 2003). In this study, navigational instructions were revised to route respondents to the end of the form, where a conspicuous title indicated the final questions should be answered by everyone.

A random portion of the sample received one version of a final question series and a random portion received a second version. All versions ask respondents to provide their name, phone number, and proxy status. This information is used to evaluate the effects of the revised instruction (see research question A) and the final coverage check on respondents’ erroneously leaving themselves off the form.

The experimental version further asks respondents to review their responses before mailing the finished questionnaire, and includes the two coverage questions discussed above. The second, control version of the “Final Questions” does not include questions to check on coverage (see Fig. 2).

Adding the new section required dropping Persons 11 and 12 from the continuation roster on the back page for all panels.

C. Can a deadline plus compressed mailing schedule improve mail response?

The current plan for the 2010 Census is to deliver the questionnaire 15-17 days before Census Day (April 1, 2010), as was done in Census 2000. The intention of the Census Bureau is to have households fill out and return the census form immediately upon receipt. However, the form itself uses the past tense to ask for the number of persons who “were” residing in the household on a future date (Census Day, April 1). The conflict may cause confusion and creates a dilemma for some respondents trying to follow instructions exactly. Web surveys conducted by Knowledge Networks during Census 2000 indicated that about one in six people thought the forms were due on April 1st and one in ten did not know when the forms were supposed to be mailed back. Another problem with an early mailing schedule is that coverage errors may be introduced if changes (such as deaths, births, or moves in or out of a household) occur after a form is returned but before April 1st. In addition, mailing so far in advance of Census Day is likely to diminish the effectiveness of each mailing piece as a stimulus to response (Dillman, 2000).

A second element of the experimental treatment is an explicit due date. A due date increased the speed of mail response in the 2003 test, although it did not improve overall mail response rates (Bouffard, Brady, and Stapleton, 2004). Respondents in recent cognitive tests conducted by Westat report they would prefer to have a due date for the return of their forms.

Speeding up the return of mail forms can reduce costs because it reduces the number of households to which a replacement questionnaire must be sent. Speeding up mail response also may reduce coverage errors, although this experiment cannot fully analyze the effects of timing on coverage. Research in past censuses finds that the rate of coverage errors in mail returns rises in later returns. As shown in Table 1, the rate of erroneous enumeration was nearly doubled in forms filled one to two weeks after Census Day in 1990, compared to earlier returns. (Note that these data do not support the notion that coverage errors may be elevated when respondents fill out and return their forms prior to Census Day.)

Table 1. Estimated Rates of Erroneous Enumeration, by Date of Completion

	3/18-3/24	3/25-3/31	4/1-4/7	4/8-4/14
Percent in error	2.4%	2.9%	3.2%	5.3%

Source: Graph 3.2.3, Griffin and Moriarity (1992). Date of completion was recorded by respondents on the back of the census form; 88 percent of forms provided a date.

Practically speaking, it is not feasible to implement a deadline without also moving up the mailing schedule. It does not make much sense to provide a deadline that is in the distant future, nor does it make sense to have a deadline that is before Census Day. Therefore, the experimental treatment combines an explicit deadline and a “compressed schedule”, in which questionnaires were mailed 14 days before Census Day. In the control treatment (“regular schedule”) they were mailed 21 days before Census Day. (It is assumed they were received 3-4 days after being mailed.) The other mailing pieces were also mailed a week later in the compressed schedule, as

shown below. Four mailing pieces in the experimental treatment (advance letter, cover letter and outgoing envelope for the questionnaire, and reminder card) asked respondents to have their questionnaires in the mail by April 17, four days after Census Day (April 13). The control treatment had no explicit due date. (See Fig. 3 for facsimiles of the mailing pieces.)

Scheduled Mailings for Two Treatments	Date
Mail Advance Letter - “Regular Schedule” group	3/16/2006
Mail Questionnaire - “Regular Schedule” group	3/23/2006
Mail Advance Letter - “Compressed Schedule” group	3/23/2006
Mail Reminder - “Regular Schedule” group	3/30/2006
Mail Questionnaire - “Compressed Schedule” group	3/30/2006
Mail Reminder - “Compressed Schedule” group	4/6/2006
Census Day	4/13/2006
Deadline (“Compressed Schedule” group)	4/17/2006
Close out of field period	5/19/06

III. METHODOLOGY

A. Survey Methodology

Westat, working under contract to the Census Bureau, conducted a national mailout/mailback test in March and April 2006 in households with city-type addresses that receive mail from the U.S. Postal Service (USPS). The population of interest includes those households that would be eligible for a mailout-mailback short form. Households in Austin, TX were excluded from the sample in order to avoid interference with the 2006 Census Test, which took place in Austin at the same time.

A sample of 28,380 households was drawn from the USPS Delivery Sequence File (DSF) that contains all delivery point addresses serviced by the USPS. The DSF undercovers new housing and misses units due to resident requests for removal from the list. In addition, all entries listed with a P.O. Box rather than street address were excluded from the sample, because a P.O. Box is not clearly tied to a single residential housing unit. The imperfections of the list and the exclusion are not anticipated to affect the results of the experiment.

The sample was drawn by Marketing Systems Group (MSG) using specifications provided by Westat. The sample was allocated proportionately across the 50 states and the District of Columbia (with the exclusion of Austin, TX). It was implicitly stratified (using as sort variables State, Household size, percent Black or Hispanic in the zip code, percent High School or less, percent earning less than \$20,000 income, and zip code) and a systematic sample selected.

Sampled households received multiple mailings designed to increase response rates, including an advance letter, an initial questionnaire package, and a blanket thank you/reminder postcard. Unlike the planned 2010 census, there was no replacement questionnaire and no follow up in nonresponding households.

First class mail was used to deliver all mailing pieces, and a postage-paid return envelope was enclosed for respondents to mail back their completed questionnaires to Census Bureau headquarters where sworn Westat staff checked in and keyed the data. (Note that this required all mail returns to pass through the Census Bureau mail room, including the irradiation process, slowing the receipt of returned questionnaires.) Census Day was April 13, 2006, for all panels. Mailing pieces, including letters, included the Census Bureau logo in the masthead and were signed by the Director.

The sample was expected to yield completed surveys from 11,885 households, based on experiences from previous Census Bureau mailout tests that have obtained response rates of 40 to 50 percent⁵. A response rate of 45 percent and an undeliverable rate of 7 percent were assumed.

A sample of approximately 600 cases was sent for a Coverage Followup interview, in order to assess potential coverage gains in households where responses to final questions 1 and 2 indicated a person might have been left off the form, or another error had been made. All cases with a negative response to Final Question 1 or positive response to Final Question 2 or a write-in response to either question were sent for follow up. In addition, a random subsample of about 300 cases that provided no indication of a coverage issue in their answers to the final questions was sent to Coverage Followup. Interviews were conducted by telephone between June 30 and July 21, 2006.

B. Experimental Design

Three experimental factors are evaluated in four panels, with sample equally allocated among each panel. The four panels are:

⁵ For example, check-in rates (excluding PMRs) to the initial mailing for panels of the Simplified Questionnaire Test (conducted in 1992) ranged from 44% to 52%, depending on the panel (all were short forms; see U.S. Census Bureau 1992); final response rates (after a replacement questionnaire was sent) ranged from 63% to 71% (Dillman, Sinclair, and Clark 1993). The Implementation Test (conducted in 1992) obtained a response rate (excluding UAAs) of 62.7% for a short-form panel that included an advance letter and reminder, but no replacement questionnaire (Dillman, Clark, and Sinclair 1995). The initial mailing for short forms in the 1986 National Content Test obtained a response rate of 35.5% (Woltman 1991). The initial mailing for the control panel in the 2005 National Census Test obtained a response rate of 48.3%.

Panel	Wording of Person 1 instruction	Final Question	Mailout schedule/ deadline message	N
1	Census 2000	Obtains R's name, phone no., proxy info	Conventional schedule, no deadline	7,095
2	Revised wording	Same as Panel 1	Same as Panel 1	7,095
3	Same as Panel 2	Obtains R's name, phone no., proxy info. Asks R to check over answers, provides reminders, and asks two coverage questions.	Same as Panel 1	7,095
4	Same as Panel 2	Same as Panel 3.	Compressed mailout schedule + due date	7,095

Panel 1. Housing units in this treatment group received questionnaires with the same wording for the Person 1 instruction that was used in Census 2000. In the Final Question series, respondents were asked to provide their name, telephone number and proxy information. Mailings follow the conventional schedule. The questionnaire was mailed three weeks before “Census Day” with no explicit deadline for return.

Panel 2. Housing units in this treatment group receive questionnaires with the revised wording for the Person 1 instruction. In the Final Question series, respondents are asked to provide their name, telephone number and proxy information. Mailings followed the conventional schedule. The questionnaire was mailed three weeks before “Census Day” with no explicit deadline.

Panel 3. Housing units in this treatment group received questionnaires with the revised wording for the Person 1 instruction. In the Final Question series, respondents were asked to check over their answers and answer two questions about coverage before considering the survey complete. They also were asked to provide their name, telephone number and proxy information. Mailings followed the conventional schedule. The questionnaire was mailed three weeks before “Census Day” with no explicit deadline.

Panel 4. Housing units in this treatment group received questionnaires with the revised wording for the Person 1 instruction. In the Final Question series, respondents were asked to check over their answers and answer two questions about coverage before considering the survey complete. They were also asked to provide their name, telephone number and proxy information. The mailout schedule was compressed, and the questionnaire was mailed out two weeks before “Census Day.” An explicit due date for mailing it back was given in the advance letter, the outgoing envelope and cover letter for the questionnaire mailing, and the reminder postcard.

IV. LIMITATIONS

The sample is relatively small (especially for analysis of coverage effects) and is selected from non-Title 13 sources. Differences in the sample frame may result in different characteristics of persons and households compared to the census and census tests, but should not affect comparisons among experimental panels. The difference in sampling frame should be kept in mind when comparing results from this test to other national mailout-mailback census tests, which are drawn from the Master Address File.

Nonsampling errors affecting small cells could affect conclusions.

The test was conducted in a non-census environment, in which response rates are usually lower. The measured effects of a deadline may not generalize to the high-publicity, high-response environment of a census. The test did not include a replacement questionnaire, which is planned for 2010. The test does not provide good data on the timing of mail returns, since returns were delayed by the Census Bureau's process of irradiating incoming mail.

The effects of a revised instruction about who to list as Person 1 cannot be fully assessed in the absence of a reinterview to determine if Person 1 was correctly selected. The analysis focuses on the potentially most serious coverage consequence of respondents misunderstanding this instruction: leaving themselves off the form.

All questionnaire versions, including the control, differ in important ways from versions currently implemented in census tests, or proposed for the 2008 Dress Rehearsal. For example, all questionnaire versions: include a series of final questions, drop the undercount question (replaced in selected panels by two final coverage questions), request respondent's name and proxy status, move the request for the telephone number to the back page of the questionnaire, and drop Persons 11 and 12 from the continuation roster. These variations are necessary to meet the test objectives and make valid comparisons between panels, but may affect comparisons with questionnaires that do not contain these features.

V. RESULTS

Standard errors for the estimates are computed using stratified jackknife replication with random groups using VPLX (Fay 1998). Cases are sorted using the implicit variables used to sort the sample frame prior to selection, and strata are composed of pairs of adjoining cases on the sorted list. Statistical significance is assessed with t-tests calculated using VPLX. Standard errors are shown in parentheses in tables.

13,703 completed questionnaires were returned by the cutoff date of May 19, and an additional 379 were returned after that date (57 more were received after processing ended on Aug. 9).

The response rate is defined as:

$$\text{Response rate} = \frac{\# \text{ of nonblank, primary returns}}{\text{panel sample size} - \text{UAA for the panel}} * 100$$

The numerator is the number of sample cases for which a nonblank return was received. The denominator is the number of sample cases minus the number of sample cases returned by the USPS as “undeliverable as addressed” (UAA), or marked “vacant.” This calculation is comparable to cooperation rates computed in previous census tests. It is not fully comparable to mail return or response rates calculated for previous censuses. A blank return is defined as a return with fewer than two completed census items (Rothhaas, 2005). Items verified for completeness were tenure, population count, name, relationship, sex, age or date of birth, Hispanic origin, race, and ancestry.

The 1,804 mailing packages (6.4 percent of the sample) returned as UAA or marked vacant are excluded from response rate calculations, shown in Table 2.

Table 2. Mail Response Rates by Panel (calculations exclude UAA and vacants)

	Panel			
	1	2	3	4
Completed questionnaire received by May 19	51.3% (0.6)	50.3% (0.6)	51.6% (0.6)	53.1% (0.6)
Late return (May 19-Aug. 9)	1.5 (0.1)	1.5 (0.2)	1.4 (0.1)	1.3 (0.1)
Nonresponse, blank return, or other	47.2 (0.6)	48.2 (0.6)	47.0 (0.6)	45.7 (0.6)
Total	100.0%	100.0%	100.0%	100.0%
Unweighted N	6621	6630	6647	6678

Response rates do not vary significantly among the first three panels. Panel 4 has a significantly higher response rate than Panel 2 but not Panels 1 and 3 (using Dunn multiple comparison procedure to adjust the critical value of t to 2.4). Analyses below are based on the 13,703 completed questionnaires received by May 19.

A. Does a revised instruction about whom to list as Person 1 reduce errors?

The name of the respondent was requested in the final section, and 94.4 percent of completed forms provided it. If provided, the respondent’s name is compared (first by computer, then clerical review of non-matched cases) to the names of all persons in the household to determine whether the respondent’s name matches any of them. Non-matches indicate that respondents may have inadvertently left themselves off the form due to confusion caused by the wording of the Person 1 instruction, or for other reasons.

Proxy respondents who should not have listed their names as household members are identified by a question in the final section:

“Please mark one box—

I live here

I do not live here, but am filling out this form for someone who does”.

Overall, 1.5 percent of respondents identified themselves as non-household proxies, and 4.7 percent left the item blank. The cases missing respondent’s name and proxy status are excluded

from Table 3, as are another 62 households in which one or more person names (first or last) were left blank, since including such cases might inflate non-match rates.

About 98 percent of forms include the respondent, as shown in Row 1 of Table 3. Rows 2 and 3 show the frequency of two types of error: respondents who say they live in the household but apparently fail to list themselves, and proxy respondents who say they do not live there but include themselves on the form.

Table 3. Percentage of completed forms in which the respondent’s name matches the name of a person listed on the form

	Panel 1 (2000 inst.)	Panel 2 (rev. inst.)	Panel 3 (rev. inst.)	Panel 4 (rev. inst.)
<i>R says s/he lives there, and--</i>				
1. R’s name matches name of a person on the form	98.01% (0.25)	97.94% (0.26)	98.31% (0.23)	98.34% (0.22)
2. R’s name does not match	0.38 (0.11)	0.29 (0.10)	0.25 (0.09)	0.15 (0.07)
<i>R is non-household proxy, and--</i>				
3. R’s name matches a person on the form	0.09 (0.05)	0.16 (0.07)	0.06 (0.04)	0.06 (0.04)
4. R’s name does not match a person on the form	1.52 (0.22)	1.61 (0.23)	1.39 (0.21)	1.45 (0.21)
Total	100.0%	100.0%	100.0%	100.0%
N	3166	3101	3198	3318

In 0.27 percent (s.e. = 0.05) of households overall, the respondent’s name is not listed on the form when it should be (see row 2).⁶ The rate at which respondents left themselves off of Panel 1 forms (Census 2000 wording) does not differ significantly from the rates for Panels 2, 3, or 4 (revised wording), using multiple comparison procedures.

The opposite error, of proxy respondents including themselves in error, appears to be even rarer, occurring in 0.09 percent of households overall (see row 3). The rate at which this occurs also does not vary significantly by panel.

Note that obtaining respondent’s name and proxy status makes it possible to identify omitted respondents. If further evaluation supports their use, routinely including such questions on the census questionnaire should make it possible to correct respondents’ omissions of themselves in about 0.3 percent of households that respond by mail.

⁶This figure may be a bit high. Some respondents who use their middle names may fail to match (e.g., respondent “Ellen Smith” may be the same person as “Mary E. Smith” listed in one of the person spaces).

B. Do final questions about coverage identify or reduce coverage errors?

Several analyses are conducted to assess the performance of the Final Question series:

- Do respondents find and answer the Final Questions about coverage?
- Do the write-in responses describe possible omissions or other coverage errors?
- Based on the results of a coverage follow-up interview, does a “no” answer to FQ1, a “yes” answer to FQ2, or a write-in response to either, identify coverage errors?
- Do the reminders reduce coverage errors?

1. Do respondents answer the Final Questions?

Table 4 shows response distributions to the two final coverage questions. (There is no significant panel difference in response distributions, so Panels 3 and 4 are combined to increase the number of cases.) About 0.5 percent of respondents answered “no” to FQ1 and 2.4 percent answered “yes” to FQ2, indicating a potential coverage problem. Item nonresponse rates were 5 to 6 percent for each question.

Table 4. Response Distributions to Final Questions 1 and 2 (Panels 3 and 4)

	1. Is the number of people for whom you have provided information the same as the number you counted in question 1 ...?	2. Did you leave anyone off the form that you thought about including? ...
Yes	94.5% (0.3)	2.4% (0.2)
No	0.5 (0.1)	91.7 (0.3)
No answer	5.0 (0.3)	5.9 (0.3)
Total	100.0%	100.0%
N	6,974	6,974

Note: One case with both “no” and “yes” marked is included with the “no” responses for FQ1. Four such cases are included with the “yes” responses for FQ2.

Thus, most respondents found and answered the Final Questions, despite their placement at the end of the questionnaire. By comparison, item nonresponse was 7.7 percent for both versions of the undercount question in the 2005 National Content Test. Placing the items on the back page of the questionnaire did not appear to result in more missing data.⁷

To check whether respondents understood that FQ1 was asking about count discrepancies, the rate of actual count discrepancies was compared with respondents’ reports. Of those who

⁷ Moving the telephone number from the front to the back of the form also did not harm response to that item. Between 91% and 92% of households in this test provided a phone number. In the 2005 National Census test, the item was on the front of the form, and 89% provided a phone number.

answered “no” to FQ1, 51 percent actually had a count discrepancy, compared to less than 1 percent of those who answered “yes.” Thus most respondents apparently understood the question, although those who marked “no” even though the counts were consistent may not have, or may have interpreted the question a different way, or may have marked “no” but then corrected the discrepancy.

2. What types of living situations are described by the write-in responses?

Of those who checked “no” to FQ1, 54 percent wrote an explanation in the space provided, as did 91 percent of those who checked “yes” to FQ2. In addition, some respondents provided a write-in response when none was necessary, especially for FQ1. Over half of the write-in responses to FQ1 were provided by people who marked “yes” and should not have written anything. Many were unnecessary explanations that the respondent lived alone.

Although a few write-ins clearly describe people who were omitted or included in error, most are too brief to be certain whether the person described was a Census Day resident or not. Additional information would be required to determine residence status.

Write-in responses can be categorized according to the type of living situation each describes. Results for each question are shown in Table 5.

Table 5. Types of Living Situations Described by Write-In Responses to Final Questions

Type	% of all FQ1 write-in responses	% of all FQ2 write-in responses
1. Mobile or part-time resident	9%	34%
2. Unborn or newborn babies	--	6
3. No space on the form; lacked information about person or didn't want to provide it	9	1
4. Caregiver or nanny	--	2
5. Person in college, military, jail, prison, nursing home, or other group quarters	9	40
6. Pets	--	2
7. Missionary abroad	--	1
8. Someone in nearby apartment	2	1
9. Person who died	--	1
10. Name only	--	2
11. Unresponsive (e.g., “I live alone”) or uncodable write-in	71	10
Total	100%	100%
Unweighted N	56	174

Most (71 percent) of FQ1 write-in responses are irrelevant explanations (e.g., “I live alone”) or uncodable responses (e.g., a number). As noted above, most such responses were provided by respondents who marked “yes” and did not need to write anything. (If people who marked “yes” to FQ1 are excluded from the calculation, then only 25 percent of the FQ1 write-ins are

irrelevant.) Another 9 percent of the FQ1 write-ins explain that there was a count discrepancy because there were not enough spaces on the form, or information was lacking for someone, 9 percent each describe a mobile or part-time resident, or a person in a group quarters situation, and 2 percent describe someone in an adjoining apartment.

Most FQ2 write-ins describe part-time residents (type 1) or people staying in group quarters (type 5).

About a third (34 percent) of FQ2 responses describe people in part-time, mobile or transient living situations that respondents thought of including but did not. This diverse group includes many complex and ambiguous situations known from past research to contribute to census coverage errors, such as:

- custody arrangements—“joint custody my daughter lives with me two days a week,” “2 children for whom mother has primary/legal custody”
- part-time residence—“my daughter who lives here and also in NJ” “my son lives with me about 50 percent of the time” “grandson lives here 1 or 2 nights out of the week”
- moves—“son waiting to move into new home” , “I am having my closing on April 15—selling to the NAME family. I had lived at ADDRESS from Feb./03 to March/06” , “NAME lived here up until 3/2006”
- temporary extended stays (“my niece temporarily staying for the school season” “my son returned home for four months (in April)”
- frequent or regular visitors—“NAME, daughter of Person 1, stays here a lot but doesn’t have full time place” “my boyfriend stays with me most of the time”
- cyclers—“my mother stays with me during the winter months”
- transient lives or lifestyles—“my son is 34 year old. He stay here, there and every where” “daughter who changes households”
- jobs involving frequent travel—“travels all over the country—play in a band”
- visits or stays of uncertain frequency and duration—“the babies’ dad stays but lives elsewhere” “daughter who has her own home is staying in my house now”
- short-term stays or visits—“our friend is leaving before 4/13—just visiting” “she is living here for a short time and will be counted in Oregon’s census”
- temporary absences—“NAME in Philippines for 4 months” “older son temporarily living w/grandparents in another town to be close”
- moves or absences of uncertain duration—“my husband who has not lived here since November 2005 but says returning!” “19 year old daughter moved in with boyfriend (longevity unknown)”

Six percent of FQ2 write-in responses describe unborn children and recent births, including babies born before the April 13th Census Day but not yet home from the hospital (“twin boys in the Neonatal Intensive Care Unit—born April 8th”). Respondents also mention babies due in April who were not born at the time the respondent mailed in the form, but may have arrived before April 13th. Others describe babies due months after Census Day, or born after Census Day, who are not Census Day residents.

One percent describe people who were omitted because the form did not include enough spaces or the respondent lacked or did not want to provide information.

Two percent describe caregivers or live-in employees (“mother of Person 1 who is a live-in nanny for Persons 4 and 5” “person that provide home care for Mr. T”).

Forty percent of the FQ2 write-in responses describe people in group quarters, who should not be enumerated as household residents. 32 percent were college students whom the respondent considered including, but (correctly) left off the form, 4 percent were inmates in jail or prison, 2 percent were in the military, and 1 percent in other group quarters. Because stays in jail may be temporary, some inmates at the time the respondent filled out the form may have been back home by Census Day. For example, “We have a 27 yr. old daughter in jail that lives here sometime” and “Husband is currently in jail” may describe people who were released by Census Day and living in the household. Follow-up would be needed to determine Census Day residence for such people.

Two percent of the FQ2 write-ins describe pets (“Only the dog”) and 1 percent each describe a missionary abroad (“son on a two year mission for LDS church”), someone in a nearby housing unit (“NAME father lives in Apt. 2, same address”), or someone who died before Census Day, none of which are considered residents under census rules.

Finally, 2 percent of the write-in responses provide a name only. (In addition to responses that included only a name, another 13 percent mentioned a name as part of the write-in response.) 10 percent of the FQ2 write-in responses were uncodable or irrelevant.

Thus, 43 percent of the FQ2 write-ins describe types of living situations (categories 1-4) that should be productive for follow-up to identify census omissions: mobile or part-time residents, children in joint custody, newborns, live-in caretakers, and people omitted due to insufficient space on the form. These living situations are known to contribute to census undercounts.

On the other hand, most of the FQ2 write-ins appear unlikely to yield coverage improvements because they describe people in group quarters, missionaries abroad, and pets (45 percent), or because they were unresponsive or uncodable (10 percent). Apparently, the instructions on the form to exclude college students who live away, people in jail or prison, etc., are read and followed by some respondents, even though they consider doing otherwise. The inclusive wording used for FQ2 may have contributed to respondents recording these situations in the write-in space.

3. Do answers to the Final Questions identify omissions and other coverage errors?

In order to determine the productivity of the Final Questions, Coverage Followup interviews were attempted by telephone in all households responding “no” to FQ1, “yes” to FQ2, or providing a write-in response in either of the two final questions. (The households so selected are labeled as “flagged by FQ.”) Using this criterion, 3.7 percent (s.e.=0.2) of Panel 3 and 4 households were flagged for follow-up in CFU. In addition, a random sample of households in all four panels that were not flagged by their responses to the final questions was selected for comparison purposes. Of the 595 cases sent to follow-up, interviews were completed in 487

households, or 81.8 percent⁸. This number includes 140 CFU interviews conducted with randomly sampled households in panels 1 and 2 (which did not include FQ1 and FQ2); they are excluded from analyses. Two groups are compared:

201 completed CFU cases in households flagged by FQ (of 242 households sent to follow-up), and

145 completed CFU cases in households not flagged by FQ (of 176 households in the random sample of panel 3 and 4 cases).

The CFU interviewers did not have responses to the Final Questions available to them when they conducted the interviews. The CFU was designed to follow up households in the 2006 Census Test in Austin TX, which did not include the Final Questions. In that test, follow up interviews were attempted in households that responded positively to the undercount or overcount questions, in large households, and in households with a count discrepancy. (Follow-up interviewers did not have information about respondents' answers to undercount or overcount questions available, either.)

Thus, interviewers were “blind” to the experimental treatment; they had no way of knowing whether they were interviewing flagged or not-flagged cases, or what situation led the household to be followed up.

In the CFU, interviewers requested an interview with the person who filled out the census form, or (if unknown) with the person listed as Person 1 on the census form. In households flagged by the FQ, the same procedure was followed, except an interview was requested with the person listed on the form as the respondent rather than with Person 1. In this study, 92.0 percent of the CFU interviews were conducted with the original mail respondent.

CFU procedures called for the interviewer to review with the respondent the list of persons who had been recorded on the census form for that household. Probes were given to identify people who might have been missed, including—

- Any newborns or babies
- Any foster children
- Any non-related children
- Any other non-relatives who lived or stayed here
- Any non-relatives, roommates, or boarders
- Anyone else who stayed here often
- Anyone else who had no other place to live

These questions were used to identify potential adds: people not listed on the original census roster who should be added, if further questioning determines they were residents on Census Day. CFU also included extensive questions to identify other residences and group quarters stays, in order to identify people who had been enumerated in error and delete them from the household roster.

⁸ One completed CFU case that does not appear on the Westat datafile is dropped from analysis, leaving 486 completed cases.

In order to determine whether the Final Questions identify households with missed or erroneously enumerated people, Table 6 compares the fraction of households in which people were added or deleted as a result of CFU, in flagged and non-flagged households.

Table 6. Percentage of flagged and non-flagged households with added or deleted persons in CFU (Panels 3 and 4)

Household	% with one or more people added	% with one or more people deleted	N
Flagged by FQ	4.5% (1.3)	7.0% (1.8)	201
Non-flagged random sample	0.7% (0.7)	2.8% (1.4)	145

Table 6 shows that 4.5 percent of households flagged by the FQ had a person missing (according to CFU) compared to 0.7 percent of those in the random sample of non-flagged households ($t=2.581$, $p<.01$). Calculation of odds ratios shows that the odds on adding a person were 6.8 times greater in flagged households than in non-flagged households⁹. The odds of deleting a person was 2.6 times greater in a flagged households ($t=1.866$, $p<.10$);. Thus, the Final Questions were useful for identifying households in which people had been missed or erroneously enumerated.

The criterion for flagging households for CFU follow-up was as inclusive as possible—a “no” response to FQ1, or a “yes” response to FQ2, or a write-in response to either question. As noted earlier, most write-in responses for FQ1 were unnecessary explanations provided by respondents who checked “yes” to FQ1, and whose responses did not indicate a coverage problem. Refining the criterion to exclude them might improve the performance of the Final Questions as a targeting tool.

A narrower rule might target households responding “no” to FQ1 or “yes” to FQ2, without considering the write-in response, if any. Using this rule, 2.9 percent (s.e.=0.2) of Panel 3 and 4 households would have been selected for follow-up (thus significantly reducing the follow-up workload; $t=7.367$, $p<.001$). Comparing Tables 6 and 7 shows that the narrower rule improves the selection of households for follow-up: 5.6 percent of households selected using this rule produce adds, compared to 4.5 percent using the broader rule ($t=3.057$, $p<.01$) and 8.1 percent produce deletes, which is not significantly different from the 7.0 percent rate in Table 6. Larger samples would be required to refine and evaluate selection criteria to achieve the most efficient follow-up using these questions.

⁹ The odds ratio is equivalent to the cross-product ratio calculated by Linse et al. to evaluate the efficiency of two versions of the undercount question. They report that Version 1 produced a cross-product ratio of 6.8, while version 2 produced a cross-product ratio of 3.3.

Table 7. Efficiency of an alternative rule for targeting households for follow-up: Percentage of households with added or deleted persons in CFU (Panels 3 and 4)

Household	% with one or more people added	% with one or more people deleted	N
FQ1 = “no” or FQ2 = “yes”	5.6% (1.6)	8.1% (2.2)	161
Non-flagged random sample	0.7% (0.7)	2.8% (1.4)	145

The odds of CFU adding someone are 8.4 times greater, and of deleting someone 3.1 times greater, in households flagged by this alternative rule compared to the non-flagged random sample ($t=2.789$, $p<.01$ and $t=2.088$, $p<.05$, respectively).

As described earlier, FQ1 and FQ2 target different sorts of coverage errors and separately would be expected to lead to different outcomes in CFU. Households in which respondents marked “no” to FQ1 are expected to have higher rates of both adds and deletions in the CFU, while “yes” responses to FQ2 are expected to lead to a higher rate of adds only. Consistent with this expectation, CFU deleted someone in 21.4 percent of households responding “no” to FQ1, which is significantly greater than the 5.2 percent deletes in households responding “yes” to FQ2 ($t=2.018$, $p<.05$). The latter rate does not differ statistically from the 2.8 percent rate of deletes for the non-flagged random sample.

Rates of adds do not differ between households responding “no” to FQ1 or “yes” to FQ2.

Table 7 implies that, of the 2.9 percent of households flagged using the narrower rule, 5.6 percent added someone in CFU—in other words, omissions were corrected in only 0.2 percent of households. This is disappointingly low.

Several explanations may account for the low rate of CFU adds in flagged households:

1. Detailed questioning in the CFU may have determined that most of the people described in the write-in responses were not Census Day residents. (The inclusive wording of FQ2 may have encouraged respondents to describe many non-residents.)
2. The CFU may have failed to identify potential residents described in the write-in responses.
3. Some respondents may have added the person described in the write-in to the form after the fact. If so, it would make sense that CFU did not identify the person as a possible add, because s/he was already on the form.

To shed light on these possible explanations, we examine in detail responses to the Final Questions, and their outcomes in the CFU.

Examination of FQ1 responses. Since the number of FQ1 cases is so small, it is more illuminating to examine them case-by-case than to treat them statistically.

Table 8 presents the verbatim write-in responses to FQ1 for all cases in which FQ1 was marked “no,” an FQ1 write-in response was provided, and a CFU interview was conducted. Columns 1-

3 present the type of living situation (using the same categories as Table 5), the number of people reported in Question 1, and number of people for whom information was provided (i.e., number of data-defined people) in the mail questionnaire. Note that in 14 of the 15 cases, there is a discrepancy between these two numbers, suggesting that the respondent understood the question and correctly marked “no.”

Three types of living situations predominate among the write-in responses: mobile or part-time residents (type 1), no space on the form (type 3), and someone staying in a group quarters (type 5). The remaining responses are miscellaneous situations or unresponsive answers (discussed below).

Columns 4-6 in Table 8 present the number of possible adds (p), final adds (a), and deletes (d) in the CFU, allowing us to track how each case was resolved.

Table 8. Anonymized Write-in responses to FQ1, by type, with Q1 count and number of data-defined people, possible adds (p), adds (a), and deletes (d) in CFU

(5) Obs	(6) Type*	(1)	(2)	(3)	FQ1 write-in response	(4)		
		Q1 count	# ddp	p		a	d	
1	1	07	8	THESE ARE MY CHILDREN &NOT xxxxxx SOMETIME STAY WITH ME OFF AND ON .	0	0	0	
2	1	00	2	THIS IS A SEASONAL SECONDARY HOME	0	0	2	
3	1	02	2	xxxxxxxxxxxxxx -SON OF xxxxxxxxxxxxxxxxxxxxxxxx DRIVES ACROSS COUNTRY-TRUCKING	0	0	0	
4	1	04	5	xxxxxx LIVES HERE 4 OUT OF 12 MONTHS	0	0	1	
5	3	12	10	YOU ONLY PROVIDED 10 SPACES & WE HAVE 12 PEOPLE	2	2	0	
6	3	11	10	NO MORE SPACE FOR NAME	0	0	0	
7	3	05	4	ONE ROOMATE NEVER FILLED IT OUT IN TIME	0	0	0	
8	3	03	2	DIDN'T WANT TO FILL OUT	0	0	0	
9	5	03	4	HUSBAND IS DEPLOYED WITH MILITARY NOT LIVING WITH US	0	0	2	
10	5	02	3	COLLEGE SON	0	0	1	
11	5	03	4	NO.4 ATTENDS COLLEGE AWAY FROM HOME	0	0	1	
12	5	05	7	IT SAID TO EXCLUDE COLLEGE STUDENTS SO I DIDN'T COUNT HIM BUT HE LIVES	0	0	2	
13	8	14	10	I HAVE A 3 FAMILY HOME W/TENANTS	4	4	0	
14	11	04	3	SEE #2 (BELOW)	0	0	0	
15	11	58	1	I HAVE APARTMENT IN THIS ASSISTED LIVING	0	0	0	

*Type 1= part-time or mobile resident, 3=no space, 5=GQ, 8=another apt., 11=unresponsive, uncodable, unknown.

Of the four type 1 (part-time/mobile resident) observations, two (1 and 3) are ambiguous. For observation 1, it is tempting to suppose that the child who “sometime stay with me off and on” was added as the eighth person on the form, creating a discrepancy with the count of seven the respondent provided in Question 1. But his name does not appear on the form, so he is not the cause of the count discrepancy, and he was not identified in the CFU as a possible add. There was no count discrepancy for observation 3, but in the write-in the respondent describes her son (a trucker) who may or may not have had a usual residence elsewhere. He was not identified as a possible add in the CFU.

The write-in response of “seasonal secondary home” for observation 2 seems clear enough, and CFU properly deleted 2 people from this roster. For observation 4, the respondent included her brother-in-law on the form, but not in the Question 1 count, noting that he lived there 4 of 12 months. He was deleted by the CFU.

The four type 3 (“no space”) responses (observations 5-8) all appear to be straightforward omissions: one or more people were included in the Question 1 count but left off the form due to space limitations or lack of cooperation from the person involved. Although such cases should be easy to correct, only one of the four was identified and corrected in CFU.

The four type 5 (“group quarters”) responses were all cases of someone at college or in the military who was included on the form, but not in the Question 1 count. These cases are interesting in that respondents seem to have properly followed the instruction to exclude college students (etc.) in Question 1, but could not resist putting them on the form, because they “belong” in the household (see, for example, the write-in response for observation 12). These all appear to be straightforward cases of erroneous enumeration, and CFU deleted the “extra” people (and some additional people) in all four households.

Two other cases are of interest: a respondent who reported she had a three family home with tenants, in which CFU added four people, and a respondent who in Question 1 reported 58 people, evidently all of the people in the assisted living facility in which she lived alone in an apartment. She apparently misunderstood the intent of Question 1, but correctly provided information only for herself in the form.

Although it would be unwise to draw any conclusions from the small number of cases, the results are suggestive. The responses to FQ1 appear mostly to reflect a good understanding of the question intent and to describe situations that are potential coverage errors and should be productive for follow-up. The CFU appears to have identified and resolved most erroneous enumerations appropriately, but failed to identify and correct omissions in three households due to lack of space on the form or an uncooperative person. These omissions are particularly troubling, since they account for 3 of the 15 cases.¹⁰ Such count discrepancies should be easy to identify and resolve. In addition, two of the ambiguous type 1 cases should have been identified as possible adds but were not. CFU appears to have done a better job of correcting erroneous enumerations than omissions in this small set of households.

If we correct for the overlooked omissions in the three “no space” households, the rate of CFU adds more than doubles, from 7.1 percent (s.e.=4.9) to 17.9 percent (s.e.=7.3) in households

¹⁰ Note, however, that the two 11- and 12-person households could have been accommodated on a standard short form that includes a continuation roster for persons 7-12.

flagged by a “no” response to FQ1 ($t=1.83$, $p<.10$). The rate of deletes in these households is 21.4 percent (s.e.=7.8), as reported above. Thus, a “no” response to FQ1 identified both omissions and erroneous enumerations in followup. A write-in response to FQ1 in the absence of “no” was not useful for identifying households in which coverage errors had occurred.

Examination of FQ2 responses. As noted above, FQ2 was intended to identify people who may have been left off household rosters so they could be followed up and corrected in the CFU. Table 9 summarizes the fraction of households in which CFU identified one or more possible or actual adds, within households flagged by FQ1 and FQ2, and within two groupings of write-in responses to FQ2. Types 1-4 describe potential “residence situations” (see Table 5) and are grouped together, as are categories 5-9, which describe “non-residence situations.” For most, more detailed questioning would be needed to determine whether the people described were Census Day residents or not.

The CFU outcomes help us evaluate alternative explanations for the low rate of adds in CFU. If CFU identified many potential adds but added few, that would suggest that most of the people described turned out not to be residents, perhaps because the question was too inclusive. If CFU identified few possible adds, that suggests that CFU failed to identify potential missed residents.

Table 9. CFU Adds and Possible Adds in Households Flagged by FQ (Panels 3 and 4)

Response to FQ	% with possible adds	% with adds	N
“No” to FQ1 (“Is the number of people for whom you have provided information the same as the number you counted in Q1...?”)	7.1% (4.9)	7.1% (4.9)	28
“Yes” to FQ2 (“Did you leave anyone off the form that you thought about including?”) or write-in and	16.7% (3.1)	4.7% (1.7)	150
--write-in describes a residence situation (types 1-4)	22.4% (5.5)	8.6% (3.7)	58
--write-in describes a non-residence situation (types 5-9)	15.6% (4.7)	1.6% (1.6)	64
-- write-in is missing or uncodable, or gives name only	7.1% (5.0)	3.6% (3.5)	28
Not flagged by FQ	2.8% (1.4)	0.7 (0.7)	145

Note: Cases in which FQ1 was marked “yes” or left blank but a write-in was provided are not included.

FQ2 write-ins coded as “residence situations” are associated with a significantly elevated rate of possible adds in CFU—22 percent, compared to 7 percent for irrelevant or name-only responses and 3 percent for households not flagged by the FQ. 62 percent were weeded out by the CFU residence questions, however, so the final rate of adds was 9 percent. This is significantly higher

than the add rate for write-ins coded as “non-residence situations,” missing or uncodable write-in responses, or unflagged households.

Write-ins coded as “non-residence situations” were also associated with a significantly elevated rate of possible adds in CFU. A larger fraction (about 90 percent) were weeded out as non-residents, so the final rate of adds was less than 2 percent. This rate does not differ significantly from non-flagged households.

These results make sense. Write-ins that described someone the respondent thought of including led to an elevated rate of possible adds in the CFU, whether the person was in a “residence situation” or “non-residence situation.” But very few people in “non-residence situations” survived CFU questioning to be added to census rosters.

The categorization by type of living situation predicts the CFU outcome, with write-ins coded as “residence situations” producing missed residents than those coded as “non-residence situations,” as one would expect. Even so, many possible adds were ultimately determined to be non-residents, perhaps reflecting the over-inclusiveness of FQ2.

In addition, CFU identified only 22 percent of the people in “residence situations” as possible adds. This result suggests that CFU failed to identify a substantial number—over three-quarters—of potential missed residents. (The 90 percent confidence interval includes 68.6 to 86.6 percent of this group not identified in CFU.) An effective coverage follow-up should identify many, if not most, of the people described in these write-in responses, even if subsequent CFU questioning determines they were not Census Day residents. A rate of 22 percent seems much too low for a coverage follow-up interview that is intended to correct omissions as well as erroneous enumerations in the original household roster.

Possibly, some respondents added the person to the form after answering FQ2. If the person was already on the form, he or she would not be identified as a possible add in CFU. Household rosters and responses to FQ2 were reviewed to assess this possibility. In three instances (observations 30, 98, and 111 in Appendix B) and possibly a fourth (39), the person described in the FQ2 write-in was included on the form. Two describe people in college and a nursing home, so this explanation accounts for very few of the cases in which CFU did not identify people in residence situations.

Thus, the results suggest that the first and second, but not the third, of the explanations offered on p. 25 contribute to the low rate of CFU adds.

So that the reader can make his or her own judgments about whether CFU should have identified more of the people described in the write-in responses as possible adds, Appendix B lists the anonymized, verbatim write-in responses to FQ2, ordered by type of living situation. To the right of each write-in response is listed the number of possible and actual CFU adds in that household. The reader will note that a few write-ins seem clearly to describe Census Day residents who should have been enumerated in the household¹¹, most describe non-residents, and

¹¹Examples are observations 5, 36, 46, 53, 56 in Appendix B. CFU identified a possible add in one of these five households. Two independent coders agreed that 6% of the FQ2 write-ins describe Census Day residents.

a large fraction (41 percent according to one expert coder) are ambiguous, and may or may not describe a person who was left off the original census roster in error.¹² To determine if the people described should be added to household rosters, they first must be identified as possible adds in CFU so that questions can be asked to determine their status as Census Day residents or non-residents. Thus, it is problematic that so many of those in “residence situations” were not identified.

Research is needed to better understand the extent and reasons why CFU identified few of the part-time residents and mobile people, recent births, “no space on the form” cases, and caregivers described in the write-ins. Recall error may contribute, and it has been suggested that interviewers do not record people that respondents mention tentatively in the course of the interview. Some of the people may not be considered “family” and may not be reported in response to conventional probes. Research shows that more marginal or transient residents are mentioned only after extended probing and cues (Martin, 2007). Perhaps the roster probes are not probing enough, or were not fully administered by interviewers. Behavior coding also suggests that some respondents do not understand the task of the CFU interview (they think it is intended to update the census roster), while others do not understand the purpose of the follow-up, or suspect it is done for ulterior motives (Davis and Pendzick, 2003). Dependent questions that probe the situation reported in the Final Questions might improve the performance of the CFU, as discussed under Recommendation B1, below.

4. Does the final coverage check reduce errors?

The Final Question series asked respondents to review their answers to be sure they provided information about everyone living in the household on April 13, and reminded them of people who might be missed, such as “yourself..., new babies, or temporary guests with no other place to live.”

- a. Omitted respondents. As shown in Table 3, the rate at which respondents apparently left themselves off the household roster in error does not vary significantly among panels. In particular, panels 3 and 4 (with reminders) do not differ significantly from panels 1 and 2 (without reminders). (Panel 4 has half the error rate of the other panels, and this difference is marginally significant; $t=1.766$, $p<.10$.)
- b. New babies. Table 10 shows the percentage of data-defined people who were new babies, by panel. (For this analysis, “new” babies are arbitrarily defined as those born in 2006, who would have been 4 months old or less at the time respondents filled out their forms. Estimates are reported to two decimal places, since both rates and standard errors are small.)

¹² Examples of ambiguous situations are observations 1, 4, 13, 19, 24, 26, 27, 28, 35, 37, 41, 43, 44, 45, 49, 54, 57 in Appendix B. In these 17 households, CFU identified possible adds in 6.

Table 10. Percentage of Data-Defined People who are New Babies, by Panel

	Panel 1 (no reminders)	Panel 2 (no reminders)	Panel 3 (reminders)	Panel 4 (reminders)
New baby born in 2006	0.23% (0.053)	0.26% (0.056)	0.31% (0.063)	0.37% (0.066)
All other people	99.77 (0.053)	99.74 (0.056)	99.69 (0.063)	99.63 (0.066)
Total	100.00	100.00	100.00	100.00
<i>Unweighted N</i>	8,125	8,085	8,350	8,543

Note: In 14 households, the flag that identified data-defined people was not applied. 17 people are not included from this table.

Panels 3 and 4 both remind respondents to include new babies, but only Panel 4 elicits a marginally significant higher fraction of new babies compared with the control ($t=1.67$, $p<.10$), probably due to the later timing of the questionnaire mailing in Panel 4. Babies born just before Census Day, or just home from the hospital, may be more likely to be included when the questionnaire is filled out closer to Census Day.

c. Discrepancies between number of person spaces filled and the population count reported in Question 1.

Final Question 1 asked, “Is the number of people for whom you have provided information the same as the number you counted in question 1 on page 1?” This question was intended to stimulate respondents to review the form and check whether they had answered questions for each person they counted in question 1. Although they were not explicitly instructed to do so, reviewing their answers might lead respondents to make corrections to eliminate the discrepancies. If so, the rate of count discrepancy should be lower for Panels 3 and 4 than for Panels 1 and 2.

Table 11 shows there are no significant differences among panels in the fraction of forms with a count discrepancy. Moreover, most respondents (62 percent) whose forms actually contained a count discrepancy erroneously answered “yes” to FQ1, suggesting they did not bother to check the consistency of the information they had provided, or perhaps did not understand the question.

Table 11. Discrepancies between the Count provided in Question 1 and the Number of Data-defined People, by Panel

	Panel 1 (no FQ)	Panel 2 (no FQ)	Panel 3 (FQ)	Panel 4 (FQ)
No count discrepancy	94.6% (0.4)	94.2% (0.4)	95.4% (0.4)	96.0% (0.3)
Q1 not equal to number of people on the form	1.4 (0.2)	1.1 (0.2)	1.3 (0.2)	1.1 (0.2)
Q1 left blank	4.0 (0.3)	4.7 (0.4)	3.3 (0.3)	2.9 (0.3)
Total	100.0%	100.0%	100.0%	100.0%
N	3391	3330	3427	3538

Note: 14 households for which the flag to identify data-defined people was not applied are dropped from this table.

d. Completeness of data.

The item nonresponse rate for Question 1 is significantly lower in panels 3 and 4 compared to panels 1 and 2. (Question 1 was left blank in 4.3 percent of forms in panels 1 and 2, compared to 3.1 percent in panels 3 and 4; $t=3.8$, $p<.001$.) This suggests that the Final Questions stimulated respondents to look back at Question 1 and in some cases to fill it in when it had been left blank.

e. Other errors.

In a small number of cases (perhaps four), the person described in FQ2 as having been left off the form nevertheless was included, suggesting the respondent went back and added the person after filling out the final questions. In two instances the person who was added should not have been (a college student in one case, and a spouse in a nursing home in another), introducing errors. Evaluations of the undercount questions have similarly observed some respondents changing their answers, or adding people, as a result of answering the coverage questions.

C. Do a deadline and compressed mailing schedule improve mail response?

As shown in Table 2, Panel 4 (with a deadline and compressed schedule) obtained a higher response rate than panels with no deadline and the traditional schedule.

A total of 53.1 percent of Panel 4 households returned their completed forms by May 19, compared to 51.1 percent of households in Panels 1-3 (combined), for a difference of 2.0 percentage points ($t=2.885$, $p<.01$).

There appear to be fewer late returns for Panel 4, but the difference is not significant. This test is not a good source of information about the effects of a deadline on the speed of return, since mail returns had to go through the Census Bureau's mail room, including the irradiation process.

The response rate difference is also significant when late returns are included. The response rate including late returns is 54.3 percent in Panel 4, compared to 52.5 percent in Panels 1-3, for a difference of 1.8 percentage points ($t=2.574$, $p<.02$).

Thus, it appears that overall response rates were improved by the combined effect of a deadline and compressed mailing schedule.

It does not appear that the higher response rate comes at the expense of data quality. As shown in Appendix A, item nonresponse rates for tenure, race, Hispanic origin, and sex do not vary significantly among panels. Panel 4 has significantly lower item nonresponse than the control for Question 1, and is associated with slight but significant improvements in coverage. It includes more new babies (see Table 10), and respondents are less likely to leave themselves off the form (see Table 3 and discussion in section 4.a).

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Person 1 Instruction

There is no evidence that the revised wording of the instruction about whom to list as Person 1 had any effect on the frequency with which respondents erroneously left themselves off the form. The results do not provide a basis for preferring either wording of the instruction. Note that this test is extremely limited: because there was no reinterview, we do not know how often each instruction enabled respondents to select Person 1 correctly.

The absence of a clear result leaves us in the unfortunate position of having only cognitive test results as a basis for recommending a preferred wording for this instruction. The various wordings that were tested, and the findings from cognitive tests, are summarized in Appendix C.

Recommendation A1. Adopt the revised wording for the Person 1 instruction.

In this test, it performed as well as the wording used in Census 2000, in terms of any impact on a suspected coverage error (i.e., respondents leaving themselves off the form). It did not cause confusion in cognitive testing (see revision 5, Appendix C), whereas all other wordings caused confusion in at least one test.

Recommendation A2. Conduct further research to develop an improved instruction or method for identifying the householder.

Although respondents' leaving themselves off the form appears to be a rare error, it merits further research to determine whether it can be reduced or eliminated. If as many as 0.3 percent of respondents incorrectly leave themselves off their census forms, as suggested by these data,

the consequence would be a sizable number of omissions (243,000, assuming 90 million households mail back their forms in 2010). The results do not provide a basis for inferring whether the Person 1 instruction is the culprit in causing this error. However, it is worth noting that pretests of five different wordings of the instruction continue to point to the instruction as a source of confusion.

Possibly, the criteria for selecting Person 1 are too complicated to clearly explain in a few sentences on a self-administered form without causing confusion and errors. If so, that would point to the need for a new method or a new concept that can be more readily operationalized or explained.

Any research should include a reinterview or other evaluation to determine if respondents are selecting Person 1 correctly, which this test was unable to do.

Recommendation A3. Retain questions to capture respondent’s name and proxy status and evaluate their use for coverage improvement.

Having the census respondent’s name facilitates coverage follow-up interviews, and helps ensure compliance with the Respondent Identification Policy (U.S. Census Bureau, n.d.).

Information from these questions can be used to identify respondents who omitted themselves, a coverage error that has been observed in many cognitive tests but not previously confirmed in a mailout test. In this test, this mistake affected as estimated 0.27 percent of households that mailed back forms, which would represent 243,000 omissions if the problem occurred at the same rate in the 2010 census. Although this mistake would seem to be a simple one to correct, there is no evidence in this study that a reminder to “include yourself” reduced its frequency. Requesting respondent’s name and proxy status would make it possible to check directly for such errors, and follow up if necessary.

Requesting telephone number as part of the Final Question series may obtain slightly more complete information than when the item appears on the front of the form (8 to 9 percent in this test versus 11 percent item nonresponse in the NCT), thus facilitating telephone follow-up. Placement at the end also is consistent with standard survey practice of asking more sensitive items last.

B. Final Questions

Most respondents (94-95 percent) found and answered the two Final Questions pertaining to coverage. About 0.5 percent marked “no” to FQ1 (“Is the number of people for whom you have provided information the same as the number you counted in question 1...?”) and 2.4 percent marked “yes” to FQ2 (“Did you leave anyone off the form that you thought about including?”), indicating a possible coverage error.

In the 3.7 percent of households in which respondents marked “no” to FQ1, “yes” to FQ2, or provided a write-in response to either question, a coverage follow-up interview was attempted to

identify errors in the census roster. Interviews were also attempted in a random sample of not-flagged households. CFU added people in 4.5 percent of the households flagged by the FQ, compared to 0.7 percent of the random sample not flagged. CFU deleted people in 7.0 percent of the households flagged by FQ, compared to 2.8 percent of non-flagged households. Thus, the questions discriminate between households in which a follow up interview is productive from those in which it is much less so, particularly for omissions.

The efficiency of targeting follow-up using the FQ may be improved if the criterion is narrowed to exclude cases in which a write-in response was provided even though FQ1 was marked “yes” (or left blank); most of these did not indicate a coverage error.

Table 12 compares the efficiency of the FQ and two versions of the undercount question (UQ) tested in the 2005 National Content Test. (See footnote 4 for question wording.)

Table 12. Percentage of households in which one or more persons was added in CFU using three alternative questions to flag households for coverage follow-up

	UQ1	UQ2	FQ	FQ (narrower criterion)
Flagged households	11.4% (1.2)	5.9% (0.6)	4.5% (1.3)	5.6% (1.6)
Non-flagged households	1.8% (0.1)	1.8% (0.1)	0.7% (0.7)	0.7% (0.7)
Odds ratio	7.1	3.4	6.8	8.4
Percentage of households flagged	2.8% (0.1)	6.4% (0.1)	3.7% (0.2)	2.9% (0.2)

Source: Tables 29-31, following tables 58 and 60 in Linse et al. (2007).

Although the FQ identified fewer CFU adds, its efficiency (as measured by the odds ratio) is comparable to UQ1, the preferred version of the undercount question. Using a narrower criterion significantly improves the efficiency of the FQ, as discussed in section V.B.3.

It appears that there is a lower rate of CFU adds for both flagged and non-flagged households in this study than in the 2005 NCT; this difference might reflect differences in the sample frame, or possibly there are differences between 2005 and 2006 CFU procedures. Response rates are comparable (Linse et al., 2007).

In both the NCT and this study, the FQ or undercount questions are not performing as well as hoped. In the NCT, a “yes” response to the undercount question identified only 14 percent (for version 1) and 16 percent (for version 2) of the omissions identified by the CFU (Linse et al., 2007). In this study, the low rate of CFU adds in flagged households meant an improvement in only 0.2 percent of households, a disappointing result.¹³

¹³ A follow-up rather similar to CFU, the “Census Taker Coverage Check” similarly led to extremely modest improvements in coverage of missed people—it added 0.2% to the population counts in the North Philadelphia tracts where it was tested in 1968 (Jones, 1968).

A detailed examination of the write-ins and their outcomes in the CFU was undertaken to explain the low rate of adds in households flagged by the FQ. Part of the explanation is that the inclusive wording of FQ2 resulted in many write-ins describing people whom the respondent thought of including but correctly left off the form, such as children away in college. Thus, most potential adds turned out to be non-residents after more detailed questioning about their residence in the CFU.

Another, unexpected reason is that CFU failed to identify as potential adds most of the people described in the write-in responses. Even among people whose living situations were coded as a “residence situations,” only 22 percent were identified as potential CFU adds, and 9 percent were added. This suggests that CFU is failing to identify a substantial fraction of true census omissions. The magnitude of the problem is unknown, because without asking the detailed CFU residence questions, we do not know how many would turn out to be Census Day residents.

This result may help explain why the performance of undercount questions in some census tests has been disappointing, since CFU results have provided the standard for evaluating their performance.

There is no evidence that the coverage check and reminders provided in the Final Question series reduced coverage errors. The frequency with which respondents were left off the form, new babies were included, and counts were discrepant did not vary significantly between panels with the Final Questions and those without. It does appear that Final Question 1 may have stimulated respondents to look back at Question 1 and in some cases fill it in when it had been left blank.

Recommendation B1. Revise the CFU instrument to better identify possible omitted residents within households.

The most urgent recommendation to emerge from this study arises from the unexpected finding that the CFU failed to identify as possible adds most of the potential residents described in the write-in responses to FQ2. CFU is intended to cast a “broad net” to identify all potential census omissions, but the results of this study suggests that it does not do so.

CFU may better identify omissions if it includes more *dependent questions* that incorporate information provided by respondents in response to the undercount question or the FQ. Interviewers can do a better job of probing for omissions if they have available information about people who may have been missed and situations that gave rise to the follow-up interview. For example, with even minimal information, it should be a simple matter for interviewers to correct omissions due to lack of space in the form (e.g., see FQ1 observations 6, 7, and 8 in Table 8). Follow-up questions should be framed to probe the situations (or types of situations) respondents report on the mail questionnaires.¹⁴

¹⁴ For example, when the number reported in Question 1 exceeds the number of spaces available on the form, the interviewer might be prompted to say, “On your form, you wrote that N people lived in your household, but the form did not contain space for all of them. I’m calling to get information about the rest.”

Standard probes that incorporate respondent-provided information about possible coverage problems or missed people should be added to CFU. A dependent question could be designed to incorporate information from any of the current versions of the undercount question, including Final Questions 1 and 2. The open-ended responses elicited by FQ1 and 2 may provide more effective stimulus to recall than answers provided to closed questions; this issue should be researched. Dependent questions could be administered after CFU, as debriefing questions designed to evaluate CFU (see below), or as an integral part of the rostering process.

Recommendation B2. Evaluate CFU before making a final decision on its implementation in the 2010 census.

The rate at which CFU identified possible missed residents described in the write-ins in this study is unacceptably low for an operation that is intended to correct omissions as well as erroneous enumerations on census rosters. Research is urgently needed to better understand why the CFU failed to identify most of the mobile and part-time residents, new babies, and other possible residents described by the write-in responses. Interviewer behavior, recall error, and lack of respondent motivation or understanding of the reason for the follow-up interview have all been suggested as possible explanations.

One source of data with which to assess CFU would be a dependent debriefing question asked at the very end of the instrument, that reminds respondents of the answer they gave to the undercount question, and probes to determine the name of the person they were thinking of.

Another source is behavior coding to determine whether interviewer behavior (specifically, failing to record marginally present people that the respondent mentions, or failing to ask all the roster probes) contributes to a failure to identify people who potentially should be included.

If CFU does a good job of identifying erroneous enumerations but a poor job of identifying census omissions, it is biased. Its impact depends on the balance of erroneous enumerations and omissions in the census. If erroneous enumerations are far more numerous than census omissions, then a biased CFU might yield a more accurate census (i.e., fewer gross coverage errors, and a smaller net error). However, if the number of omissions equals or exceeds erroneous enumerations, then a biased CFU will contribute to net census undercounts (it might still reduce gross errors), and the better it does at identifying erroneous enumerations, the worse the net undercount will be.

Recommendation B3. Further develop and test the Final Questions (and other versions of the undercount question) in the 2010 experimental program.

This experiment shows mixed results for the Final Question series. On the positive side, placement on the back of the form worked; 94-95 percent of respondents found and answered the questions. Additionally, the write-in responses (although too brief to determine Census Day residence in many cases) describe the types of living situations known to cause omissions and other coverage errors. The questions elicit reports of the types of problematic coverage situations that the Census Bureau struggles to identify and correct in its surveys and censuses.

Also positive is the finding that the Final Questions discriminate between households in which a coverage follow-up interview is productive from those in which it is much less so; its efficiency is comparable to the preferred version of the undercount question.

On the negative side, only 5.6 percent of the households flagged by the FQ (using a narrow rule) added someone, and 8 percent deleted someone. The low rate of adds is particularly disappointing, since identifying omissions was an important goal of the series. There is no evidence that the reminders in the Final Question series lead to coverage improvements, but the sample was too small on which to base any firm conclusions about coverage effects. Finally, the wording of FQ2 may be too inclusive, since it invites mentions of non-residents as well as residents who were left off the form.

Further development of the Final Question series might fruitfully be pursued with one, or both, of two objectives in mind. First, as an evaluation tool, the series provided useful feedback about the performance of the CFU that might be used to improve the CFU instrument, and evaluate how well CFU is identifying possible adds. Second, as a component of a coverage improvement operation, the Final Question series in conjunction with an improved CFU might lead to improved identification of omissions within households. The open-ended Final Questions have some advantages compared to the closed undercount questions currently being implemented in the Dress Rehearsal. One advantage is that the write-in response describes a specific situation that a CFU interviewer could use to probe for a missed person or other coverage error. The respondent's own words would be a more effective stimulus to recall than the response selected in a closed version of the undercount question. A second advantage is that a write-in response may provide sufficient information to allow interviewers to field-code certain obvious non-residents (e.g., pets, kids in college) without conducting an interview.

Thus, the Final Questions tested here might work well in conjunction with the CFU follow up. However, the integration of an open-ended response with a dependent question in CFU would require further development and testing before being implemented on a large scale.

If these questions are further developed and tested, consideration might be given to rewording FQ2 to make it less inclusive. Half of the write-in responses describe people and situations that should not be included on a census form. However, it may be necessary to ask an inclusive question to get respondents to mention people they do not think of as belonging in their households, so cognitive and field testing of alternative wordings is warranted. It might also be useful to provide more space for write-in responses, and/or to ask for additional items of information in FQ2. The Statistics Canada version of the question requests the name and relationship of the person omitted (see Fig. 1). Name, in particular, would facilitate a coverage follow-up interview. In this test, 15 percent of responses provided a name, even though it was not requested.

It would also be very useful to exchange results and experiences with Statistics Canada, which has implemented a similar question in its 2001 and 2006 censuses.

C. Due date combined with a compressed mailing schedule

Deadline messages in the mailing pieces, combined with a later mailing schedule (mailings were a week later than the conventional schedule) obtained a higher mail response rate by 2.0 percentage points. Data quality was not negatively affected; in fact, several measures of coverage and completeness showed significant improvements.

Recommendation C1. Consider implementing a deadline, along with a compressed mailing schedule. If not feasible, evaluate them as part of the 2010 experimental program.

Giving people a deadline and a shorter interval (by one week) in which to complete the form leads to a higher rate of mail response.

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APPENDIX A: Selected Item Nonresponse Rates by Panel

Item	Panel 1 (Control)	Panel 2	Panel 3	Panel 4
Household level				
Question 1	4.0%	4.7%	3.3%	2.9%**
Tenure	2.1%	2.7%	2.5%	2.4%
Respondent's name	5.6%	5.9%	5.6%	5.2%
Telephone number	8.9%	9.0%	8.8%	7.9%
Respondent's proxy status	5.5%	5.5%	4.0%**	3.7%**
Person Level				
Age	2.2%	2.4%	2.4%	2.0%
Hispanic origin	2.1%	2.2%	2.4%	2.4%
Race	3.0%	3.3%	2.9%	3.0%
Sex	1.1%	1.0%	1.3%	1.2%

**Significantly different from control panel (p<.05).

Note: Figures represent percentage of cases in which item was left blank, based on unedited data. In 14 households, the flag that identified data-defined people was not applied. 17 cases in those households are dropped from this table.

APPENDIX B. Anonymized Verbatim Write-In Responses for FQ2, by Type

(with number of possible adds (p) and adds (a) in CFU; unresponsive and name-only responses are not included)

Obs	Type	FQ2 write-in response	p	a
1	1	CUSTODY ARRNGEMENT-1	0	0
2	1	MY SON RETURNED HOME FOR 4 MONTHS (BEFORE APRIL)	0	0
3	1	I AM DIVORCED. DAUGHTER LIVES WITH HER MOTHER.	0	0
4	1	MY DAUGHTER FATHER VISITS	0	0
5	1	SON WAITING TO MOVE INTO NEW HOME	0	0
6	1	EXCHANGE STUDEBT FROM JAPAN STAYING WITH US AUG-JULY 05-06	0	0
7	1	FRIEND WORKING IN TOWN, PROBABLY MOVING HERE	0	0
8	1	HUSBAND SEPERATED 2/1/06 IN APARTMENT NEARBY	0	0
9	1	MY DAUGHTER, xxxx xxxxxx xxxxxx, WHO LIVES HERE ON WEEKENDS AND IN THE SUMMME	1	0
10	1	2 CHILDREN FOR WHOM MOTHER HAS PRIMARY/LEGAL CUSTODY	0	0
11	1	DAUGHTER; xxxxxxxxxxxxxxxxxxxxxxxx-FOSTER HOME	0	0
12	1	SON/AUTISM-MENTAL RETARDATION/LIVES WITH COUSIN	0	0
13	1	DAUGHTER WHO CHANGES HOUSEHOLDS	1	0
14	1	ANOTHER DAUGHTER WH9 MOVED OUT	0	0
15	1	SEPARATED WITH SPOUSE	0	0
16	1	WE HAVE ANOTHER DUAGHTER THAT STAY HERE EVERY OTHER WEEKEND 42 DAYS OUT OF	0	0
17	1	SIS. OTHER HAS OWN PLACE, BUT WE SPEND NIGHTS	0	0
18	1	SON MENTALLY HANDICAPPED LIVING ELSEWHERE	0	0
19	1	MY SON LIVES WITH ME ABOUT 50% OF TIME	0	0
20	1	ADULT SINGLE SON LIVING IN HIS OWN APT. AT S. LAKE TAHOE, CA VISITS	0	0
21	1	MY MOTHER STAYS WITH ME DURING WINTER MONTHS	0	0
22	1	JOINT CUSTODY MY DAUGHTER LIVES WITH ME TWO DAYS A WEEK.	1	0
23	1	SOMEONE HERE WHO HAS ANOTHER HOME	0	0
24	1	THE BABIES DAD STAYS BUT LIVES ELSEWHERE	1	1
25	1	DAUGHTER(xxxxxxxxxxD.O.B.2-17-90)MOTHER HAS PRIMARY CUSTODY	1	0
26	1	DAUGHTER'S BOYFRIEND FREQUENTLY STAYS HERE OVERNIGHT	1	1
27	1	TRAVELS ALL OVER THE COUNTRY-PLAY IN A BAND	0	0
28	1	MY DAUGHTER, US CITIZEN NOW IN INDIA	1	1
29	1	OCASIONALLY A COUSIN WHO WORKS IN THE AREA STAYS FOR THE WORK WEEK. DON'TKN	0	0
30	1	xxxxxxxxxxxxxxxxxxxxx LIVES HEREON SPRING (LATE) SUMMER AND IN HAITIWHEN FOL	0	0
31	1	xxxxxxxxxxxxxxxxxxxxx JR LIVED HERE UP INTIL 3/2006	0	0
32	1	GRANDSON LIVES HERE 1 OR 2 NIGHTS OUT OF THE WEEK	1	0
33	1	MY DAUGHTER, WHO HAS HER OWN HOME , IS STAYING IN MY HOUSE NOW .	0	0
34	1	DAUGHTER(19) LIVES WITH HER BOYFRIEND	0	0
35	1	STEP SON CURRENTLY LIVING WITH MOTHER	0	0
36	1	xxxxxxxxxxxxxxxxxxxxx IN PHILIPINES FOR 4 MONTHS	0	0
37	1	OLDER SON TEMPORARILY LIVING W/GRANDPARENTS IN ANOTHER TOWN TO BE CLOSE	0	0
38	1	ROOMMATE LIVING IN WITH BOYFRIEND	0	0
39	1	BIOLOGICAL DAUGHTER LIVES IN FLORIDA - BUT STAYS WITH ME 1/2 YEAR	1	0
40	1	DAUGHTER WHO IS WITH ME 2/5 OF THE TIME	0	0
41	1	SHE IS LIVING HERE FOR A SHORT TIME AND WILL BE COUNTED IN OREGIN'S CENSUS	0	0
42	1	xxxxxxxxxxxxxxxxx JUST MOVED OUT AND WE ARE JUST BEGINNING A DIVORCE	0	0
43	1	A SON WHO MOVES FREQUENTLY ANT STAYS AT THIS ADDRESS BETWEEN MOVES	0	0

Obs	Type	FQ2 write-in response	p	a
44	2	DUE DATE 4/406-BABY NOT BORN YET BUT WILL BE BY APRIL 16,2006	1	0
45	2	BABY DUE APRIL 18TH- xxxxxxxxxxxxxx FEMALE	0	0
46	2	TWIN BOYS WHO IN THE NICU. (BORN APRIL 8,2006)	0	0
47	2	xxxxxxxx (PERSON 6) IS EXPECTING TWIN BOYS 6/06	0	0
48	2	BABY DUE 11-3-06	0	0
49	2	UNBORN CHILD	0	0
50	2	A NEW BORN BABY GIRL APRIL 19,2006 xxxxxxxxxxxxxxxxxxxx	0	0
51	2	A BABY TO BE BORN IN JUNE OR JULY 2006	1	1
52	2	xxxxxxxxxxxxxxxxxxx - BORN ON APRIL 14, 2006	0	0
53	3	I DON'T HAVE ALL HER INFORMATION	1	0
54	4	PERSON THAT PROVIDE HOME CARE FOR MR.Txxxxxxxx	0	0
55	4	CAREGIVER- LIVES SOMEWHERE ELSE	0	0
56	4	MOTHER OF PERSON 1 WHO IS A LIVE -IN NANNY FOR PERSON 4 AND 5	0	0
57	4	NIECE PROVIDING HOME CARE	1	1
58	5	DAUGHTER AWAY AT COLLEGE	2	1
59	5	DAUGHTER WHO IS IN COLLEGE IN NEW YORK	0	0
60	5	xxxxxxxxxxxxxxxxxxx AWAY AT COLLEGE	0	0
61	5	SON IN COLLEGE	0	0
62	5	DAUGHTER xxxxxxxxxxxxxxxxxxxx ATTENDING COLLEGE (UNIV. COL AT BOULDER)	1	0
63	5	COLLEGE STUDENT - SON	0	0
64	5	MY SON HE'S IN JAIL	0	0
65	5	COLLEGE STUDENT AWAY NINE MONTHS OF YEAR	0	0
66	5	SON IN MILITARY	0	0
67	5	SON IN COLLEGE	1	0
68	5	OUR DAUGHTER xxxxxxxx IS ATTENDING GRADUATE SCHOOL IN MA.	0	0
69	5	SON AWAY AT COLLEGE	0	0
70	5	IN JAIL	0	0
71	5	COLLEGE STUDENT	0	0
72	5	SON AT COLLEGE	1	0
73	5	SON IN COLLEGE	1	0
74	5	xxxxxxxxxxxxxxxxxxxxxxxxxxx- INCARCERATED	0	0
75	5	SON AWAY AT COLLEGE FOR THE YEAR AT UNIVERSITY SURREY IN UK WILLI BE BACK	1	0
76	5	SON AT COLLEGE & SON MOVING HOME IN MAY	0	0
77	5	DAUGHTER AWAY AT COLLEGE	0	0
78	5	COLLEGE STUDENT -19YRS, OLD	0	0
79	5	OUR SON, WHO LIVES PRIMARILY AT COLLEGE	0	0
80	5	MY SON IS IN JAIL- xxxxxxxxxxxxxxxx	0	0
81	5	OUR SON HE IS AT COLLEGE-xxxxxxxxxxxxx-ALFRED UNIVERSITY	0	0
82	5	DAUGHTER ATTENDING COLLEGE AWAY	0	0
83	5	MY SON, AWAY AT COLLEGE	0	0
84	5	COLLEGE	1	0
85	5	STEP-DAUGHTER, xxxxxxxxxxxxxxxxxxxxxxxx LIVES IN PHILA,PA 8MOS/YR TO ATTEND TEM	0	0
86	5	COLLEGE DAUGHTER- xxxxxxxxxxxxxxxx	0	0
87	5	MY TWO CHILDREN ARE AWAY AT COLLEGE	0	0
88	5	xxxxxxxxxxxxxxxxxxx COLLEGE STUDENT LIVES AWAY 9-10 MOS A YEAR	0	0
89	5	xxxxxxxxxxxxxxxxxxx(OLDEST SON)LIVES AT COLLEGE THIS YEAR INDOMS.	0	0

Obs	Type	FQ2 write-in response	p	a
90	5	OLDEST DAUGHTER,19 LIVES ON COLLEGE CAMPUS	0	0
91	5	SON AT COLLEGE MOST OF THE YEAR	0	0
92	5	SON AT OCCIDENTAL COLLEGE IN LOS ANGELES FT	0	0
93	5	DAUGHTER LIVING NEAR COLLEGE	0	0
94	5	SON xxxxxxxxxxxxxxxxxxx, COLLEGE STUDENT D.O.B 8/31/82	0	0
95	5	DAUGHTER WHO LIVES AT COLLEGE MOST OF THE YEAR	0	0
96	5	MY DAUGHTER xxxxxxxxxxxxxxxxxxx WHO IS AT COLLEGE	0	0
97	5	SON WHO LIVES AT THE COLLEGE DORM MOST OF THE YEAR	1	0
98	5	xxxxxxxxxxxxxxxxx LIVES IN BATON ROUGE AT COLLEGE	0	0
99	5	SON IN COLLEGE	1	0
100	5	xxxxxxxxxxxxxxxxx BIOLOGICAL DAUGHTER LIVING OFF AT COLLEGE DORM	0	0
101	5	GRANCHILD IN COLLEGE	0	0
102	5	A SON xxxx, IN DETENTION FACILITY	0	0
103	5	SON AWAY AT SCHOOL IN UTAH UNITL JULY 2006	0	0
104	5	DAUGHTER AWAY @ COLLEGE 11 MO/YR	0	0
105	5	OLDEST SON IN COLLEGE OUT OF STATE	0	0
106	5	SON AT COLLEGE RENTING APARTMENT	0	0
107	5	DAUGHTER WHO GOES TO COLLEGE AWAY FROM HOME	0	0
108	5	COLLEGE STUDENT	0	0
109	5	COLLEGE STUDENT	0	0
110	5	A STEP-DAUGHTER AT FULL TIME UNDERGRADUATE SCHOOL IN ANOTHER STATE	0	0
111	5	WIFE IS IN NURSING HOME	0	0
112	5	DAUGHTER IN COLLEGE	0	0
113	5	COLLEGE STUDENT	0	0
114	5	DAUGHTER IN COLLEGE	1	0
115	5	IN COLLEGE-9MO. OF YEAR	0	0
116	5	ARMED SERVICES-MILITARY-STATIONED ELSEWHERE	0	0
117	6	DOG	0	0
118	7	MY OLDEST SON WHO JUST WENT TO SWEDEN AS A MISSIONARY FOR 2 YEARS	0	0
119	7	SON ON TWO YEAR MISSION FOR LDS CHURCH	0	0
120	8	LANDLORD,OWNS THE HOME, I RENT AN APT ATTACHED TO IT	0	0

Type of Living Situation: 1=part-time or mobile resident, 2=unborn or newborn babies, 3=no space on form, 4=caregiver, 5=group quarters, 6=pet, 7=missionary, 8=someone in nearby HU, 9=death.

APPENDIX C: Cognitive Test Results for Instruction about Whom to List as Person 1

CENSUS 2000 INSTRUCTION

“Please answer the following questions for each person living in this house, apartment, or mobile home. Start with the name of one of the people living here who owns, is buying, or rents this house, apartment, or mobile home. If there is no such person, start with any adult living or staying here. We will refer to this person as Person 1.”

64 bolded words with much redundancy, conjunctions.

Dillman et al.¹⁵ found problems in post-census cognitive interviews with 30 residents of Pullman WA and Moscow ID.

43 percent of Rs were confused about:

where answer spaces for other peoples’ names were (N=3)

who to list as Person 1 (N=10)

whether Rs needed to include their own name and information (N=3)

13 percent left themselves or someone else off the form due to confusion caused by this instruction.

These problems are serious!

Coverage errors

If Person 1 is chosen incorrectly, then relationship data are in error.

REVISION 1

“Next, answer questions about everyone, including yourself, whom you counted in Questions 1, 2, and 3.

Print the name of a person who lives here and in whose name this house or apartment is owned or rented. *If that person does not live here, print the name of any adult living here. This is Person 1.*”

Hunter and de la Puente¹⁶ cognitively tested the revision with 14 DC area residents living in complex households, households including college students, people with multiple addresses. Fonts were problematic; respondents skipped first sentence and did not read italicized material. Stumbled over conjunction: “...a person who lives here and in whose name...”

Two people did not realize they would be asked to list other people’s names inside the form.

One person was confused about whom to list as Person 1.

One person left himself off the form

Limitation: instruction was tested in conjunction with “worksheet” roster approach that asked a series of 3 questions, rather than Q1 and roster instructions.

¹⁵ Don Dillman, Nicholas Parsons, and Taj Mahon-Haft. 2004. *Cognitive Interview Comparisons of the Census 2000 Form and New Alternatives*. Technical Report 04-030 prepared for the U. S. Census Bureau. Summer 2004.

¹⁶ Jennifer Hunter and Manuel de la Puente. 2005. *Report on the Cognitive Testing of the Space Saving Features, Roster Questions, and Revised Instructions for the 2005 National Census Test*. SRD Study Series, Survey Methodology #2005-03, March 2005.

REVISIONS 2 AND 3

“Next, print the name of a person who lives here and in whose name this house or apartment is owned or rented. *If an owner or renter does not live here, print the name of any adult living here. This is Person 1. (On the next page, we will ask about the other people you counted in Question 1.)*”

OR

“Next, if the owner or renter of this house or apartment lives here, print the person’s name below. *If an owner or renter does not live here, print the name of any adult living here. This is Person 1. (On the next page, we will ask about the other people you counted in Question 1.)*”

Parsons et al.¹⁷ did 22 cognitive interviews with Pullman WA and Moscow ID respondents recruited to represent complex households, including residents who neither owned nor paid rent (e.g., parsonages) caretakers filling out forms for other people.

Half received each version, then were shown the other.

Both versions caused initial confusion for about one third of Rs.

Three-quarters preferred the second version as clearer:

“in whose name...” confused in 2nd, “if” helped in 1st version.

Italicized portions not noticed, so Rs were confused when no owner/renter lived there.

“the owner or renter” caused confusion in 2nd version for co-owners.

Fewer major errors compared to their previous tests.

REVISION 4

“Next, if an owner or renter of this house or apartment lives here, print the person’s name below. If an owner or renter does not live here, print the name of any adult living here. This is Person 1. *(On the next page, we will ask about the other people you counted in Question 1.)*”

Westat¹⁸ did 15 cognitive interviews with Montgomery County, MD, residents recruited to represent complex households.

All Rs responded to Revision 4, then were shown the Census 2000 instruction.

Most Rs understood the instruction and answered correctly; a few had to read it more than once.

Two had major difficulty

“owner or renter” did not make clear who to list as Person 1 when there were both in the household.

One R skipped parenthetical information and assumed all people should be accounted for in this question.

One R overwhelmed by aspects of the question that did not apply to her.

11 out of 15 Rs preferred the Census 2000 instruction as clearer!

¹⁷ Nicholas Parsons, Taj Mahon-Taft, and Don Dillman, *Cognitive Evaluations of Three Census Form Design Features: The Internet Option Message, Roster Instructions, and Identifying Person 1*. Technical Report 05-022, prepared for the Census Bureau April 2005.

¹⁸ Jeff Kerwin and Lisa Moses. 2006. *Cognitive Testing of Proposed Revisions to the Census 2006 Test Short Form*. Report prepared for the Census Bureau by Westat. January 30, 2006.

Second sentence in new instruction awkward, overemphasizes an uncommon situation.
“Please answer the following questions for each person...” in Census 2000 makes it clear upfront that each person will be asked about.

REVISION 5

“Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.”

Westat conducted 15 cognitive interviews.

Half filled out a questionnaire with the Census 2000 instruction first, half received Revision 5.

All Rs were then shown the other version, as well as Revision 4.

No one appeared to be confused by either tested version.

No apparent errors in listing Person 1.

9 preferred Revision 5, 4 preferred Census 2000, 1 preferred Revision 4.

Most Rs preferred the version they had filled out.

Figure 1. Statistics Canada “Step C”

STEP C	Did you leave anyone out of Step B because you were not sure the person should be listed?	<input type="text"/>
	<i>For example:</i> <ul style="list-style-type: none">• a person living at this address who has another home;• a person temporarily away.	<input type="text"/>
	<input type="radio"/> No	<input type="text"/>
<input type="checkbox"/> 00.	<input type="radio"/> 01 Yes → Specify the name the relationship and the reason.	<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

If you need more space, use the “Comments” section on page 6.

Figure 3. Deadline Messages in Advance Letter, Cover Letter, Outgoing Envelope, Reminder Card

Advance Letter Control (no deadline)

Dear Resident:

About one week from now, you will receive a request to complete a brief census form. By filling it out, you will help us develop better procedures for counting the U.S. population in the 2010 Census.

We are sending the form to your address rather than to a specific person, and we ask that it be filled out for everyone living at this address on April 13, 2006. It is important that the form be completed and mailed back promptly.

The census provides information necessary for each community to get its fair share of government funds for highways, schools, health facilities, and many other programs you and your neighbors need.

Thank you in advance for your help.

Experimental Advance Letter (deadline)

Dear Resident:

About one week from now, you will receive a request to complete a brief census form. By filling it out, you will help us develop better procedures for counting the U.S. population in the 2010 Census.

We are sending the form to your address rather than to a specific person, and we ask that it be filled out for everyone living at this address on April 13, 2006. It is important that the form be completed and mailed by April 17.

The census provides information necessary for each community to get its fair share of government funds for highways, schools, health facilities, and many other programs you and your neighbors need.

Thank you in advance for your help.

Figure 3 (cont.)

Reminder Card: Control

Dear Resident:

A few days ago, you should have received a form in the mail for the National Census Test.

Please complete and mail your census form today. If you have already mailed it back, please accept our sincere thanks.

By taking 10 minutes now to fill out your form, you will help make the 2010 Census more accurate and less costly to taxpayers.

Reminder Card: Experimental

Dear Resident:

A few days ago, you should have received a form in the mail for the National Census Test.

Please complete and mail your census form by April 17. That is the date that it must be in the mail. If you have already mailed it back, please accept our sincere thanks.

By taking 10 minutes now to fill out your form, you will help make the 2010 Census more accurate and less costly to taxpayers.

Fig. 3 (cont.)
Cover Letter: Control

Dear Resident:

The United States Constitution requires a census of the United States every 10 years. To prepare for the 2010 Census, the U.S. Census Bureau is conducting the National Census Test. The results will be used to develop better methods that will make the 2010 Census easier, more convenient, and less costly for taxpayers.

Please complete and mail back the enclosed census form today. We need your help to improve the 2010 Census. Results from the 2010 Census will be used to help each community get its fair share of government funding.

Your answers are confidential by law. Every Census Bureau employee—including the Director as well as every enumerator—has taken an oath and is subject to a jail term, a fine, or both if he or she discloses ANY information that could identify you or your household (Title 13, United States Code, Sections 9, 141, 193, and 214).

Cover Letter: Experimental

Dear Resident:

The United States Constitution requires a census of the United States every 10 years. To prepare for the 2010 Census, the U.S. Census Bureau is conducting the National Census Test. The results will be used to develop better methods that will make the 2010 Census easier, more convenient, and less costly for taxpayers.

Please complete the enclosed census form and mail it back by April 17. We need your help to improve the 2010 Census. Results from the 2010 Census will be used to help each community get its fair share of government funding.

Your answers are confidential by law. Every Census Bureau employee—including the Director as well as every enumerator—has taken an oath and is subject to a jail term, a fine, or both if he or she discloses ANY information that could identify you or your household (Title 13, United States Code, Sections 9, 141, 193, and 214).

Fig. 3 (cont.)
Outgoing Envelope: Control

**U.S. Department of Commerce
Economics and Statistics Administration
U.S. Census Bureau**
4700 Silver Hill Road Room 3000-4
Washington, DC 20233-0601
OFFICIAL BUSINESS
Penalty for Private Use \$300
S-5A (3-2005)
AN EQUAL OPPORTUNITY EMPLOYER



National Census Test

PRESORTED
FIRST-CLASS MAIL
POSTAGE
& FEES PAID
U.S. CENSUS BUREAU
PERMIT NO. G-58

U.S. Census Form Enclosed
**YOUR RESPONSE
IS REQUIRED BY LAW**

RETURN SERVICE REQUESTED



U S C E N S U S B U R E A U

Outgoing Envelope: Experimental

**U.S. Department of Commerce
Economics and Statistics Administration
U.S. Census Bureau**
4700 Silver Hill Road Room 3000-4
Washington, DC 20233-0601
OFFICIAL BUSINESS
Penalty for Private Use \$300
S-5D (3-2005)
AN EQUAL OPPORTUNITY EMPLOYER



National Census Test

PRESORTED
FIRST-CLASS MAIL
POSTAGE
& FEES PAID
U.S. CENSUS BUREAU
PERMIT NO. G-58

U.S. Census Form Enclosed
**YOUR RESPONSE
IS REQUIRED BY LAW**
Mail by April 17

RETURN SERVICE REQUESTED



U S C E N S U S B U R E A U