RESEARCH REPORT SERIES (Survey Methodology #1996-11)

Cognitive and Motivational Properties of Two Simple Form Mailing Packages Proposed for Inclusion in the 1997 National Survey

Cleo R. Jenkins Meredith A. Lee

Center for Survey Measurement Research and Methodology Directorate U.S. Census Bureau Washington, D.C. 20233

Report issued: November 1996

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

Abstract

We conducted this research to evaluate the cognitive and motivational properties of two mailing packages proposed for inclusion in the 1997 National Survey. One was designated the "accordion" and the other the "rollfold". The cognitive properties included how well respondents navigated through the forms, operated the folds, and comprehended the questions. We also evaluated the motivational properties of the design features that differed between the mailing packages. This included respondents' preferences for one design feature over another and their reports of whether or not any of the design features would motivate them to complete the census. During this part of the interview, we occasionally included a comparison to the best performing mailing package from the 1996 National Content Survey, (the "green booklet"). We also asked respondents to comment on individual pictures and messages from the accordion form. Finally, when evaluating the cover pages, we included a third, stand-alone cover page.

These mailing packages performed better than those previously tested. We attribute this to two major changes. The first is that these mailing packages look more official than some of the packages tested last time. As a result, respondents didn't perceive these mailing packages as junk mail. The second change was with the navigational quality of the form. These forms were designed with a well-defined vertical flow, beginning with the 'Start Here' instruction and continuing until the very end. One of the greatest achievements with these forms was that all but two respondents began in the right place, and all but one successfully navigated through the form without missing or skipping questions. In addition, the critical concept of the census was conveyed. As a result, not one respondent mistakenly repeated information about himself or herself.

Keywords: decennial census, mailing packages

Suggested Citation: Cleo R. Jenkins and Meredith A. Lee. (1996). Cognitive and Motivational Properties of Two Simple Form Mailing Packages Proposed for Inclusion in the 1997 National Survey. Research and Methodology Directorate, Center for Survey Measurement Study Series (Survey Methodology #1996-11). U.S. Census Bureau.

Cognitive and Motivational Properties of Two Simple Form Mailing Packages Proposed for Inclusion in the 1997 National Survey Prepared by Cleo R. Jenkins and Meredith Lee Center for Survey Methods Research, Bureau of the Census

November 21, 1996

EXECUTIVE SUMMARY

Purpose

We conducted this research to evaluate the cognitive and motivational properties of two mailing packages proposed for inclusion in the 1997 National Survey. One was designated the accordion and the other the rollfold (shown in Figures 1 and 2, respectively). The cognitive properties included how well respondents navigated through the forms, operated the folds, and comprehended the questions. We also evaluated the motivational properties of the design features that differed between the mailing packages. This included respondents' preferences for one design feature over another and their reports of whether or not any of the design features would motivate them to complete the census. During this part of the interview, we occasionally included a comparison to the best performing mailing package from the 1996 National Content Survey, the green booklet (shown in Figure 3). We also asked respondents to comment on individual pictures and messages from the accordion form (see Figure 4). Finally, when evaluating the cover pages, we included a third, stand-alone cover page (the third figure from the left in Figure 5). The following is a list of the major design features we evaluated in this research and their names by mailing package or stand-alone page.

	Mailing Packages		Page	
Design Features	Accordion	Rollfold	Green Booklet	
Envelope	Logo&Color	Seal&White	Original	
Cover Pages	Official	Start Here	Not compared	Logo
Fold	Accordion	Rollfold	Not compared	
Pictures/Messages	Yes	No	Not compared	
Color	Mustard	Mustard	Green	

Table 1. Name of Major Design Features by Mailing Package or Stand-alone Page.

Major Findings

<u>Overall</u>. These mailing packages performed better than those previously tested. We attribute this to two major changes. The first is that these mailing packages look more official than some of the packages tested last time. As a result, respondents didn't perceive these mailing packages as junk mail. The second change was with the navigational quality of the form. These forms were designed with a well-defined vertical flow, beginning with the 'Start Here' instruction and continuing until the very end. One of the greatest achievements with these forms was that all but two respondents began in the right place, and all but one successfully navigated through the form without missing or skipping questions. In addition, the critical concept of the census was conveyed. As a result, not one respondent mistakenly repeated information about himself or herself.

<u>Envelopes</u>. The majority of respondents (7) reported that they would not be more likely to open one of the envelopes over another and the remainder were almost equally divided in which of the three envelopes they would be more likely to open. This differs from the last round of interviews. At that time, most respondents reported that they would be more likely to open the original government envelope. This is reassurance that either of the two newly designed envelopes will perform as well as the original government envelope. With that said, however, we noticed during the interviews that respondents paid more attention to the logo than the mandatory message on the 'Logo and Color' envelope. Therefore, we wonder if the logo on this envelope may command respondents' attention at the expense of the mandatory message. Some evidence that it may not, however, comes from the fact that nearly all of the respondents reported noticing the mandatory messages on all of the forms.

<u>Cover Pages</u>. An unexpected finding from this research was that a majority of respondents reported that the 'Logo' cover page (6) would make the best cover page, followed by the 'Start Here' cover page (4). Respondents reported that the pictures on the 'Logo' cover page helped to impart information quickly and that the short sentences were direct and to-the-point instructions. The 'Start Here' cover page was perceived as quick to fill out because they could immediately get started. Wanting to get started is a finding that is consistent with the last round of interviews. In comparison, the 'Official' cover page was perceived as requiring too much effort to read and comprehend.

Although a majority of the respondents (7) went on to report that the cover page would not motivate them to respond to the census right away, still a minority (4) claimed that the 'Logo' cover page would motivate them. This seems significant in the context of other findings. As was the case here, respondents usually reported that some design feature was not going to motivate them to respond to the census. However, when they did report that a design feature was going to have an effect, they tended to be equally divided as to which of the design features was going to do so. In contrast to this pattern, a small minority steadfastly claimed that the cover page was going to have an effect on their behavior.

<u>Fold</u>. The rollfold appears to be the more promising of the two folds. Generally respondents treated both forms as though they were booklets because they expected them to be booklets and because they could be treated that way. The fact that the forms had different folds was often transparent to respondents. However, the reason we favor the rollfold is because when respondents took it out of the envelope, the 'Start Here' page was facing them. Consequently, they didn't have trouble getting started correctly. In contrast, the accordion came out of the envelope with the 'Person 4' page facing respondents; unfortunately, a couple of respondents erroneously began on this page. Since this is consistent with what we have seen respondents do in past tests, we are concerned that the accordion may produce more errors.

<u>Pictures and Messages</u>. A majority of respondents (7) said that they noticed the pictures and messages while filling out the accordion form; however, only a very small number (2) actually read any of them aloud. The good news is that the pictures and messages didn't interfere with respondents navigating through the form correctly. An advantage of having the pictures and messages in reverse figure-ground is that they are less likely to interfere with respondents filling out the form. Furthermore, respondents tended to have generally favorable feelings towards the pictures and messages when we drew their attention to them. Our findings suggest that the pictures and messages may impart an overall good feeling. However, only a very small number of respondents (2) said that the pictures and messages would motivate them to fill out the form.

<u>Color</u>. Respondents had mostly positive reactions about the color of the rollfold and accordion forms. Also, the color had the proper amount of contrast for reading. Only one respondent preferred the green booklet.

Form Filling Behavior. Respondents had the greatest difficulty understanding the address question and putting the questionnaire into the return envelope so that the bar code showed through the window.

INTRODUCTION

This research is part of the Census Bureau's continuing effort to design decennial simple form mailing packages that are respondent friendly, machine imagable, and cost efficient. In 1995, Two Twelve Associates, a graphic design firm, was commissioned to independently develop two newly designed mailing packages. These mailing packages (known as the gold booklet and gold vertical forms), along with the latest in-house version (the green booklet), were subjected to both an in-depth pretest using cognitive interviewing methods and a national mailout/mailback test, designated the 1996 National Content Survey (NCS).

Based on the results of the cognitive interviews (Dillman et al., 1995), along with whatever results of the NCS that were available (written results are still forthcoming), and technical and cost considerations, Two Twelve was again commissioned to develop two mailing packages, this time in a collaborative effort with the Census Bureau (rather than independently, as above). This resulted in substantially different mailing packages from the first round. Figure 1 displays one of the resulting mailing packages, Figure 2 the other.

As can be seen, the designs include two alternative cover pages. One, which we will call the 'Official' cover page, displays the title 'The Official Census of the United States' in reverse print (i.e., white text on a black background) at the top of the page. In addition, it contains a message about the purpose of the census, along with the address label. The other cover page, which we will call the 'Start Here' cover page, makes use of the newly designed Census Logo 'United States Census 2000' as the title. In this case, the title is smaller, the text is black, and the background is orange. This cover page also contains the same message about the purpose of the census, but it focuses more on asking the address question, the critical housing and household count questions. The address label is not on the cover of this form.

The designs also include two new and different folds. While the gold vertical questionnaire had the more desirable size and shape of the three questionnaires tested in the 1996 NCS, it was also more costly to process. It was composed of two 11-1/4" x 10-1/2" sheets of paper folded in half and stapled together to form a 5-1/2" x 10-3/8" booklet. To reduce costs, the new set of simple forms are composed of one 22" x 10-3/8" sheet of paper that is folded in two different ways to give rise to the same size and shape as the earlier vertical questionnaire (5-1/2" x 10-3/8"). We will call one an accordion-style fold, the other a rollfold.

Finally, one of the forms includes pictures with messages, while the other doesn't. The pictures and messages are intended to make respondents feel good about the census at the very least and to encourage response at best. They are simple line figures with short, 1-sentence messages in reverse print (i.e., orange for the figures and white for the text) on a black background in the upper-right hand corner of each person page. Figure 1 shows two of these pictures and messages on the upper right-hand corners of the 'Start Here' and 'Person 4' pages.

Other, differences between the two forms include the typeface, and minor differences in graphic styles.

This research was designed with several objectives in mind. The ultimate goal is to develop one decennial simple form mailing package to be sent to every household in the United States in the year 2000. The more immediate goal, however, is to refine the accordion and rollfold forms for inclusion in another mailout/mailback test, the 1997 National Survey. Therefore, we set out to determine respondents' preferences regarding the envelopes, cover pages, the folds of the questionnaire, and the pictures with messages. Our intention was to learn which of these design features, if any, might possibly have an effect (i.e., motivate) respondents to complete and return their census form. In addition, we set out to observe how well respondents navigated through these forms, including how well they 'operated' the folds. This was to gain an understanding of what impact the design of the form would have on the accuracy and reliability of the data collected.

METHODOLOGY

We contracted with a marketing research company to recruit 12 respondents from the Washington, D.C. area with various characteristics: different ages, different levels of education, different races and small and large households. One-on-one interviews were conducted with the respondents. Interviews were conducted at the Census Bureau's cognitive laboratory located at the Center for Survey Methods Research (CSMR). The interviews were conducted by the authors. All of the interviews were audio-taped and all but one were video-taped.

During the interviews, respondents were told that we were interested in finding out what they thought about two mailing packages we are considering using the next time the national census gets done, in the year 2000. Respondents were handed one mailing package at a time. Which mailing package they received first was randomly assigned in advance. Respondents were then asked to complete the form as they would have if they had received it in the mail at home, except that they were asked to read aloud anything that they would normally read to themselves. Furthermore, respondents were asked to think aloud and express their feelings aloud, from the moment they first saw the envelope, until they finished filling out the questionnaire. Interviewers probed when necessary to further understand respondent thought processes and to clarify any respondent confusion.

After completing both mailing packages, respondents were asked a set of standard debriefing questions. These questions were designed to gather reactions to the mailing packages, as well as opinions on specific issues relating to the forms and the envelopes. During this part of the interview, we compared several features of the two new mailing packages to the best performing mailing package from the 1996 NCS (the green booklet). This included preferences for color and envelope. The green booklet and envelope are shown in Figure 3. We also showed respondents a different cover page that we will discuss in more detail later.

LIMITATIONS OF THE RESEARCH

Some discretion should be applied when interpreting the results that follow. The respondents may not be representative of the general population. Despite the fact that we attempted to recruit a diverse group of respondents, we were limited to respondents drawn from the marketing research firm database. Furthermore, we were dependent on respondents who were willing and able to come to our laboratory. Finally, due to time and resource constraints, the research only included 12 respondents.

RESULTS

Overall

<u>Level of Difficulty</u>. In general, respondents' overall impression of both forms seemed relatively positive. When they first looked over one of the forms, some respondents commented on how easy it looked. And after they had filled out both forms, we asked respondents if they had difficulties with either form, or if one of the forms was more difficult to fill out than the other, and all but one respondent said, "no" (see Table 2.a and 2.b). However, respondents did have some problems with these forms. The most serious problem manifested itself with both questionnaire folds. We will describe this problem and other problems in later sections of this report.

Before doing so, however, we would like to say that whatever problems respondents encountered, they were never enough to alienate them. From our perspective, these forms performed better than those previously tested. We attribute this to two major changes.

7

One is that these forms looked official from respondents' perspectives. We didn't hear the kinds of comments this time as we heard last time about how the gold booklet and vertical forms would be mistaken for junk mail. The second change was the well-defined vertical flow of the questionnaire, from the designated 'Start Here' point to its end. One of the greatest achievements with these forms was that all but two respondents began in the right place, and all but one successfully navigated through the form without missing or skipping questions.

<u>Preferred form.</u> Although respondents didn't report having many difficulties with either of the forms, many respondents did report preferring one of the forms over the other (refer to Table 2.c). After filling out both forms, we asked respondents, "Suppose in the next census we can only use one of these forms. Which one of these forms do you think we should use?" Respondents were equally divided in their answers. Five respondents preferred the rollfold, while another five preferred the accordion. Two couldn't choose; from their perspective, the forms were the same.

Respondents often spontaneously cited choosing one form over the other because of one of the design features we set out to explore (i.e., icons, the cover page, or the questionnaire fold). This suggests that these were actually salient features. And since this occurred before we had actually mentioned any of these features, their responses were unbiased and reliable.

It is important to recognize, however, that different respondents preferred different forms for different reasons. For instance, two respondents, and perhaps a third, chose the accordion because of the pictures and messages (which we will discuss in greater detail later), while another respondent liked its fold. In contrast to this, four respondents explicitly chose the rollfold because of the 'Start Here' cover page and its fold. However, two respondents basically saw the forms as identical because they were only cognizant of the content of the questionnaires at this point in the interview. And, of course, they were right--the content was identical. Finally, one respondent chose the accordion and another chose the rollfold for some other reason.

These reasons seem to suggest that respondents tended to like and relate well to three features of the questionnaires best--the "Start Here" page of the rollfold questionnaire along with its fold, and the pictures and messages from the accordion questionnaire.

Overall Reactions to Pictures and Messages

The next debriefing question we asked respondents was, "One of the differences between

these forms is that one form has pictures and messages and the other one doesn't. Did you notice these pictures and messages as you were filling out this form?" Nearly twothirds of those who answered this question said that they did (Table 2.d). Respondents who didn't see the picture and messages seem to be people who, as far as we could tell, didn't pay much attention to the reverse figure-ground areas. This is consistent with our present knowledge that a person can not simultaneously attend to different figure-ground areas (e.g., Rubin, 1958; Brand, 1945). One advantage of having the pictures and messages in reverse figure-ground is that they are less likely to interfere with respondents navigating through the questionnaires correctly. This appeared to be true.

Next we asked respondents if having the pictures and messages on the form would make them more likely, less likely, or have no effect on whether they would complete and return first the accordion, and then the rollfold, in the next census. Table 2.e and 2.f shows that their answers were the same in both cases: the vast majority said it would have no effect, while two said it would make them more likely. Not surprisingly, the two who responded "more likely" were the same two who had explicitly told us to use the accordion in the next census because of the pictures and messages.

Although one of these respondents never read the messages aloud as she was actually filling out the accordion, or glanced at them as far as the interviewer could tell, as soon as the respondent finished filling out the accordion, she said, "I like the icons here. It says, 'Your answers help your community plan for new schools, jobs, and roads.' I think that is important. I did not notice this on the first form [the rollfold]. I have an aversion to forms. I really don't pay much attention to them, but I, I think these are very good. Again, if they were on the first one [the rollfold] that would be very good. That may be helpful maybe getting someone to fill these answers. If someone is going to fill them out, it would give them the feeling that it is not just another piece of paper. Maybe it will help the community, so I like them."

After we had asked respondents what effect the pictures and messages would have on them, we asked them to specifically look at each one and to tell us if their reaction to having it on the form was favorable, unfavorable, or neither one. Interestingly and surprisingly, respondents tended to have more favorable feelings towards the pictures and messages than one might have predicted given their earlier form filling behavior and answers to our questions. In the first place, half the respondents hadn't paid any attention to them when they were filling out the form. In the second place, most respondents had just finished telling us that the pictures and messages wouldn't have any effect on their returning the census form. We discovered that although many respondents hadn't paid attention to the pictures and messages, once we drew their attention to them, many of

9

them seemed to think that the pictures and messages were good. While they may not motivate them to necessarily fill out the questionnaire and return it, many respondents felt that the pictures and messages might motivate others. The same was true for many respondents who had noticed them, but who said they would have no effect on their filling the questionnaire out. For instance, one respondent immediately said, "I think they are good. Let's people know there is nothing to be afraid of."

Another respondent came to the conclusion that although he hadn't noticed the pictures and messages consciously, he had noticed them subconsciously. In response to one of the first debriefing questions, the respondent suggested that we use the accordion in the next census because it seemed a little bit friendlier. In his opinion the rollfold form was a little more stark and it looked more official. This took the interviewer by surprise because in the interviewer's mind, the cover page of the accordion looked more official--it even says 'official' in the title. In the ensuing series of follow-up questions about the pictures and messages on the accordion form, the respondent maintained that he hadn't seen the pictures and messages, and that they wouldn't have any effect on his returning the form. Nonetheless, the interviewer asked if putting the pictures and messages on the rollfold would effect his completing and returning that form. Consistent with his earlier responses, he said that he didn't think that the pictures had anything to do with it.

However, something important seemed to transpire next. The respondent identified for himself just what made the accordion form seem friendlier to him. The respondent continued: "Like I said, the pictures do make it [the accordion] look a little bit friendlier, I guess. But like I said, I figured this one [the accordion] was a little bit friendlier, but it is just a feeling. Nothing I can quantify. Of course, do you want to be friendly, or do you want to be official? Because this first one [the rollfold] looks more official, but the other one [the accordion] feels friendlier." When the interviewer was done going through each picture and message with the respondent, he said, "I guess I noticed these subconsciously. I mean I can't look at the page and not see what is on it. I just . . . didn't think about their having any meaning, except for being a bit of a decoration."

The reason we have included this person's reaction to the pictures and messages is because, although it is only one person's experience, we believe that this person may be speaking for other people who aren't as capable of inferring and articulating their cognitive processes from information that was not directly heeded at the time. It should be noted, however, that this is only speculation on our part. It is just as possible that the respondent was rationalizing his thought processes. Nevertheless, we can't help but wonder if at the macro level, the pictures impart an overall good feeling. Our findings suggest that they may. Our findings also seem to have differentiated between two different effects related to the pictures and messages. Respondents report that the pictures and messages are not going to affect their completing and returning the census. This is not to say, however, that the pictures and messages don't contribute to some effect because clearly some respondents chose the accordion over the rollfold as a result of the pictures and messages. It's just that the action of choosing one questionnaire over another is not part of the mailout/mailback survey process, thus its effect may not be important. However, we need the 1997 National Survey to either confirm or deny this.

Individual Reactions to Pictures with Messages

Overall, respondents reported favorable reactions toward the pictures and messages. When we asked the respondents what each picture and message made them think of, they provided fairly consistent interpretations that were also consistent with our original impressions of the pictures and messages. Most respondents felt the pictures and messages were useful in that they highlighted the various things census information is used for, and why people's responses are important. Some respondents did, however, express some negative comments about a few of the pictures and messages.

As can be seen in Table 2.g through 2.k, respondents were most favorable towards the first and fourth picture and message (see Figure 4). They were somewhat less favorable towards the second and fifth picture and message. And they were least favorable towards the third picture and message. We discuss each picture and message in greater depth below.

1. Sun and cloud. Many respondents were favorable toward this picture and message. They stated that the picture and message represented a bright future for them in terms of their children, education and the community. Some respondents, however, could not discern what the picture represented, while another respondent commented that there did not seem to be a logical connection between the picture and message.

2. Coin in Building. Many respondents stated that this picture and message was ambiguous. Therefore, this picture and message received the widest variety of interpretations. Some respondents thought the picture represented money being placed into resources such as: schools to enhance education and children's futures; banks; and communities. Other respondents thought the building was a picture of a home, a community center or a church. One respondent thought the picture represented how a community could help the elderly with their house repairs, or how the community could help with the upkeep of parks.

<u>3. Scales of Justice</u>. This picture and message received the most negative comments. Respondents seemed to be divided on how they reacted to the phrase 'ensure the fair distribution of political power and Federal funding.' The respondents who reacted positively toward this phrase indicated they liked the fact that it represented equality, justice and fairness. One respondent commented that the picture and message made him think of equality for everyone, regardless of race. Other positive comments reflected the fact that respondents felt fair distribution in Congress is important and that proper representation creates a balance.

Other respondents, however, reacted negatively to this phrase. Some did not believe that there is fair distribution of political power. One respondent in particular stated that she did not like the reference to political power because it made her think of lobbying and the negative aspects of federal assistance. This respondent stated that she was especially offended since it is election time [issues were salient to the respondent]. One respondent stated that it was not really clear how her answers would ensure equal political power. Another respondent stated that he felt the message about balancing the distribution of funds may be too complex for some people to grasp.

<u>4. Computer with Apple</u>. This picture and message seemed to generate the most positive reactions from respondents. Although many respondents stated that the picture did not make them think of jobs and roads, many, if not all our respondents, focused on the word school. Many respondents expressed how important education is since it pertains to their children's futures. They also expressed ideas along the lines that computers are an important technological advancement and that more computers should be placed into schools. The one respondent who was opposed to all the other pictures and messages commented favorably toward this picture and message because in his opinion, computers are the wave of the future and this is important to him, because his son is growing up in the "computer era."

Most respondents commented that the computer was an Apple computer. One respondent even commented that we [Census Bureau] were pushing Apple computers, not IBM's. This is worrisome as this implies free advertisement for Apple computers, and if taken too seriously, may offend some respondents.

5. Medicine Bottle with Thermometer. Most respondents were favorable toward this picture and message. Many respondents indicated the picture and message made them think of health care, health insurance, and neighborhood clinics. Some respondents referred to health care specifically geared toward the elderly, and they liked this since they feel it is important to ensure this segment of the population receives the appropriate

health care.

Two respondents in particular outrightly objected to this picture and message. Immediately after seeing the picture, one respondent commented, "...dealing drugs." Another respondent explained that she was opposed to the terms 'right health care services' and the 'right neighborhoods.' The respondent explained that this made her think of the abortion and choice issues. Furthermore, this respondent asked how one would know if they lived in 'the right neighborhood' and what if one lived in 'the wrong neighborhood.' Later in the debriefing, this respondent suggested we drop the pictures and messages altogether. Her decision was greatly influenced by her negative reactions to this picture and message.

Could any pictures and messages be improved?

After we asked respondents about their reactions to the pictures and messages and what the pictures and messages made them think of, we asked respondents if they thought there was any way that some of the pictures and messages could be improved. As stated earlier, one respondent suggested eliminating them entirely. Other respondents were not as harsh and they provided constructive criticism on how we could improve the pictures and messages. For example, one respondent suggested replacing the sun and cloud picture with something less ambiguous. She stated that we [society as a whole] cannot do anything with a sun and cloud. She did state, however, that we can do something about the community. The respondent suggested replacing the sun and cloud picture with a picture of kids playing, a community, or a fire department. Another respondent, who reacted negatively to the 'Medicine Bottle with Thermometer' picture, suggested replacing the present picture with the Blue Cross Blue Shield symbol, or something that symbolizes, "...to serve and protect." Not many respondents were able to suggest other specific improvements, but they acknowledged that they felt some of the pictures and messages could be improved, often to make them less ambiguous.

Typeface

Another difference between the two forms is the way the text is printed. We pointed this out to respondents and then asked, "Do you find one easier to read than the other, or are they about the same." As shown in Table 2.1, half of the respondents said they looked the same. The other half chose one of the forms over the other. Four respondents preferred the accordion because they felt it was bolder than the rollfold, but two preferred the rollfold for the same reason. It is clear that respondents sometimes saw one typeface as bolder than the other, but because of the small numbers involved, it is difficult to

conclude with any confidence just which typeface the general population may prefer.

Color

We asked respondents, "In general, how much do you like the color of these forms? Very much? Somewhat? Not at all? Or doesn't the color of the form matter to you?" A couple of respondents said that the color didn't matter; however, the majority of respondents either liked the color of the forms very much or somewhat (see Table 2.m). These respondents said things like, "[It's a] nice, neutral color.; [It's] eye appealing.; [It's] soft to the eye.; [It's] toned down just enough; and [It] radiates sunshine and friendliness." Only one respondent didn't like the color at all. This respondent thought the color looked unofficial and "Halloweenish," and when shown the green booklet, chose that instead.

We also asked respondents if they preferred one of the color combinations more so than the other. As shown in Table 2.n, three respondents didn't see a distinction between the color combinations, while the remainder were nearly equally divided in their preferences. Some liked the black background and orange letters and orange question numbers in the accordion questionnaires. One respondent in particular stated that she liked the colors on the accordion form because she thought the numbers and topics seemed to jump out. She thought this made it quicker to go through. Others didn't like these aspects at all. Instead they liked the white letters against the black background and/or the black numbers against the orange background on the rollfold form. For instance, one respondent commented that the colors on the rollfold form were more vivid and another respondent stated that the black numbers against the orange background made the numbers stand out more.

The remaining findings with regard to color show that nothing was particularly outstanding. For instance, respondents didn't prefer one of the forms more than another because of its color (see Table 2.0). One of the colors wouldn't motivate them to fill out the form more so than another (see Table 2.p). Finally, they didn't tend to find any of the forms easier to read because of its color (see Table 2.q).

Cover pages

We glued three cover pages on a black board and showed this to respondents (see Figure 5). It contained the two cover pages we've been discussing all along, the 'Start Here' and the 'Official' cover pages. It also contained a third cover page with the new census logo as the title and a more graphically designed appeal with pictures. Respondents gravitated towards both the 'Logo' and the 'Start Here' cover pages (see Table 2.r) for

what appeared to be the same reason, that is, these cover pages were in some way perceived as easier and quicker. In the case of the 'Start Here' cover page, it was quicker because they could immediately get started. In the case of the 'Logo' cover page, it looked easier to read, that is, the pictures helped to impart information right away. In general, respondents didn't care for the 'Official' cover page for what appeared to be the opposite reason. It just required too much effort to read.

In response to our asking respondents why they chose the cover page that they did, we heard a number of positive remarks about the clarity of the logo on the "Logo' cover page. For instance, one respondent pointed out, "It clearly states what it is [she pointed to the logo]. Using the 2000, with that on cover might spark an interest." Another said, "The Official Census of the United States does not spell out United States Census 2000."

We also accumulated much verbal data in support of the graphically designed appeal on the 'Logo' cover page. Different respondents said the following and more: "Pictures [are] real easy. Can read fast and understand. Bigger, better type, spells out. Let's person know. Gets to the point. You see what it is: Fill it out, get back in mail, direct instructions. The others have too much reading."

In contrast, we heard a couple of negative remarks about the 'Official' cover page. For instance, one respondent said, "Don't know what would do with that. It's another form of invasion. A lot of people don't think much is done with the census. With this feeling, not sure if would fill out." However, there were as many respondents who were in favor of the 'Official' cover page as were against it. For instance, one respondent said, "Official looks a little more important and less frivolous.

Although our respondents were able to identify the cover page they felt should be used for the next census and verbalize their reasoning, it is also important to recognize that the majority said that none of the cover pages would necessarily motivate them to respond to the census right away (see Table 2.s). Still, it is interesting to note that a minority reported that the 'Logo' cover page would motivate them.

Envelopes

We began this part of the debriefing by displaying the envelopes of the two mailing packages. The envelope with the logo printed in reverse type in the return address and with a yellow rectangle around the mandatory message is shown in Figure 1. We will call this the 'Logo & Color' envelope. The white envelope with the commerce seal in the return address area and a black rectangle around the mandatory message is shown in

Figure 2. We will call this the 'Seal & White' envelope. Respondents clearly gravitated towards the envelope with the reverse type logo in the return address area (Table 2.t). They seemed to really respond well to the logo (Table 2.u), so much so, that we wonder if the reverse type logo is going to command respondents' attention at the expense of the mandatory message. Or will it enhance it, especially in the presence of a media campaign? It is hard to say. We can say that when asked, nearly all respondents said they had noticed the mandatory messages (Table 2.v). This result differs from the previous round of cognitive interviews. In that study, respondents often overlooked the mandatory message that was printed in reverse type on the back of one of the envelopes, and although they looked at it, they didn't really understand the blue button mandatory message this time around is reassuring.

Another result that differs from the last round of cognitive interviews is that this time, no one reported that the envelope with color looked like junk mail, while half of the respondents thought the plain white envelope looked like junk mail (Table 2.w). In the last round of interviews, the original government envelope was plain white, while the other envelopes had appreciable amounts of gold. In that round of interviews, the majority of respondents reported that the plain white envelope looked like mail from the government, while the gold envelopes looked like junk mail. In contrast, a majority of respondents this time around reported that both of the envelopes looked like they were from the government (Table 2.x). This seems to suggest that having reduced the amount of color on the envelopes successfully achieved a government look. Again, this is a desirable, and therefore, reassuring result. However, it is our opinion that some respondents perceived the plain white envelope in this round of interviews as junk mail because of the haphazard placement of the messages in the return address area.

When we added the original envelope (shown in Figure 3) to the comparison in this round of interviews, the picture didn't change much. Most respondents still preferred the envelope with the logo (Table 2.y). Those who had preferred the plain white envelope now seemed to prefer the original government envelope, probably because its messages weren't as haphazardly arranged. Also, one respondent preferred the original government envelope because it was smaller and it didn't contain a glacine window. He said that these features made the plain white envelope look more like junk mail than the original government envelope.

The majority of respondents reported that they would not be more likely to open one of the envelopes over another (Table 2.z). Since this differs from last time as well, when most respondents reported that they were more likely to open the original envelope, this is

further reassurance that either envelope will work.

Problems Noted With Both Questionnaires

<u>Fold</u>. Two of our twelve respondents erroneously began on the back page of the accordion in the Person 4 space. Unfortunately, this space, although it was upside down, faced them when they took the accordion form out of the envelope. Consistent with what we have seen previous respondents do in similar situations, these respondents didn't pay any attention to the fact that the space was upside down; they simply turned it around so it was right-side up. Nor did they notice the 'Person 4' heading at the top of the page, although the heading is large in comparison to the rest of the typeface and it is printed in reverse type. Instead these respondents just 'saw' the questions and assumed that the first question referred to them.

However, this assumption posed a problem when they got to question 2 on this page "How is this person related to Person 1" because, of course, this question didn't make sense given their situations-- 'this person' was 'Person 1.' Although both respondents seemed to recognize that something was wrong, neither actually figured out their mistake yet, probably because they hadn't accumulated enough evidence to the contrary. Instead, they cleverly came up with ways to answer this question and to continue. For instance, one of the respondents thought this question (and consequently the rest of the questions on the page) had begun to refer to Person 2. It wasn't until she reached Person 5 and had filled in her husband's name (for whom she had already reported in questions 2 through 6 of Person 4) that she realized her mistake. The other respondent cleverly wrote "self" in response to question 2, and answered the remainder of the questions on this page about herself before she too realized her error. Both respondents then recognized where they should have begun. After realizing this, they proceeded to work through the form without additional problems.

One respondent had difficulty with the rollfold. When she finished filling out the Person 3 page on the left hand side, rather than turning Person 3 to the left, which would have exposed Persons 4 and 5 beneath, she proceeded to the already exposed continuation roster on the right hand page. She was oblivious to the fact that she needed to unfold the questionnaire because she perceived it as a booklet with a spine down the middle rather than a fold down the middle. Moreover, the respondent neither read the instructions at the top of the continuation roster, nor did she realize the numbers on the left should have corresponded to Person numbers. In other words, the form failed to redirect her. As a result, she never did recognize her mistake. In fact, during the debriefing she recommended that we use the accordion questionnaire in the next census because to her

way of thinking, it allowed her to report about all of her family members in comparison to the rollfold.

<u>Address question</u>. Respondents had a variety of problems with this question. To begin with, many respondents were willing to wrongfully assume that the address on the covers was correct. They seemed to think it was unimaginable to receive a form with an incorrect address printed on it. This indicates that they had conceptual problems with this question, and did not comprehend its intention. In the worse case scenario, one respondent explained that if she received the form with an incorrect address printed on it, she would drop it in the mailbox so that the correct household would receive it. Another respondent stated that the only way he could receive a form with an incorrect address on it was if it had been forwarded to him from his previous address. Finally, another respondent stated that this would be an example of "typical postal service."

Another problem with this question was that some respondents did not understand what the terms 'cover' and 'back cover' were referring to. Many respondents flipped through the forms, looking in various places for what they thought could be construed as a 'cover.' For example, respondents looked on various pages throughout the forms for some indication as to how to proceed. They even went as far as to look on the envelopes. Some respondents did eventually figure out what the 'cover' was, thus enabling them to correct the address accordingly. Other respondents were not able to figure this out. Oddly enough, some of these respondents marked the box to indicate that the address printed on the form was incorrect, but they never located the proper place on the form to make corrections. This indicates that at some point, they must have noticed the address printed on the form and made the decision that it was incorrect. When exactly these respondents noticed the address is questionable. Some respondents read the address aloud, or commented on seeing an address, when the form was in the original mailing package. Other respondents may have noticed the address when they flipped through the form.

Another aspect of this question that proved troublesome was that respondents did not know exactly where on the 'cover' or the 'back cover' they were supposed to write their corrections. One respondent unnecessarily agonized over this. He spent a great deal of time locating the cover and figuring out where the address was printed. The respondent then did not know where exactly to write his correct address. This was especially true on the rollfold, since it had so much more space on which to write. The respondent initially wrote his address way above the bar code, under the impression that the address would need to show through the window of the return envelope. When the respondent placed the form in the envelope and the address did not show through the window, the respondent decided to erase what he had written. The respondent then rewrote his address closer to the bar code. This confusion and extra work is unnecessarily burdensome for respondents.

In general, our cognitive interviews indicate that the address question needs rewording. There is too much information in this question for respondents to comprehend and follow. Furthermore, 'cover' and 'back cover' need to be clearly defined. Most importantly, the rationale behind asking this question needs to be explained to respondents or they may not even attempt to answer the form. Instead, they may forward it.

<u>Inquiries about the housing question</u>. Two respondents questioned why the housing item appeared on the form. These respondents did not see the relevance of this bit of information when they were under the assumption that the purpose of the form is to collect details about people living in a particular household.

<u>Misunderstanding of residence rules</u>. Overall, respondents did not have many problems with the residence rules. There were two respondents, however, who may have misunderstood or needed more clarification on these rules. One respondent included his son, who is away at college, in the household count on the first form he filled out (the accordion). The respondent only read the portion of the question that asked, "How many people were living or staying in this house or apartment on March 4, 2000?" After the respondent read this, he asked the interviewer, "Do I count a child away in college?" Then he stated, "I would count him." This is precisely what the respondent did. The respondent indicated that there were seven people in his household. He did not read the residency rules when he filled out this form. When the respondent filled out the second form (the rollfold), however, he did read the residency rules. The respondent commented, "Let me read that again [the listing instructions]. I gotta exclude my son this time. It would be 6 [people] instead of 7 this time. It's very clear and concise this time."

Another respondent included his sister in his household count. He did so with some reservation, though. The respondent explained that his sister is currently traveling around the United States, but her mail and her telephone calls are received at his house. The respondent determined that this would mean his sister 'officially' lives with him. When the respondent was further along in the interview, he mentioned that he has an 'adopted' sister [his sister's close friend] who spends more time at his house than at her parent's house. Again, the respondent questioned whether he should include her as part of his household. The respondent did not include her because he said he would assume that she would be counted at her mom and dad's house. He also said that if this were the actual

census, he would check to see if they planned on including her.

Both respondents who made a mistake did so while filling out the first form they were handed. This problem, however, may have been the result of the interviewing method. We got the impression from our interviews that respondents were more likely to interact with the interviewer (i.e., reading aloud, asking questions, etc.) while they were filling out the first form. We speculate this interaction may have interfered with these respondents' concentration. However, when respondents were filling out the second form, it appeared as though they became less concerned with interaction. This may have enabled them to focus on the content of what they were reading more, thus eliminating the potential for error.

<u>Please open the form</u>. A number of respondents pointed out that this instruction in 4 on the accordion form didn't make sense because they already had the form open by this point. Originally this instruction had said, 'Please open this form by pulling the last page to the right:' and a picture had been provided to help respondents understand what was meant by this (that is, that they were supposed to open the form flat and lay it out in front of them). The original thinking behind the open-the-form-flat instruction had to do with respondents not understanding that they were supposed to report about all of their household members not just themselves in the last round of questionnaires. It was just one of many modifications we made to try and improve coverage.

Since, however, respondents didn't have a problem understanding that they were supposed to report for all of their household members with the current round of questionnaires, we should just drop the 'open the form and' part of 4.

<u>Person 1 wording.</u> A few respondents objected to the 'Person 1' references in questions 5 through 9 in the accordion. 'Person 1' was referred to only in the heading, not in the questions on the rollfold. The questions on the rollfold always use the reference 'this person.' Respondents seemed to find this wording more natural, and the accordion's wording more awkward, especially after having filled out the rollfold first. For instance, one respondent read question 5, then hesitated. The respondent explained that she had reached a block and that she had a problem with the reference [Person 1]. She thought the 'Person 1' reference was impersonal.

<u>Instruction for Ethnicity and Race Questions</u>. To begin with, most respondents read the lead-in instruction to the ethnicity and race questions as, "It is important to answer questions 5 and 6," as opposed to the way the instruction is actually worded on the form. This suggests that this instruction's present wording is awkward and should be changed.

At least one respondent even said so.

Some respondents wondered why Spanish/Hispanic/Latino origin was the subject of a separate question. One respondent expressed some disapproval at singling out a particular ethnic group. She described this as prejudicial. In contrast, another respondent commented that he liked the format of the question because in his opinion, it did not single out one ethnic group. Only one of our respondents had difficulty answering this question. Interestingly enough, he did not express confusion consistently throughout the form. The first time through the form, the respondent correctly marked the 'No, not Spanish/Hispanic/Latino' answer choice for himself and for his unmarried partner. While filling out the second form the respondent commented that he could not mark an answer because none of the responses applied to him or his unmarried partner.

In terms of the race question, a few respondents strongly objected to the term 'Negro' being included in the answer choices. One respondent stated that the term offended her to the point where she left the question blank for every person in her household. She also stated that she would write a letter to the Census Bureau explaining the history behind the word 'Negro' and why it is inappropriate to use today.

One respondent had difficulty with the write-in answer spaces for the race question. He thought these boxes separated the section into separate questions. This is an example of the Gestalt Grouping Laws, that is, this respondent extracted meaning from how the information was formatted on the page (Jenkins & Dillman, In press). The respondent had no difficulty marking the box to indicate that he is 'Black/African Am., or Negro.' However, when the respondent came across the write-in boxes, he provided an answer that he thought would answer a question that he had fabricated. For example, the respondent wrote something under 'Indian,' 'Other Asian,' and 'Some other race.' The respondent was inconsistent with his answers. He answered the accordion form first, and he handled these questions correctly, leaving all the write-in boxes blank. However, when he was filling out the rollfold form, he started to fill in the write-in boxes.

<u>Relationship Question</u>. Very few respondents had difficulty with this question. Some respondents, however, did experience some confusion. Two respondents felt the need to underline the relationship that was more appropriate in the category that they chose. For example, one respondent underlined wife and natural-born. However, she never actually marked the boxes to the left of the answer choices. Another respondent neglected to mark the appropriate box, "Other relative." The respondent did however, correctly write in the relationship in the boxes provided. Finally, one respondent thought he had to mark the appropriate relationship as well as print that relation in the write-in box provided. These

problems are troublesome as they will increase nonresponse rates.

<u>Turn the form over to continue instruction.</u> These instructions appear on both the accordion and the rollfold, although in different locations. Nonetheless, virtually none of our respondents turned the form over entirely. Instead, respondents simply turned the page to continue. Actually, only one respondent opened the form up so that the entire form was spread out in front of her. Most respondents treated the forms as booklets (having a spine). This was further illustrated by the fact that many respondents read the instructions as "Turn the page to continue." Therefore, the 'Turn the form over to continue' instructions did not make sense to respondents. The instructions do not reflect the natural inclinations about how respondents handle the form.

<u>Bar Code</u>. Several respondents inserted the forms in the return envelopes incorrectly in that they did not have the bar code showing through the window. A few respondents noticed and fixed their errors. Other respondents, however, did not realize their mistakes. One of the problems here was that respondents did not notice the box on the back of the return envelope which contains the instructions on how to place the form in the envelope. This instruction box was out of respondents' visual paths. In addition, this problem was confounded by respondents are placing their expectations upon the situation. Respondents often thought that their addresses were supposed to show through the window rather than the bar code. In these cases respondents may have inserted the bar codes correctly, but then thought they had made a mistake. They either repeated their mistake until they got it right, or they just gave up.

REFERENCES

Brandt, H.F. (1945) The Psychology of Seeing, New York: The Philosophical Library.

- Dillman, D.A., Jenkins, C., Martin, B. and DeMaio, T. (1996) "Cognitive and Motivational Properties of Three Proposed Decennial Census Forms," Report Prepared for the Bureau of the Census, Washington DC., Census Bureau Memorandum May 29, 1996.
- Jenkins, C.R. and Dillman, D.A. (In Press) "Towards a Theory of Self-administered Questionnaire Design" in L. Lyberg, P. Biemer, M. Collins, E. DeLeeuw, C. Dippo, N. Schwarz, and D. Trewing (Eds.), *Survey Measurement and Process Quality*, New York: Wiley-Interscience.
- Rubin, E. (1958) "Figure and Ground," in D. C. Beardslee and M. Wertheimer (Eds.) *Readings in Perception*, New York: D. Van Nostrand Company, Inc.

Question	Response	Numbers
a. In general, did you have	Roll	0
any difficulties with either of the forms?	Accord	1
	Neither	11
	N/A	0
b. Is one of them more difficult to fill out than the other one or are they about	Roll	0
	Accord	1
the same?	Same	11
c. Suppose in the next census	Roll	5
we can only use one of these forms, which one of these	Accord	5
forms do you think we should use?	Either	2
d. Did you notice these pictures and messages as you were filling out the form?	Yes	7
	No	4
	N/A	1
e. Does printing these	More Likely	2
pictures and messages on the census form make you more	Less Likely	0
likely, less likely, or have no effect on whether you would	No Effect	10
complete and return it in the next census?	N/A	0
f. If we put these pictures and messages on the other census form we have here, would that make you more likely, less likely, or have no effect on whether you would complete and return that form?	More Likely	2
	Less Likely	0
	No Effect	10
	N/A	0

Table 2. Distribution of Responses by Debriefing Question.

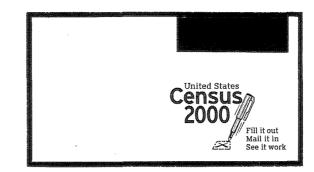
Question	Response	Numbers
g. Reactions to sun and	Favorable	10
cloud icon.	Unfavorable	1
	Neither One	1
	N/A	0
h. Reactions to coin in building icon.	Favorable	8
	Unfavorable	1
	Neither One	3
	N/A	0
i. Reactions to scales of	Favorable	6
justice icon.	Unfavorable	5
	Neither One	1
	N/A	0
j. Reactions to computer	Favorable	10
with apple icon.	Unfavorable	0
	Neither One	2
	N/A	0
k. Reactions to medicine bottle icon.	Favorable	8
	Unfavorable	2
	Neither One	2
	N/A	0
1. Is one of the typefaces	Roll	2
easier to read then the other typeface, or are they about the same?	Accord	4
	Same	6
	N/A	0

Question	Response	Numbers
m. In general, how much do you like the color of these forms?	Very Much	5
	Somewhat	3
	Not at all	1 .
	Color doesn't matter	2
р 	N/A	1
n. Do you prefer one of the	Roll	4
color combinations more so than the other?	Accord	5
	Neither	3
o. Do you prefer one of these	Roll	3
colors over the other? (Green questionnaire from the last	Accord	3
time introduced)	Green Booklet	2
	No preference	2
	Both Roll & Accord	1
	N/A	1
p. Does one of these colors motivate you to fill out the form more than the other color?	Roll	1 .
	Accord	2
	Green Booklet	0
	No difference	8
	N/A	1
q. Does it look to you as	Roll	3
though it would be easier to read one of these forms than the other because of its color, or do they look about the same to you?	Accord	1
	Green Booklet	0
	No difference	7
	Both Roll & Accord	1
	N/A	0

Question	Response	Numbers
r. Which one of these makes the best cover page?	Start Here	4
	Official	2
	Logo	6 .
	N/A	0
s. Would one of these cover	Start Here	0
pages motivate you to respond to the census right away, or wouldn't the cover	Official	1
	Logo	4
page make any difference?	No difference	7
	N/A	0
t. We have two envelopes	Seal & White	2
that could be used with either of these census forms. Do	Logo & Color	8
you prefer one of these	Neither	2
envelopes over the other?	N/A	0
u. Would you be more likely to notice one of these envelopes than the other?	Seal & White	0
	Logo & Color	11
F	No	1
v. Did you notice any of the	Yes	11
"Your response is required by law messages?"	Logo N/A Start Here Official Logo No difference N/A Seal & White Logo & Color Neither N/A Seal & White Logo & Color Neither N/A	1
w. Does either envelope look	Seal & White	6
like junk mail?	Logo & Color	0
	Both	2
	Neither	4
	N/A	0
x. Does either envelope look	Seal & White	4
like mail from the government?	Logo & Color	1
	Both	7
	Neither	0

Question	Response	Numbers
y. Do you prefer one of these envelopes over the other? (The official envelope from last time is introduced.)	Seal & White	0
	Logo & Color	7
	Original	3
	No preference	3
	N/A	0
z. Would you be more likely	Seal & White	0
to open one of these envelopes than the other?	Logo & Color	2
L	Original	2
	Either Seal & White or Logo & Color	1
	No	7
	N/A	0





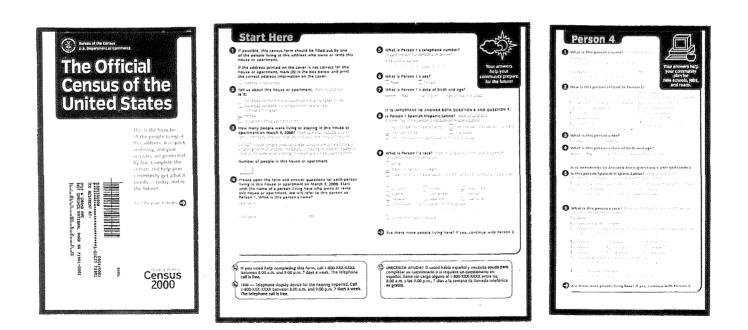
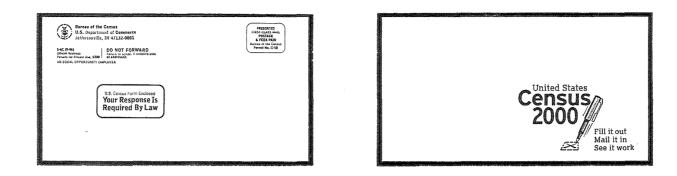


Figure 1. Reduced, color copy of the accordion form, displaying front and back of envelope, cover page, the first two pages, and the back page. The original form is a 22" x 10-3/8" sheet of paper folded in an accordion fashion to make a 5-1/2" x 10-3/8" booklet.



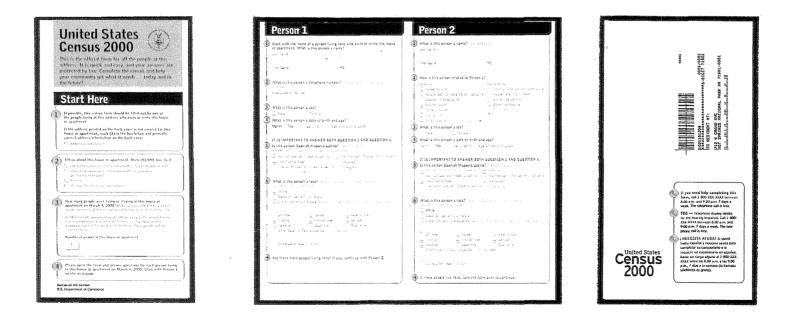


Figure 2. Reduced, color copy of the rollfold from, displaying front and back of envelope, cover page, the first two pages, and the back page. The original form is a 22" x 10-3/8" sheet of paper folded in a rollfold fashion to make a 5-1/2" x 10-3/8" booklet.

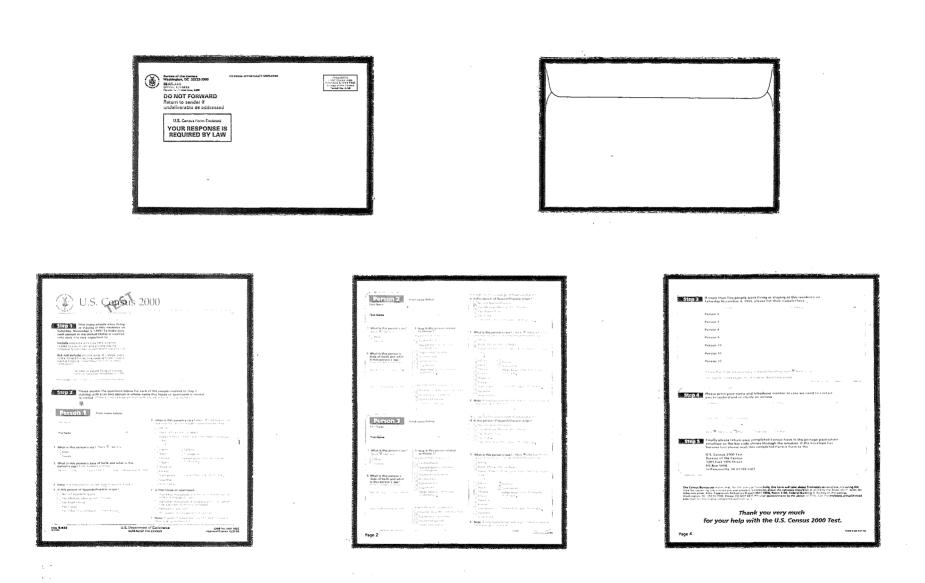


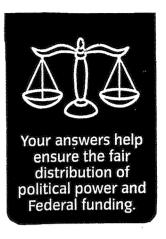
Figure 3. Reduced, color copy of the green booklet, displaying front and back of envelope, cover page, second page, and back page. The original form is a booklet with four, 8-1/2" x 11" pages.



1. Sun and Cloud Icon



2. Coin in a Building Icon



3. Scales of Justice Icon

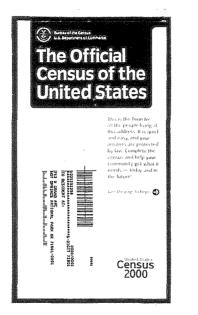


4. Computer with Apple Icon



5. Medicine Bottle with Thermometer Icon

Figure 4. Pictures and messages from the accordion form.



,





Figure 5. Reduced, color copies of the 'Official,' 'Start Here,' and 'Logo' cover pages.