Meeting 21st Century Demographic Data Needs—Implementing the American Community Survey

Issued June 2004

Report 9: Comparing Social Characteristics With Census 2000

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EXECUTIVE SUMMARY

The American Community Survey (ACS) is one of three program components required to achieve the 2010 Census reengineering strategy goals. The ACS replaces the Census Sample, the once-a-decade collection of detailed social, economic, and housing characteristics for demographic groups, that occurs as part of the decennial census, with an ongoing survey that produces annual and multi-year estimates of these same characteristics.

The Census 2000 Supplementary Survey (C2SS) was conducted as part of Census 2000 to demonstrate the operational feasibility of ACS methods. To date reports have been issued addressing questions of conducting the ACS coincident with the decennial census, technical performance, the implications of changing the ACS to a voluntary survey, and comparisons of general demographic and economic characteristics to Census 2000 results.

In this report, we compare C2SS estimates to those produced by the Census 2000 Sample for selected social characteristics to look for substantive differences, possible explanations, and supporting evidence about which is likely to be better in the event we find differences. Specifically, the report includes comparisons of the social profile characteristics for:

- School enrollment;
- Educational attainment;
- Marital status;
- Grandparents as caregivers;
- Veteran status;
- Disability;
- Place of birth, citizenship status, and region of birth;
- Language spoken at home; and
- Ancestry.

We produced this report to help educate users of these social data and ease the transition from the decennial census sample estimates to the ACS estimates.

Major Findings

The C2SS distributions of social profile estimates at the national level were in general substantially the same as those produced from the Census 2000 Sample. While 72 percent (55 of 72) of the C2SS social profile percentages examined in this report were statistically different than the corresponding Census 2000 Sample estimates, the vast majority were not substantive differences. Forty of those differences were less than half of a percentage point, and only seven of them were one percentage point or more. Five of those seven differences greater than one percentage point were associated with the disability and ancestry tables–the other eight tables combined for only two differences of one percentage point or more.

The C2SS and Census 2000 Sample distributions from selected sub-national areas had few substantive differences. We compared the distributions from C2SS and the Census 2000 Sample for 18 diverse ACS test counties and found that 22 percent of the time, the differences were statistically different, but only eight percent of the time, the differences were two percentage points or greater. This is important to understand as users of social characteristics data begin to move from Census 2000 Sample data to ACS data. Data users would in general come to similar conclusions, implement similar programs, and allocate funds in a similar way regardless of which data set they used. For example, for the 18 counties studied, if the Census 2000 Sample said a characteristic was high, generally so did the C2SS. However, more research comparing Census 2000 Sample and C2SS data at sub-national levels, such as states or metropolitan areas, would be useful to more fully understand ACS data and how it relates to decennial census data.

Data users should be aware of substantiative differences between the C2SS and Census 2000 Sample estimates found for two data items: Disability and Ancestry. For disability, we found that the estimate of the percentage of people 21-64 years old with a disability was much lower in the C2SS than in the Census 2000 Sample (13.8 percent versus 19.1 percent), and was notably lower for people 5-20 years old (6.8 percent versus 8.0 percent). Research by Stern (2003) found evidence to suggest that the differences are largely due to higher reports of two kinds of disability among adults whose data were collected by an enumerator in Census 2000. Specifically, respondents interviewed by a Census 2000 enumerator were more likely than any other to report difficulty going outside home alone to shop or visit a doctor's office and difficulty working at a job or business, even though 75 percent of the people reporting difficulty working at a job or business were employed.

For ancestry, we found a significantly higher percentage of reporting of almost every ancestry group in the C2SS compared to the Census 2000 Sample. The Census Bureau does not impute an ancestry when the ancestry question is left blank, and the C2SS had more complete reporting of ancestry than the Census 2000 Sample (88.3 percent of people in the C2SS had at least one ancestry reported compared with 81.0 percent in the Census 2000 Sample).

The C2SS social characteristics data were generally more complete than the Census 2000 Sample data, largely due to more complete data collected during the follow-up stage (see Appendix A). The C2SS, which used ACS methodology, had well-trained professional interviewers to collect follow-up data, and those interviewers were equipped with computer-assisted telephone interviewing (CATI) and computer-assisted personal visit interviewing (CAPI) instruments. This helped lead to more complete data from the C2SS. The average item allocation rate for the data items in this report for C2SS was 5.4 percent; for CATI and CAPI data, it was 3.2 percent. For the Census 2000 Sample data, the average item allocation rate was 7.5 percent, 9.3 percent for data collected by interviewers.

Additional research is recommended to further our understanding of current ACS methods. This report only looks at differences for items and categories in the social characteristics profile table at the national level and for 18 counties across the country. Given that we found few substantive differences between the C2SS and the Census 2000 Sample at

either the national or sub-national level, additional analysis should focus on developing a further understanding of all methodological aspects of the ACS, including such things as the effect of using multiple modes for data collection. Similarly, data should be examined by sex, age, race, Hispanic origin, and other key demographic items, and at additional sub-national levels. This report suggests examination of a few specific items, such as disability (which had substantial differences between the C2SS and the Census 2000 Sample) and grandparents as caregivers (which had high allocation rates for both the C2SS and the Census 2000 Sample for both self-enumerated and interviewer-collected data).

1. OVERVIEW AND PURPOSE

This report is one in a series of reports designed to document the differences that exist between the C2SS and the Census 2000 estimates. The first report, Comparing General Demographic and Housing Characteristics, compared results for sex, age, relationship, Hispanic origin, race, tenure, and housing occupancy status (U.S. Census Bureau, 2004). The second report focused on the comparison of distributions for selected economic characteristics such as Employment status and Income for the C2SS and the Census 2000 Sample. This report focuses on the comparison of distributions for selected social characteristics such as educational attainment and language spoken at home. In this analysis we compare the C2SS distributions to the Census 2000 Sample distributions, look for substantive differences, and for those found, look for possible explanations and supporting evidence. This report also helps educate users of these social data to make the transition from the decennial census sample estimates to the ACS estimates.

This report compares tables in the Census 2000 Sample Profile of Selected Social Characteristics (Table DP-2) with the comparable C2SS data profile tables. The analysis is restricted to data for the household population; excluding the group quarters population. Comparisons include single-year (2000) estimates at the national level and for selected counties. The county-level analysis was done in an effort to begin to understand what happens to social data at sub-national levels. We describe the methods used for this analysis in detail in Section 4 of this report.

Data on social characteristics such as the level of education of the population, the disabilities they have, and what languages they speak at home provide critical information needed by federal, state, and local planners. Federal budget formulation and fund allocation require these data. State and local governments, non-profit organizations, and businesses use data about these items to plan, budget, and pay benefits. Corporations and individuals use data on language, marital status, and ancestry to develop business plans and to determine the demographic characteristics of areas where they might want to expand or start businesses. It is therefore important for users of these social data to understand how the ACS data might differ from the data historically produced from the decennial census sample.

In 2004, the Census Bureau will release these additional comparison reports:

- A detailed comparison of the Census 2000 General Demographic and Housing Characteristics (Table DP-1) with the C2SS at the national level. This profile includes such items as sex, age, relationship, Hispanic origin, race, and tenure (See U.S. Census Bureau, 2004).

- A detailed comparison of the Census 2000 Sample Profile of Selected Social Characteristics (Table DP-3) with the C2SS at the national level. This profile includes such items as income and employment status.

- A detailed comparison of the Census 2000 Sample Profile of Selected Physical and Financial Characteristics of Housing (Table DP-4) with the C2SS at the national level. This profile includes such items as units in structure and mortgage status.

- A detailed comparison of all Census 2000 Profile Table estimates with three-year ACS estimates for the 36 ACS test counties and their tracts.

- A detailed comparison of quality measures between Census 2000 Sample estimates and three-year ACS estimates for the 36 test counties. It includes estimates of self-response, unit and item nonresponse, and sample completion.

See U.S. Census Bureau (2004) for a complete explanation of the comparison studies project.

2. BACKGROUND

The ACS replaces the decennial census national sample survey that evolved over many decades for collection of general demographic and housing data and more detailed social, economic, and housing data from selected people and housing units across the nation. The decennial census sample has been in existence for seven censuses and for each of these decennial censuses has had unique questionnaires, data collection procedures, and sampling and estimation methods.

In the 1940 Census, a 5 percent probability sample of the population was introduced in an effort to collect more information without a noticeable increase in respondent burden. Since the census contacted the entire population one time every 10 years, it provided the perfect opportunity to introduce sampling and conduct a large national survey. The modern decennial census sample was introduced in 1960, when the primary sampling unit was changed to the housing unit and the sample increased to 25 percent. Data from these samples were provided for areas as small as tracts, and the more extensive use of sampling introduced moderate amounts of sampling error into the estimates. In an attempt to control the variance, ratio estimation of the sample data to the full census counts was introduced instead of the simple weighting by probabilities of selection used previously.

Interpenetrating samples of 15 and 5 percent were used in the 1970 census but have not been used since. Differential sampling was introduced in 1980, selecting 1 in 2 units in sparsely populated areas instead of 1 in 6 to produce more reliable estimates. A third rate of 1 in 8 was introduced in the 1990 census and a fourth rate of 1 in 4 was added in 2000 (See Griffin, Love, and Obenski, 2003 for more details).

The ACS is the next chapter of this 70-year history of census samples. It represents a major innovative step in meeting the nation's need for the kind of information that has only been available through the decennial census samples. The ACS will produce estimates of social, economic, and housing characteristics of the Nation annually by adopting the concept of continuous measurement and spreading a sample of about 3 million housing units every year

over twelve months. The ACS will use the best mail survey techniques combined with computer-assisted technology and a permanent interviewing staff.

The C2SS and Census 2000 used similar methods of data collection but adapted them to meet their unique goals and very different environments. Census 2000 relied heavily on the mail to enumerate the population in housing units. Follow-up interviews were conducted by personal visit to complete the enumeration of unresponsive households and vacant housing units. The mailout and enumerator delivery of pre-addressed short and long form questionnaires occurred in March of 2000, and field follow-up operations took place from the end of April through August. All mailed-back questionnaires were returned to one of four processing centers for data capture, and raw data files were sent to Census Bureau headquarters for post-capture processing. The general demographic and housing characteristics, or "100 percent" data, derived from responses found on both short form and long form questionnaires, were captured and processed first to meet the legal deadlines for providing apportionment and redistricting counts to Congress and the states. The capture of "sample" data collected on Census long form questionnaires was completed once the "100 percent" capture was finished.

The C2SS used the following ACS methods: questionnaire mailout, telephone, and personal visit data collection methods over a rolling three-month time period, collecting data from twelve independent monthly samples of addresses every year. Each month a unique national sample of addresses receives an ACS questionnaire. Addresses that do not respond are telephoned during the second month of collection when a phone number is available, and personal visits are conducted during the third and last month of data collection for a subsample of nonresponding units. Data are collected and captured continuously throughout the year, and data products are released every year, including single-year, 3-year, and 5-year accumulations of survey estimates, depending on the size of geographic areas.

The distributions shown in this report come from information collected in the year 2000. Two distinct ACS data collection activities took place during this time: (1) a national sample of 1,203 counties was selected and surveyed using ACS methods, and (2) the ongoing collection from 36 ACS test counties. Together, these data for an initial sample of almost 900,000 households produced the C2SS estimates compared with the Census 2000 Sample estimates in this report.

3. INTRODUCTION

This report documents the comparison of the C2SS and the Census 2000 Sample, also known as the census long form, estimates for selected social characteristics for the household population of the Nation in 2000.

3.1 Social characteristics from the Census 2000 Sample provide vital information about the people of our Nation

The social questions included in the Census 2000 Sample provide a vital measure of general social circumstances in the United States. For example, these data are used to determine the educational levels and to assess the need for various types of assistance. In addition, these data are used in federal allocation formulas. At the community level, these data guide funding for social services distributed to local agencies, identify local areas eligible for grants to run job training and other employment programs, and are used to allocate funds to areas requiring housing assistance and home energy aid. These data are also used at the local level to distribute funds to improve the education of socially disadvantaged children. Currently this information is only available every 10 years.

3.2 ACS estimates of selected social characteristics will provide critical information throughout the decade

Having annual data on social characteristics from the ACS will give federal, state, and local planners more current data for monitoring the social situation in their jurisdiction over time. This will enable them to use resources more effectively and secure adequate funding for federal, state, and local projects, better assisting those most in need. For example, the ACS will provide estimates of the number of elderly in poverty, data on levels and types of occupations by race, and information on the social characteristics of state and local areas on a yearly basis. Collecting these data continuously throughout the decade will allow planners in all jurisdictions to track changes in these and other important socioeconomic distributions.

3.3 Some differences are expected between the Census 2000 Sample and the C2SS

An enumeration of the entire population and housing which includes a large survey for one-sixth of the units is very different from a stand-alone sample survey of detailed housing and socioeconomic characteristics. The different purposes and relative sizes of the undertakings guided the methodologies used to collect and process data. Before discussing differences, we should say here that both the decennial census and the ACS serve similar purposes of providing data to meet legal and programmatic needs. It is important to note that both the Census 2000 Sample and the C2SS were quite successful. The Census 2000 Sample achieved higher mail return rates (Stackhouse and Brady, 2003) than the C2SS but the unit nonresponse, item allocation, and completeness rates were better in the C2SS than those achieved by the Census 2000 Sample (U.S. Census Bureau, 2001).

Census 2000 officially enumerated the Nation's entire population as directed by the Constitution. The results are used for apportionment, redistricting, and to support important legislation such as the Civil Rights Act and the Voting Rights Act. Securing a complete count as of Census Day (April 1 in 2000) is the primary goal of the decennial census and priority is given to designing a census that facilitates this count and ensures that key data are produced by the legal deadlines. At the same time, the decennial census also collected detailed social, economic, and housing characteristics for a sample of households to provide legally-mandated data needed for federal

programs. While Census 2000 benefitted from the publicity and perceived importance of a decennial census which is often described as the "census environment", it's design had to accommodate the tremendous workload and tight operational scheduling constraints; for example, paper questionnaires were used for almost all Census 2000 data collection operations and all data were collected between March and August 2000. As a last resort, Census 2000 allowed proxy responses from people who were not members of the household, such as neighbors, to collect critical count data by the required deadlines.

In contrast, the ACS is designed to collect these same detailed social, economic, and housing data to measure the characteristics of all areas as a yearly average. The C2SS was based on an initial housing unit sample of approximately 900,000 and used ACS methods and residence rules to collect data throughout the year using a combination of mail-out/mail-back questionnaires, Computer-Assisted Telephone Interviewing (CATI), and Computer-Assisted Personal Interviewing (CAPI). The large yearly sample size was broken down into manageable monthly workload assignments that could be completed by our permanent field staff. The ACS uses a unique concept of "current residence"given the monthly samples distributed throughout the year, rather than the census concept of "usual residence" as of April 1.

ACS methods require that information collected from sample households must come from a household member. Unlike the decennial census, no proxy respondents, such as neighbors, are allowed to answer for a sample household. However, like the decennial census, one household member (called a within-household proxy respondent) could answer the survey for all household members in the ACS. The use of within-household proxy respondents may contribute to differences in Census 2000 Sample and C2SS estimates of social characteristics when the respondent answers in error for others in the household.

The Census 2000 Sample and the C2SS data have levels of both sampling and nonsampling error associated with them. The following section describes the methods used to conduct this comparison study, and how different designs and methods may explain observed differences between C2SS and the Census 2000 Sample estimates.

4. METHODOLOGY

This section describes the methods used to compare the C2SS and the Census 2000 Sample estimates. The tables included in this report compare final published C2SS estimates with final Census 2000 Sample estimates for the household population only. The final published C2SS estimates were controlled to the Census 2000 counts of population and housing at the county and sampling stratum levels. Specifically, population controls increased the national C2SS survey estimate of the household population by about 3.2 percent and the estimate of total housing by about 0.4 percent. See U.S. Census Bureau (2000) for a more detailed discussion of the use of population and housing controls in the C2SS.

Comparisons consist of percentage point differences between the two distributions. Differences are displayed, along with margins of error representing the 90 percent confidence interval of the

differences. C2SS estimates that differ from the Census 2000 Sample estimates beyond sampling error are identified. Although only national data tables are included, selected sub-national comparisons are geographically displayed for 18 of the 36 counties included in the ACS test sites for the past several years. We examined these data to start looking at how C2SS and Census 2000 Sample estimates compare at lower geographic levels.

We examined C2SS and Census 2000 methods to assess the potential effects of nonsampling error on either the Census 2000 Sample estimates or the C2SS estimates. Coverage, nonresponse, processing, and measurement errors were studied to learn if observed differences reflect problems inherent in the design of the ACS. In addition, the effect of methodological differences such as residence rules, reference periods, and the time frame for data collection were considered. However, because of the interdependencies among types of errors and methods, the relative effects of these differences cannot be determined. Consequently, this report does not definitively attribute identified differences to specific methods or practices.

4.1 Methods were developed to identify differences

This report contains tables comparing the C2SS and the Census 2000 Sample estimates for the following social characteristics that are included in the social characteristics profile table:

- School enrollment;
- Educational attainment;
- Marital status;
- Grandparents as caregivers;
- Veteran status;
- Disability;
- Place of birth, citizenship status, and region of birth;
- Language spoken at home; and
- Ancestry

Before conducting this comparison, we considered two factors. First, unlike Census 2000, the C2SS did not include interviews of the group quarters population.[1] To make appropriate comparisons, the group quarters population data were removed from the Census 2000 files resulting in tables that included only the household population. Second, since the Census 2000 Sample and the C2SS, as surveys, were subject to sampling error, comparisons using these estimates had to take into account sampling variability. Tests for statistical significance of the differences in the estimates were conducted and the results are shown in the tables. At the national level, the Census 2000 Sample and C2SS variances were quite small, resulting in many statistically significant differences between the Census 2000 Sample and the C2SS profile distributions, although most differences are not substantive (See Section 4.1.1 for more details).

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[1] In general, all people are classified as living either in housing units or in group quarters. A housing unit is defined as a house, apartment, a mobile home or trailer, a group of rooms or a single room occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. While the C2SS did not collect data from group quarters, the ACS will when the survey moves to full implementation.

4.1.1 National distributions of characteristics from the C2SS and the Census 2000 Sample were compared

The scope of this report is a comparison between tables in the Census 2000 Sample Profile of Selected Social Characteristics (Table DP-2) and the comparable C2SS data profile tables. The analysis includes data for the household population and excludes data for the group quarters population. The table stubs are reproduced as they appear in the C2SS Profile tables. This section describes the contents of those tables, how they were produced, and how they should be interpreted.

An example of the table for school enrollment follows. The first row of the table, which is shaded, shows the target populations rounded to the nearest 100,000. This is the universe used to calculate the percentages in the other rows–in this case, people living in households who are three years old or older and who are enrolled in school.

The distribution of the various groups or categories across this target population fall down the columns. The "Census 2000 Sample Estimate" column is the distribution for each specified group based on the Census 2000 household population. In the sample table that follows, 6.7 percent of the universe reported enrollment in nursery school or preschool in the Census 2000 Sample. The "C2SS Estimate" column contains the same information from the C2SS; in this case, 6.0 percent. The "C2SS-Census 2000 Sample" column is the difference between the C2SS and the Census 2000 Sample percent distributions for that row. After calculating these differences, the percentages were rounded to avoid over emphasizing very small and insignificant differences in these distributions and for this reason the "Difference" shown may not always be the same as "C2SS Estimate" minus "Census 2000 Sample Estimate". A difference of 0.0 does not necessarily mean there was no difference–it means that the difference was less than 0.05 percent.

Example Table. School Enrollment, National Level Distributions (C2SS compared with the Census 2000 Sample)

School Enrollment	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 3 years and over enrolled in school	73,900,000	72,600,000			
Nursery school, preschool	6.7	6.0	-0.7	± 0.1	Yes
Kindergarten	5.6	5.4	-0.2	± 0.1	Yes
Elementary school (grades 1-8)	45.4	45.4	-0.0	± 0.2	No
High school (grades 9-12)	21.7	21.7	0.0	± 0.1	No
College or graduate school	20.6	21.5	0.9	± 0.3	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

To determine if differences were statistically significant, variances were estimated using methods designed for a complex sample design, and statistical tests were conducted. The ACS uses replication methods to compute direct estimates of the standard error and controls are used in calculating these estimates. For Census 2000, the generalized variance formula, a simple random sample formula multiplied by a design effect, was used for all proportions. In this report we use a confidence level of 90 percent as the dividing line for statistical significance, and show the resulting margins of error of the differences. A margin of error of the difference of 0.0 indicates that the actual margin of error was less than 0.05 with a negative value indicating a larger Census 2000 Sample estimate. In the last column of the table, we identify when the measured percentage point difference was not within the margin of error.

While more than 70 percent of differences in this report were statistically significant, not all differences that are statistically significant, especially at the 90 percent level, have substantive meaning. Since the two samples responsible for producing the estimates analyzed in this report are extremely large and therefore likely produce significant differences, we developed a yardstick to use in determining substantive differences. In this report, we generally focus the analysis of one or more percentage point differences when discussing national-level comparisons and we consider significant differences of 0.5 percentage points or less in general as not important since this small amount of difference should not effect funding or programmatic decisions. We developed this yardstick to help focus our analysis, though it can vary based on the data item in question and the relative size of the category. For example, for a relatively common characteristic, a 0.5 percentage point difference in the estimates might be small, while for a relatively uncommon characteristic, a 0.5 percentage point difference could be quite large. This general tool, however, is subjective and users can apply their own standards to interpret the data presented in this report.

4.1.2 County-level data were analyzed to assess sub-national results

In an attempt to make a preliminary assessment of what national findings might imply for lower levels of geography, we selected a subset of 36 counties where ACS methods have been tested since 1999 and for which the sample design is consistent with the design planned for full implementation. These counties represent a diverse set of areas that vary in size geographically and demographically, reflecting both urban and rural areas. We selected 18 of the 36 ACS test counties for inclusion because they contain sufficient sample sizes for producing reliable single-year estimates. Details of these 18 counties can be found in Appendix D. For this analysis, an attempt was made to determine if national findings held at the county level for these selected counties or if national-level results masked important county-level results. National findings of no major differences could mean that some counties differed in one direction while others differed in the opposite direction, netting to no difference at the national level. We also expected that minor differences at the national level could mean that some counties had no differences while others had very large differences.

Methods used to produce the national summary tables were also used to produce comparison data for these 18 counties. We calculated county-level Census 2000 Sample and C2SS distributions for only people in housing units and conducted statistical testing to identify

significant differences at the county level. To summarize county-level results, we produced detailed tables for all items and a series of graphs to highlight a subset of the major findings; summary tables are in Appendix E and graphs are presented in the results section for the largest national-level difference in each section.

The graphs included in the results section depict both the degree of differences between the Census 2000 Sample and C2SS estimates and the specific values of the differences. The counties are ordered on the y-axis, by population size. Sevier, TN, the smallest county, is the closest to the origin and Broward, FL, the largest county, is the farthest from the origin. A "•" symbol marks the Census 2000 Sample value and a "▲" marks the C2SS value. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded. All graphs show a range of 50 percentage points, from zero to 50 percent, unless otherwise noted in the report. We should note here that the larger sample sizes in the largest counties make it more likely that differences could be identified as statistically significant than the differences in the smaller counties. Using a slightly modified yardstick to determine if statistically significant differences are substantive, county-level differences of less than 2 percentage points are generally not considered substantive in this analysis (See Salvo, Lobo and Calabrese, 2004). We used this yardstick as an analysis tool; users may develop their own standards for evaluating the data.

Appendix E includes county-level tables similar to the profile tables in the results section. The C2SS and the Census 2000 Sample estimates however, are not provided. The difference between the two estimates (C2SS-Census 2000 Sample) was determined and only the statistically significant differences are displayed. A positive value indicates that the C2SS estimate was greater than the Census 2000 Sample estimate while a negative value means that the C2SS has a lower estimate for this item than the Census 2000 Sample estimate.

4.2 The design and implementation of the C2SS and the Census 2000 Sample methods were examined

This report systematically reviews C2SS and Census 2000 methods to assess whether these methods may have led to differences in results. The fundamentally different purposes of the ACS and Census 2000 led to critical differences in the choice of methods. For example, since the ACS is an on-going monthly survey that has a manageable workload, the Census Bureau uses experienced permanent interviewers, equipped with automated data collection instruments, to collect information from nonresponding units. This was not practical in a decennial census given the need to hire hundreds of thousands of temporary staff to complete this one-time data collection effort in a very short time period. This report considers how well data collection and processing activities were implemented. Nonsampling error (coverage, nonresponse, measurement, and processing errors) and methodological differences such as reference periods may explain some C2SS and Census 2000 Sample differences and are discussed below.

4.2.1 Coverage error was considered

Coverage error--excluding or duplicating a certain group of people or housing units from the survey--is addressed by measures known as completeness rates. These rates indicate the overall adjustments that were needed to bring Census 2000 Sample enumerations placed in the Census 2000 Sample and successful C2SS interviews to the level of the full Census 2000 counts.

Completeness rates have been calculated for the total household population count and for the total housing unit count. The Census 2000 Sample housing unit completeness rate is the ratio of the total housing units placed in the census sample (those meeting the minimal data requirement), weighted by the inverse of their expected probability of selection, to the total Census 2000 housing unit count. Similarly, the Census 2000 Sample household population completeness rate is the ratio of the number of people enumerated in the housing units placed in the census sample, weighted by the inverse of the housing unit's expected probability of selection, to the total Census 2000 household population count. The housing unit completeness rate for the C2SS is the ratio of the survey's interviewed units, weighted by the inverse of their initial probability of selection and subsampling factor if applicable, to the full Census 2000 total housing unit count, while the C2SS household population completeness rate is the ratio of the survey's population in interviewed housing units, weighted by the inverse of the inverse of the housing unit's probability of selection and subsampling factor if applicable, to the full Census 2000 household population count.

The total housing unit completeness rate for the Census 2000 Sample was estimated to be 91.2 percent. The C2SS rate was 93.4 percent. The household population completeness rate for the Census 2000 Sample was estimated to be 91.4 percent, and the comparable C2SS rate was 91.2 percent. These measures show very similar levels of estimated coverage and thus we do not see evidence that coverage error played a role in the differences between the C2SS and Census 2000 Sample estimates examined in this report.

4.2.2 Levels and treatment of unit nonresponse were considered

Unit nonresponse is the failure to obtain sufficient information from a sample unit for it to be considered an interview–a responding unit. Noninterviews are the most commonly recognized form of unit nonresponse. Sample units were not interviewed for reasons ranging from a household's absence during the interview period to its refusal to participate or to provide answers to sample questions.

The level and treatment of unit nonresponse differed between the Census 2000 Sample and the C2SS. The C2SS national weighted unit nonresponse rate was 4.9 percent, which translates into a survey response rate of 95.1 percent. The comparable rate for the Census 2000 Sample was a unit nonresponse rate of 8.8 percent, or a survey response rate of 91.2 percent (Griffin, Love, and Obenski, 2003). To reduce the amount of nonresponse bias introduced into C2SS estimates, sample units that were not successfully interviewed after all three phases of data collection were adjusted for by a series of weighting factors in the estimation process. These adjustments took

into account geography and mode of collection. The Census 2000 Sample estimation process did not use a separate weighting step to adjust for noninterview units as was used in the C2SS.

Subsampling for nonresponse is used in the final personal interviewing stage of data collection for the ACS. A sample of about one-third of the C2SS units that did not respond by mail or CATI were selected for personal visit interviewing. Units were systematically selected and removed from the sample as an operational design to reduce costs. This subsampling resulted in larger variances on survey estimates, especially of the population and housing characteristics heavily represented in the final data collection stage, but it does not introduce a potential bias into the overall results. Research is planned to assess the effect of this subsampling on important survey estimates (Love and Griffin, 2003).

4.2.3 The completeness of data collected at the item level was considered

Item nonresponse is the failure of a responding unit to provide complete and usable information for a data item. It occurs in all types of data collection modes and often for very different reasons. A respondent may omit specific questions or entire sections of the questionnaire, intentionally or unintentionally, resulting in an incomplete mail form. Follow-up interviewers may find an otherwise cooperative respondent unwilling to provide them with sensitive information, such as income. Both the C2SS and the Census 2000 Sample defined item nonresponse in the same way.

Item allocation rates are often used as a measure of the level of item nonresponse, and are included in this report (see Attachment A). These rates are computed as the ratio of the number of eligible people or housing units for which a value was allocated for a specific item to the number of people or housing units eligible to have responded to that item. Only the response records that were considered "interviews" -- those that meet the minimal data criteria -- participated in the edit and allocation process and contributed to the item allocation rates. Both the C2SS and Census 2000 sample data files included an allocation variable for every item that reported the type of edit actions taken on each item and how often they were taken. The information provided by this variable indicated whether the answer to the item was used “as reported,” was assigned based on other information on the same record, or was allocated from another record.

Allocation rates were computed for each of the social items discussed in this report for the C2SS and Census 2000 Sample. These rates are shown separately by mode of data collection in Appendix A. As a rule of thumb when judging levels of item imputation, this analysis considers allocation rates of less than 5 percent as having little influence on final estimates, rates from 5 percent to 10 percent as possibly but not probably influencing final estimates, and rates higher than 10 percent as likely influencing the results (See Schneider, 2004 for details). Appendix A contains tables of item allocation rates related to each profile table. As these data show, item allocation rates were consistently lower in the C2SS than in the Census 2000 Sample.

The C2SS used several specialized methods designed to reduce item nonresponse that were not used in Census 2000. These included the use of the telephone to follow up with households that

returned their C2SS mail questionnaire with missing or inconsistent responses. In addition, current surveys like the ACS use computerized data collection instruments and experienced interviewers to conduct interviews. The C2SS interviewers were trained on techniques to help convince reticent respondents to cooperate with the survey, and used computer-assisted instruments (used for telephone and personal visit follow-up). These instruments were programmed with internal edits to assess consistency and reasonableness of responses and to automatically skip to the correct question based on answers provided during the actual interviews. These checks of related information during the interview process decreased the amount of inconsistent and missing data that the final content edit and allocation programs had to correct. For some items, the instruments were very successful in reducing the need for imputation in the C2SS CATI and CAPI modes (Love, 2004).

The Census Bureau's subject-matter experts designed the program edits for those instances in which allocation was required. While some of the edit and allocation methods used in the C2SS differed from those used in the Census 2000 Sample, the basic edits were very similar. For example, the edits used for income were the same for C2SS and the Census 2000 Sample; however, pre-edits were added for Census 2000 Sample income entries to ensure that the optical character recognition (OCR) equipment and the keyers interpreted responses similarly. These additional edits were not required for the C2SS as keyers completed all data capture activities (Posey, Welniak, and Nelson, 2003). Similarly, different methods were used to code industry and occupation entries for the C2SS and Census 2000 Sample. Details of these differences are discussed in the results section.

4.2.4 Measurement and processing errors may explain some observed differences

Measurement and processing errors can occur for a variety of reasons and are the consequence of errors during the data collection and data processing stages of the survey. Biemer et al. (1991) describe measurement error as having four primary sources: the questionnaire, the mode of data collection, the interviewer, and the respondent. This report considered each of these sources as possible explanatory information when differences were detected. Specifically, we considered different question wording, different interviewer training, and different respondent tools for completing a form or interview. For example, an instruction booklet was mailed with each C2SS mail questionnaire to help respondents answer the question but this booklet was not used for Census 2000.

Measurement error manifests itself in two broad ways–response and interviewer errors. Response error occurs if a respondent does not interpret the meaning of a question as intended, or fails to recall the information accurately. Interviewer error can also be a source of systematic measurement error if interviewers are not properly trained, if they misinterpret their procedures, or if they implement procedures incorrectly. Response error, in the form of variance or bias, can result because of questionnaire design or because respondents simply find the concepts complex and undefined. Questionnaire presentation, the way a question is asked, and the response categories provided can affect, either individually or in tandem, how a respondent answers a question. Differences in presentation and wording of some questions existed between the C2SS and the Census 2000 Sample, and may contribute to differences in estimates. For example, the

format of the response categories for the commuting to work item differed for space reasons; we do not know for sure if this difference played a part in the slight differences seen in the distributions but they may have had an effect. Appendix B includes facsimiles of the social questions as they appeared on the C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample follow-up questionnaires, and the C2SS data collection instruments.

Response error can also occur when the person who provides the information is not the best source. There were two ways this error could have manifested itself. For Census 2000 nonresponse follow-up interviewers took responses from non-household members such as neighbors (referred to as "proxy" responses) as a last resort to complete data collection. In Census 2000, about 15 percent of the occupied Sample nonresponse follow-up enumerations were based on proxy respondents (Moul, 2002). The C2SS did not accept proxy interviews. For both Census 2000 and C2SS, one household-member provided information for all household members. Error may occur if the person interviewed does not provide accurate information for each household member, whether done intentionally or unintentionally. The potential for response error is of particular concern for this report given that data on employment and income may be more difficult for one person to answer for all household members.

Interviewer error is another source of measurement error that could contribute to differences. Because of the on-going nature of the ACS, the C2SS interviewers were more intensively trained and generally have more experience than interviewers recruited for the decennial census. In addition, the C2SS interviewers also had the benefit of automated instruments that reduced the potential for interviewers to skip questions in error or to collect inconsistent data. Refer to Census Bureau (2004) for more details.

Processing error is recognized as a form of systematic error that can be introduced when systems or programs designed to capture, edit, and tabulate data induce error. Such errors can be attributed to problems in specifications, in programming, or in implementation. For example, the C2SS data were keyed from mail returns and into computer-assisted instruments and the Census 2000 Sample data were captured and interpreted using an Optical Mark Recognition (OMR) and OCR processes. Processing error can occur if the OCR equipment misreads Census 2000 Sample income entries or if a data entry clerk keyed the wrong information during data capture. Processing errors may be a factor to consider when analyzing income data as will be discussed in the results section. Similarly, since coding was used for the Census 2000 Sample and C2SS industry and occupation items, it is possible that coding errors were made. Errors introduced during the editing and file creation process are another possible source of processing error, which may be the result of errors in specification (e.g., incomplete, unclear, or incorrect specifications) or in programming. We reviewed processing methods and procedures as part of this analysis.

4.2.5 The effect of differing residence rules, reference periods, and data collection time frames were considered

Residence Rules

Differences in residence rules may have contributed to variation in the level of occupancy, household membership, and universes on which the social characteristics depend. The Census 2000 residence rules count the population as of April 1, 2000, while the ACS residence rules collect representative information on a wide range of topics continuously over 12 months, and produce yearly average distributions of these characteristics for all kinds of areas. Census 2000 residence rules reflect the principle of usual residence as of April 1, 2000. These rules are premised on the need to establish one and only one residence for each respondent. Establishing one usual residence is critical to minimizing the chance that a respondent will be counted in more than one location. Additionally, the usual residence concept links to the Constitutional requirement of a census to support apportionment. In contrast, the ACS methods call for some mode of interviewing nearly every day of the year. Thus, the ACS adopted a current residence rule. Using this residence rule approach produced data that ultimately provided an estimate of the average characteristic for every area in the nation each year.

The ACS "current residence" concept is based on a 2-month length of stay that includes the day that the unit is contacted. This rule recognizes that people can have more than one place where they live or stay over the course of a year, and that estimates of the characteristics of the population for some areas are affected by these people. Thus, a different set of residence rules was adopted.

The differences in C2SS and Census 2000 Sample estimates caused by the residence rules were most likely minimal for most of the social data discussed in this report. However, for certain segments of the population the usual and current residence concepts can result in different residence decisions. Appreciable differences may occur in areas where large numbers of people spend several months of the year in what would not be considered their residences under the census usual residence concept. In particular, estimated distributions of certain characteristics for states like Florida and Arizona, and for areas like beach, lake, or mountain vacation spots may differ appreciably between the census and the ACS because of their large seasonal populations. Similarly, areas with large colleges or universities may see differences in household population distributions due to the more de facto nature of the ACS current residence rule.

Reference Dates and Periods

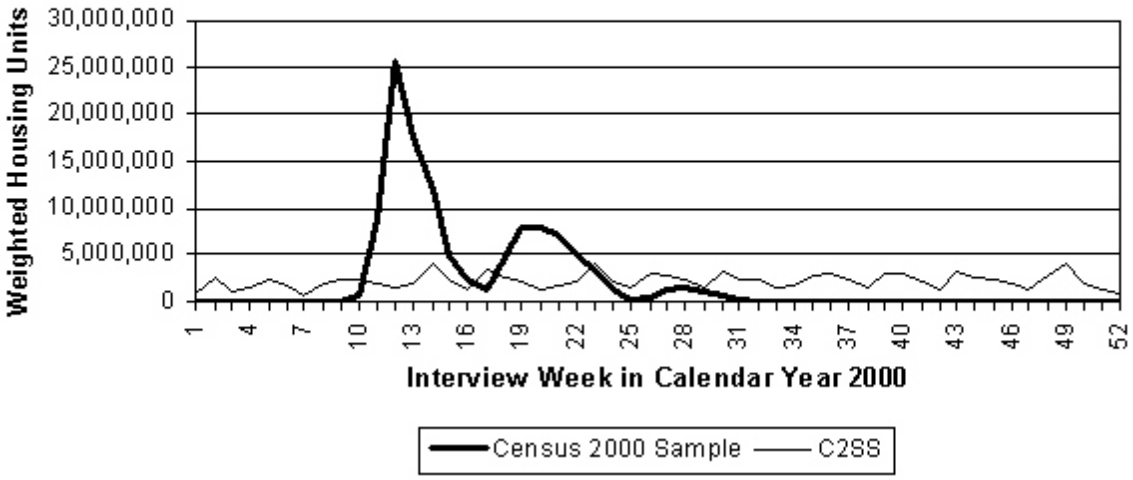
Reference date or period refers to the time frame about which the question asks for information. The decennial census centers its count and its age distribution on a reference date of April 1, the assumption being that the remaining "100 percent" items are also reflecting that date, regardless of whether the enumeration is conducted by mail in March and April or by follow-up operations in July. However, only one sample question on the Census 2000 Sample referenced this

April 1, 2000 date.[2] The remaining sample questions either had no specific reference period or provided a specific reference period such as "last week" (for employment status), "Since February 1" (for school enrollment), "calendar year 1999", (for income questions), or 5 years ago (for person living in this house or apartment).[3] This implies that the decennial census sample estimates, with the exception of these items, primarily reflect status in the months of April, May, and tailing out into August. They could be influenced by delivery dates for the mail questionnaires and the length of time data are collected from follow-up operations.

The ACS estimates of characteristics reflect the conditions as of the day the data are collected, or they reflect a specific time period referenced in individual questions. The ACS data, except for income which is collected for the last 12 months, tend to be equally spread across each month of the year, with peaks of information within each month that reflect the receipt of mail return questionnaires.

The figure below illustrates this diversity at the national level. The weighted estimate of total housing units in the Census 2000 Sample and the C2SS are graphed according to the week in which the data were collected. Census Day – April 1, 2000 – is the last day of week 13. As the figure shows, Census 2000 data collection occurred between weeks 10 and 32 while C2SS data collection occurred throughout the year.

Figure A. Distributions of Total Weighted Census 2000 Sample and C2SS Housing Unit Responses by Week



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2 The question on mobility asked "Did this person live in this house or apartment 5 years ago (on April 1, 1995)?

3 The C2SS used the following specific reference periods: "last 3 months" for school enrollment, "last 12 months" for income, and "1 year ago" for whether the person was living in house or apartment.

Several of the social estimates would obviously be affected by the interview date and the distribution of the amount of data collected over the interview time frame, although this is much less of a factor for the social characteristics than the economic characteristics. For example, the reference period for school enrollment is "in the last three months" for the C2SS and "since February 1, 2000" for the Census 2000 Sample. The educational attainment question asks for the highest degree or level of school completed, but this question asked in March or April for the Census 2000 Sample, just before the end of the school year, would produce different answers than for the C2SS when it was administered, say, in June, after the completion of the school year.

5. RESULTS

This section documents the comparison of C2SS and Census 2000 Sample distributions for the following items that appear in the social profile:

- School enrollment;
- Educational attainment;
- Marital status;
- Grandparents as caregivers;
- Veteran status;
- Disability;
- Place of birth, citizenship status, and region of birth;
- Language spoken at home; and
- Ancestry.

The C2SS and Census 2000 Sample estimates compared in this report reflect the use of final population and housing controls. They are limited to the household population only (that is, they exclude the group quarters population). The Census 2000 Sample estimates are based on data from about 1 in 6 households nationally who completed Census 2000 long forms.

For each of the social items examined, this section provides background on the uses of the data and how the questions were asked to help give meaning to the results. Two sets of data are provided - tables comparing the national-level C2SS and Census 2000 Sample estimates, and graphs showing selected county-level comparisons. This section identifies areas in which additional research are recommended as well as real differences that may exist in ACS estimates relative to those produced from the Census 2000 Sample. Item allocation rates by data collection mode can be found in Appendix A. A complete summary of statistically significant sub-national results for 18 counties can be found in Appendix E.

5.1 School Enrollment

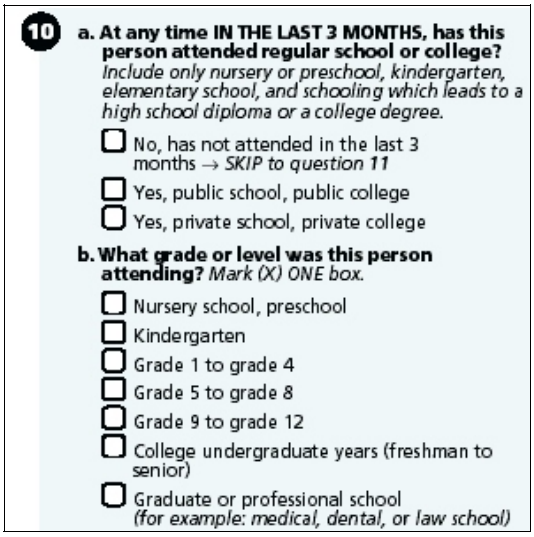
5.1.1 Description of Item

Data on school enrollment are important because several federal programs use the data; for example, to help provide socioeconomic data about schoolchildren and to help determine where federal funding should go. For a more complete list of federal uses, see Appendix C.

School enrollment is asked in a two-part question, first by asking if the person has been enrolled in school over a given time period (and if so, was it a public or private school). If the person was enrolled in school, the second part asks the grade or level the person was attending.

There were two notable differences between the Census 2000 Sample questions and the C2SS questions on school enrollment. First, the questions referenced enrollment over different time periods. Census 2000 asked if the person had "at any time since February 1, 2000" attended a regular school or college. Since Census 2000 data were collected from mid-March 2000 to as late as August 2000, the reference period could have been as short as about a month and a half or as long as almost seven months. The C2SS data, however, were collected during the whole year, so the question asks if the person had "at any time in the last 3 months attended a regular school or college". Second, the C2SS computer-assisted follow-up instruments asked for the specific grade for grades 1-12, while the paper questionnaires used for the C2SS mail form and the Census 2000 Sample forms asked for three ranges of grades, grades 1 to 4, grades 5 to 8, and grades 9 to 12. The Census 2000 sample and C2SS follow-up questions also asked whether the person attended school and if so, was it public or private, while the mail questionnaires for both C2SS and the Census 2000 Sample asked both of those items in one question.

The specific wording used on the C2SS mailout form is shown below. All versions of the school enrollment questions are shown in Appendix B.



10 **a. At any time IN THE LAST 3 MONTHS, has this person attended regular school or college?** *Include only nursery or preschool, kindergarten, elementary school, and schooling which leads to a high school diploma or a college degree.*

- ☐ No, has not attended in the last 3 months → *SKIP to question 11*
- ☐ Yes, public school, public college
- ☐ Yes, private school, private college

b. What grade or level was this person attending? *Mark (X) ONE box.*

- ☐ Nursery school, preschool
- ☐ Kindergarten
- ☐ Grade 1 to grade 4
- ☐ Grade 5 to grade 8
- ☐ Grade 9 to grade 12
- ☐ College undergraduate years (freshman to senior)
- ☐ Graduate or professional school *(for example: medical, dental, or law school)*

5.1.2 National-Level Comparisons

Table 1 compares the national-level school enrollment distribution from the C2SS with the Census 2000 Sample for people three years of age or older in households who were enrolled in school. All estimates are in percentages. The national results shown in Table 1 indicate C2SS and Census 2000 Sample distributions that are fairly similar. There are three statistically significant differences, but each differ by less than one percentage point. The difference in the percentage of students who are enrolled in nursery school or preschool was 0.7 percentage points lower in the C2SS, and for college or graduate school, it was 0.9 percentage points larger in the C2SS.

Table 1. School Enrollment, National-Level Distributions (C2SS compared with the Census 2000 Sample)

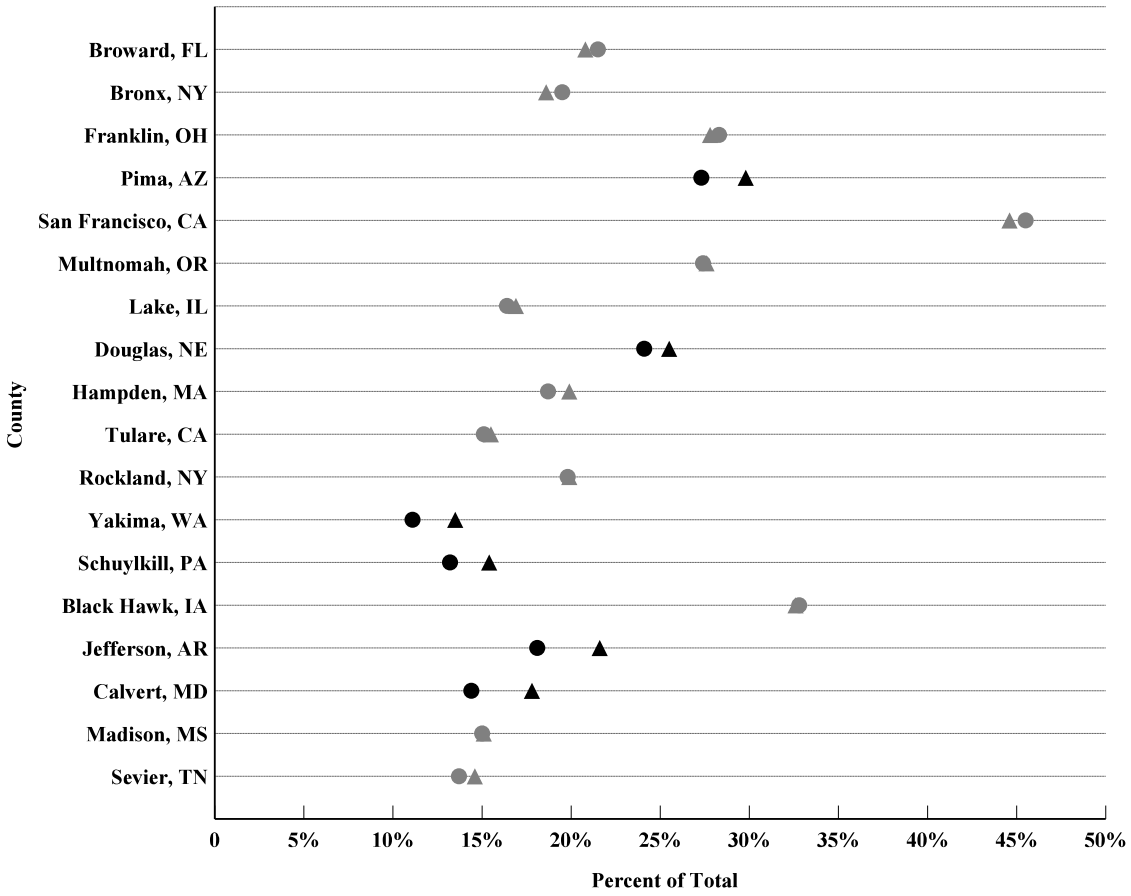
School Enrollment	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 3 years and over enrolled in school	73,900,000	72,600,000			
Nursery school, preschool	6.7	6.0	-0.7	± 0.1	Yes
Kindergarten	5.6	5.4	-0.2	± 0.1	Yes
Elementary school (grades 1-8)	45.4	45.4	-0.0	± 0.2	No
High school (grades 9-12)	21.7	21.7	0.0	± 0.1	No
College or graduate school	20.6	21.5	0.9	± 0.3	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.1.3 County-Level Comparisons

Figure 1, which looks at the percentage of students that were enrolled in college or graduate school for 18 counties, shows that the pattern in the county-level data was generally similar to the national-level data pattern. The counties that had the highest estimates in the Census 2000 Sample had the highest estimates in C2SS as well. There were six significant differences among the 18 counties, and the C2SS estimate (shown as a triangle) was two percentage points or more larger than the Census 2000 Sample estimate (shown as a circle) for five of them. There were two differences larger than three percentage points, in Jefferson, AR, and Calvert, MD, while the differences for Pima, AZ, Yakima, WA, and Schuylkill, PA, were between two and three percentage points. To contrast, the C2SS estimate was not significantly lower than the Census 2000 Sample estimate in any of the counties.

Figure 1. Percent Enrolled in College or Graduate School
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 1, presents the statistically significant differences for all of the school enrollment items for the 18 counties. The table shows that in general, the national results hold at the county level for the 18 counties. Calvert, MD, did have results that were different from those at the national level. For example, at the national level, the percentages of students enrolled in elementary school were not different, but in Calvert, MD, the C2SS percentage was 3.6 percentage points lower than the Census 2000 Sample estimate, and while the percentage of students in nursery school or preschool was lower nationally in the C2SS, it was 1.9 percentage points higher in the C2SS in Calvert County. There is no methodological explanation for why the results for Calvert, MD, differ from the national level results. Otherwise, the county-level results are similar to the national-level ones. The estimates for the percentage of students in high school was not different at the national level, and only one of the 18 counties showed a significant result (Tulare, CA, 2.6 percentage points higher in the C2SS). Five of the six statistically significant results for the percentage of students in nursery school or preschool indicated a lower percentage in the C2SS, which mimicked the national-level results.

5.1.4 Analysis

The Census 2000 Sample distributions and the C2SS distributions for school enrollment are very consistent, with no large substantive differences. That suggests that distributions from the ACS data will not be different than distributions from the decennial census long form.

The C2SS estimated a slightly lower percentage of students enrolled in nursery school or preschool than the Census 2000 Sample and a slightly higher percentage enrolled in college or graduate school. The different reference period, both the time of year and the length of the period, could be one reason for the difference, as well as the differences in the universe totals (72.6 million for the C2SS and 73.9 million for the Census 2000 Sample) (see Boggess, 2003). The item allocation rate for the Census 2000 Sample of 6.2 percent, shown in Appendix A, Table 1, indicates that allocation possibly influenced the estimates, but it is only 2.2 percentage points larger than the rate for the C2SS of 4.0 percent, suggesting there is no reason to believe that nonresponse error is the reason for the small differences seen in the estimates. The difference in allocation rates for interviewer-collected data was larger: for the Census 2000 Sample, 9.2 percent versus 2.3 percent for the C2SS.

However, it is important to remember the differences measured here are very small with no substantive differences, and therefore data users should be able to compare census long form and ACS school enrollment data.

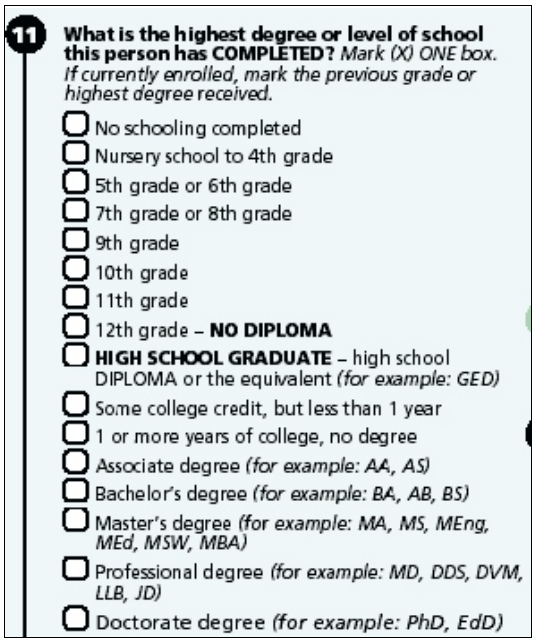
5.2 Educational Attainment

5.2.1 Description of Item

The educational attainment question is needed to determine the educational level of Americans. Several federal programs use these data to determine areas with low levels of education and to fulfill requirements of the Voting Rights Act. For a more complete list of federal uses, see Appendix C.

Educational attainment was collected using one question that asked for the person's highest level of education. The wording of the educational attainment question was essentially the same on the Census 2000 and C2SS mail forms, the Census 2000 Sample enumerator form, and the C2SS CATI/CAPI instrument. For in-person follow-up interviews, the respondent was shown a flashcard with the response categories listed. For the Census 2000 Sample forms and the C2SS mail forms, the response categories were the same, with grouped categories for nursery school to fourth grade, fifth grade or sixth grade, and seventh grade or eighth grade. The answer categories differed for the C2SS CATI and CAPI instruments–there, each grade from 1 to 11 was an individual response category. For CATI, since the interviewer could not show a flashcard, the interviewer read the categories to the respondent.

The specific wording used on the C2SS mailout form is shown at the top of the next page. All versions of the educational attainment question are shown in Appendix B.



11 **What is the highest degree or level of school this person has COMPLETED?** *Mark (X) ONE box. If currently enrolled, mark the previous grade or highest degree received.*

- ☐ No schooling completed
- ☐ Nursery school to 4th grade
- ☐ 5th grade or 6th grade
- ☐ 7th grade or 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade – **NO DIPLOMA**
- ☐ **HIGH SCHOOL GRADUATE** – high school DIPLOMA or the equivalent *(for example: GED)*
- ☐ Some college credit, but less than 1 year
- ☐ 1 or more years of college, no degree
- ☐ Associate degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, AB, BS)*
- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

5.2.2 National-Level Comparisons

Table 2 compares the national-level distributions for educational attainment from the C2SS and the Census 2000 Sample, and shows that the distributions are very similar. The population of interest is people 25 years and older in households. While five of the seven differences are statistically significant, only two of those differences are greater than plus or minus 0.5 percentage points. The percentage that are high school graduates with no college is greater in the C2SS than the Census 2000 sample (1.0 percentage point difference), and the percentage of people with some college but no degree is lower in the C2SS (-0.7 percentage points).

Table 2. Educational Attainment, National-Level Distributions (C2SS compared with the Census 2000 Sample)

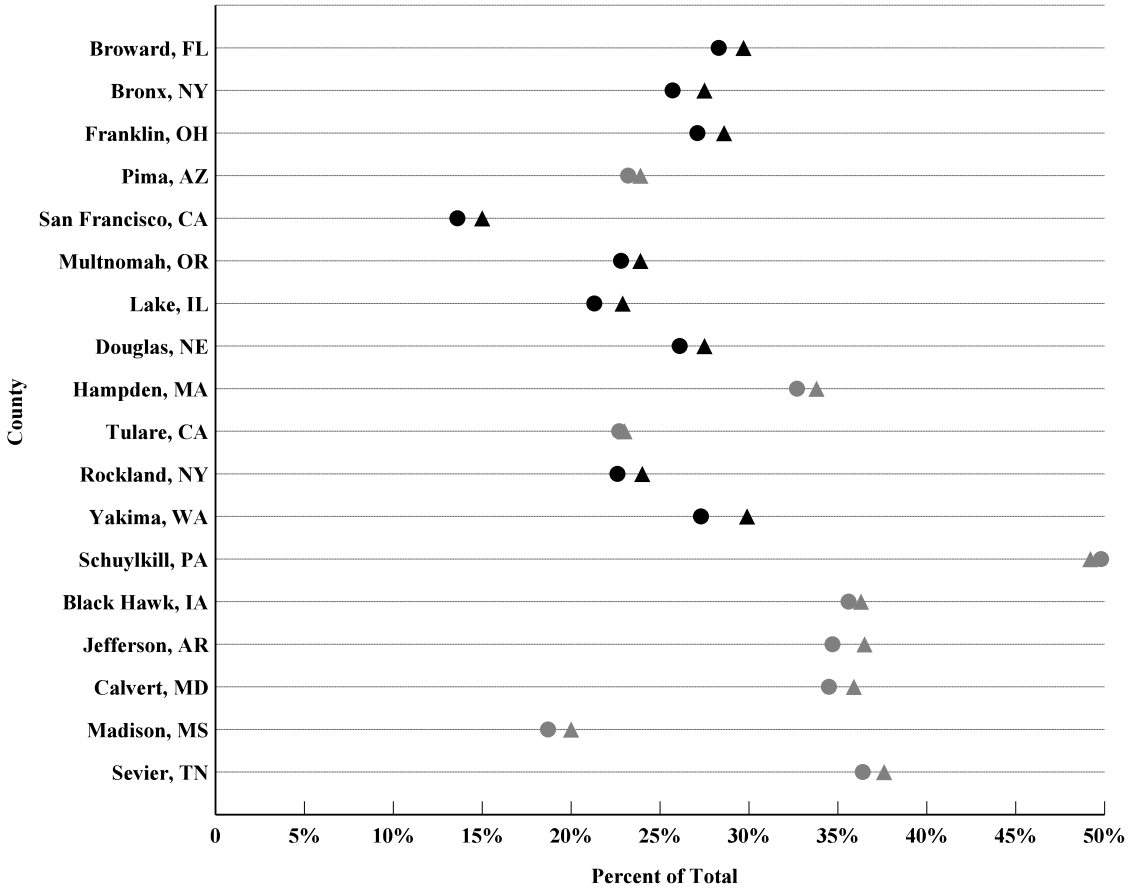
Educational Attainment	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 25 years and over	177,600,000	177,500,000			
Less than 9th grade	7.2	7.0	-0.3	± 0.1	Yes
9th to 12th grade, no diploma	11.7	11.5	-0.3	± 0.1	Yes
High school graduate (includes equivalency)	28.6	29.6	1.0	± 0.1	Yes
Some college, no degree	21.2	20.5	-0.7	± 0.1	Yes
Associate degree	6.4	6.5	0.1	± 0.1	No
Bachelor's degree	15.8	16.0	0.2	± 0.1	Yes
Graduate or professional degree	9.0	9.0	-0.0	± 0.1	No
High school graduate or higher	81.0	81.6	0.5	± 0.2	Yes
Bachelor's degree or higher	24.8	25.0	0.2	± 0.2	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

5.2.3 County-Level Comparisons

Figure 2 shows sub-national results for the percentage of household residents 25 years of age or older who are high school graduates but have not gone to college, the largest difference in Table 2. The graph shows that there were statistically significant differences for nine of the 18 counties, with the C2SS estimate (shown as a triangle) larger than the Census 2000 Sample estimate (shown as a circle) in every case. However, only for Yakima, WA, was that difference larger than two percentage points. This indicates that the national-level difference was seen in the test counties for that data item.

Figure 2. Percent With a High School Degree and No College
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 2, shows the statistically significant differences for each of the educational attainment items for the 18 counties. The results at the county level are similar to the national-level results. Nationally, the percentage of people with some college but no degree was smaller in the C2SS than the Census 2000 Sample. At the county level, the C2SS estimate was smaller than the Census 2000 Sample estimate four times while the C2SS estimate was never larger than the Census 2000 Sample estimate. However, none of the differences were two percentages points or larger. The C2SS estimate of the percentage of people who were high school graduates or higher was larger in 10 of the 18 counties, with two of the differences greater than two percentage points (2.3 percentage points in both Jefferson, AR, and Yakima, WA). This mirrors what we saw at the national level, where the C2SS estimate was higher than the Census 2000 Sample estimate.

5.2.4 Analysis

The most important finding is that the analysis of the educational attainment data show the C2SS distributions are very similar to the Census 2000 distributions. The most notable difference is that the C2SS estimated a higher percentage of high school graduates with no college and a lower percentage of people with some college but no degree. There is some evidence that people answering the self-enumeration form provided multiple entries for this question, marking "high school graduate" and a higher-level attainment item. In those cases, for both the C2SS and the Census 2000 Sample, the highest level checked was used. That could explain in part why the percentage of people whose highest level of education was a high school degree was smaller in the Census 2000 Sample, which relied on a higher percentage of self-enumerated forms. The differences in the timing of the data collections for C2SS and the Census 2000 Sample may also play a part. Allocation rates are shown in Appendix A, Table 2. The item allocation rate for educational attainment in the Census 2000 Sample was 7.2 percent, which indicates a possible influence on the final estimates. The rate for the C2SS, though, was 4.8 percent, only 2.4 percentage points lower. Since the allocation methods were the same, any differences in the data are probably not due to nonresponse error. The difference in the allocation rates was larger for cases collected by an interviewer–12.0 percent in the Census 2000 Sample and 4.7 percent in the C2SS. However, there is no reason to believe that educational attainment data users should notice substantive differences in census long form and ACS data.

5.3 Marital Status

5.3.1 Description of Item

Several federal programs use the data from the marital status question; for example, to provide estimates of married women in the labor force, elderly widowed individuals, or young single people who soon may establish homes of their own. For a more complete list of federal uses, see Appendix C.

Marital status data were collected using a single question. There was one difference between C2SS and the Census 2000 sample in how marital status was asked. In the C2SS, it was asked after relationship. On the Census 2000 Sample mail forms, it was asked in the section with the other sample detailed population questions, well after relationship.

The specific wording used on the C2SS mailout form is shown below. All versions of the marital status question are shown in Appendix B.

5.3.2 National-Level Comparisons

Table 3 shows the national-level distributions for marital status for the C2SS and the Census 2000 Sample; the distributions are very similar. The population of interest is people 15 years and older in households. Five of the seven differences were statistically significant, but only two of the differences were greater than plus or minus 0.5 percentage points, and none were greater than plus or minus one percentage point. The C2SS estimated a higher percentage of people who had never been married (-0.5 percentage points) and a lower percentage of people who were currently married and not separated (0.8 percentage points). All of the other differences were less than or equal to plus or minus 0.1 percentage points.

Table 3. Marital Status, National-Level Distributions (C2SS compared with the Census 2000 Sample)

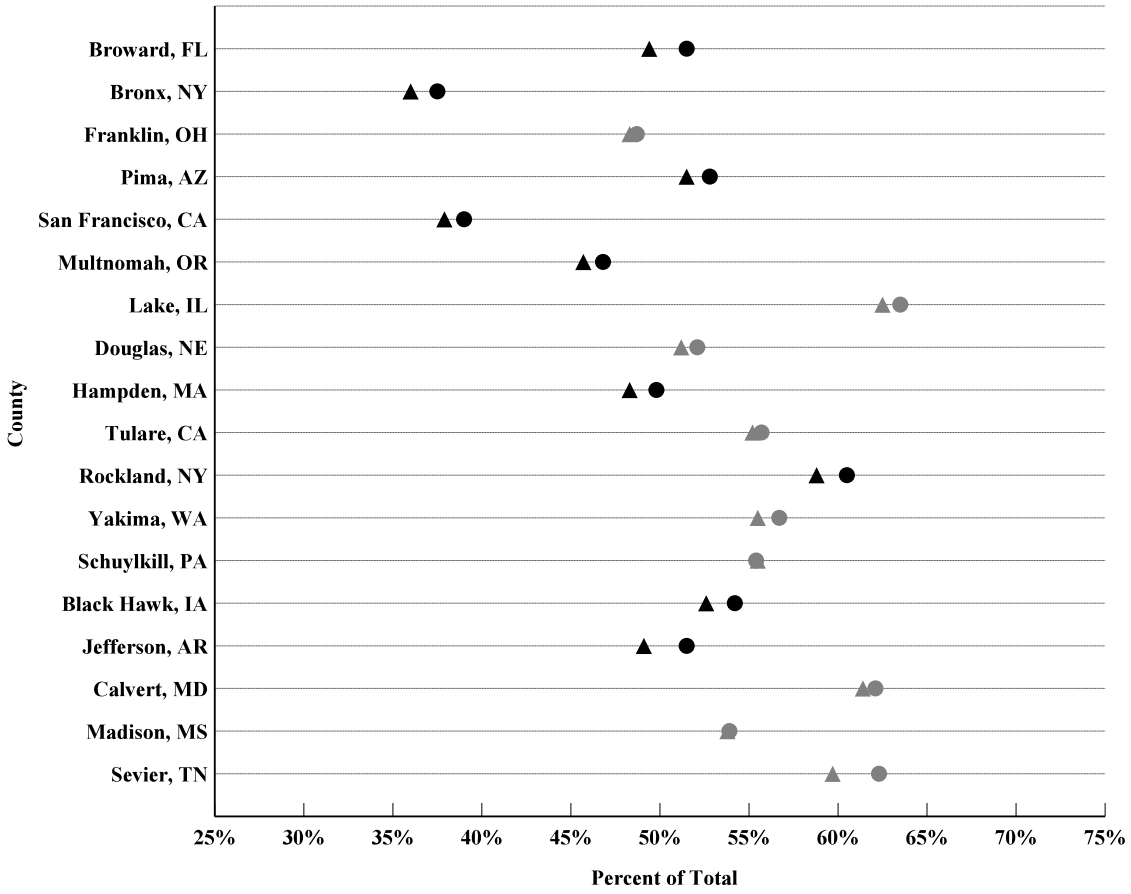
Marital Status	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 15 years and over	213,500,000	213,600,000			
Never married	26.6	27.1	0.5	± 0.1	Yes
Now married, except separated	54.9	54.1	-0.8	± 0.2	Yes
Separated	2.1	2.2	0.1	± 0.0	Yes
Widowed	6.5	6.5	0.0	± 0.0	No
Female	5.3	5.3	-0.0	± 0.0	No
Divorced	9.9	10.0	0.1	± 0.1	Yes
Female	5.7	5.8	0.1	± 0.0	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

5.3.3 County-Level Comparisons

Figure 3 shows the percentage of people 15 years of age or older who were married and not separated for the 18 counties, and the pattern for these counties is similar to the national pattern. Nine of the 18 counties had significant differences, and in all cases, the C2SS estimate (shown as a triangle) was less than the Census 2000 Sample estimate (shown as a circle). However, only two of those differences were larger than two percentage points: Jefferson, AR (-2.4 percentage points) and Broward, FL (-2.1 percentage points). While there are differences, the C2SS results generally parallel the Census 2000 Sample results. Note that the scale in Figure 3 goes from 25 to 75 percent instead of 0 to 50 percent.

Figure 3. Percent Married and Not Separated
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 3, shows the differences (C2SS minus Census 2000 Sample) for each of the marital status items. Only the statistically significant differences are shown. The national-level results seem to be reflected at the county level for the counties that were examined. For 10 of the 18 counties, the C2SS had a higher percentage of people who had never been married, which was the national-level result, too. However, only two of those differences were two percentage points or higher (2.0 for both Calvert, MD, and Bronx, NY). To contrast, nine times the percentage of people married and not separated was lower in the C2SS, which was also the national level result. The national-level results are similar to the county level results for people who have been widowed, too. The differences for widows, and specifically female widows, was not statistically significant at the national level. Only twice (for widows) and once (for female widows) was the difference significant at the county level, with none of the differences being two percentage points or higher.

5.3.4 Analysis

The data at the national and sub-national levels suggest that the C2SS distribution is very similar to the Census 2000 Sample distribution for marital status. There are a few differences–C2SS estimating a slightly higher percentage of people who had never been married and a slightly lower percentage of people who were married and not separated. However, those are not substantive differences.

There is no reason to believe that the differences are due to nonresposne since the rates for marital status, shown in Appendix A, Table 3, are small for both the C2SS (1.8 percent) and the Census 2000 Sample (2.2 percent). Overall, the differences in the estimates are not substantive and raise no concerns. Users of the marital status data should not see major differences between the Census 2000 Sample data and data from the ACS.

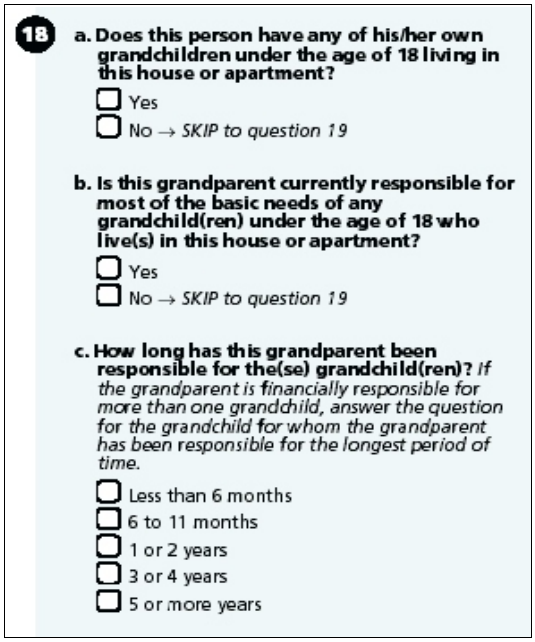
5.4 Grandparents as Caregivers

5.4.1 Description of Item

The Census Bureau included a series of questions about grandparents as caregivers for the first time in Census 2000. These questions provided data to comply with legislation (13 U.S.C., Chapter 5, Section 141), passed in the 104th Congress, that stated the decennial census must obtain information about grandparents who have primary responsibility for the care of their minor grandchildren. The aim of these questions is to distinguish between households where a grandparent temporarily provides a home for a grandchild for a few weeks or months and households in which a grandparent provides a home for a grandchild on a more permanent basis and serves as the primary caregiver for the grandchild. For a more complete list of federal uses, see Appendix C.

The grandparents as caregivers section was a series of three questions–the first to identify people with grandchildren in the house, the second to identify primary caregivers, and the third to find out how long the grandparent has been a primary caregiver. The questions used to collect these data were the same for the C2SS and the Census 2000 Sample.

The specific wording used on the C2SS mailout form is shown at the top of the next page. All versions of the grandparents as caregivers questions are shown in Appendix B.



5.4.2 National-Level Comparisons

The national-level estimate of the grandparents who are caregivers for the C2SS is compared to the estimate for the Census 2000 Sample households in Table 4. The population of interest is grandparents with grandchildren in the house. The table shows that the difference of 0.1 percentage point is not statistically significant.

Table 4. Grandparents as Caregivers, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Grandparents as Caregivers	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Grandparent living in household with one or more own grandchildren under 18 years	5,800,000	5,600,000			
Grandparent responsible for grandchildren	42.0	42.2	0.1	± 1.3	No

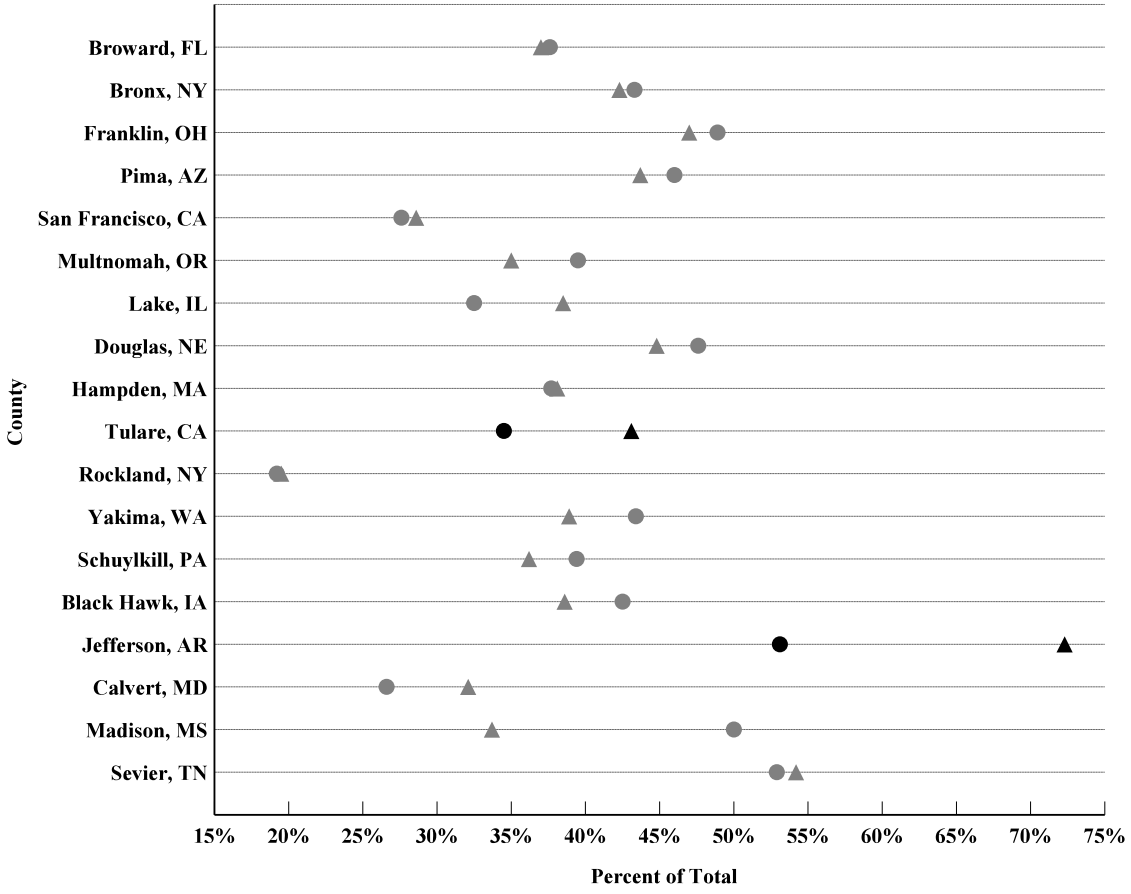
KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.4.3 County-Level Comparisons

Figure 4 graphs the percentage of grandparents with grandchildren in the house who are primary caregivers for those grandchildren for the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle). Appendix E, Table 4, presents the differences for the statistically

significant counties. The figure shows that the differences are statistically significant for only two of the 18 counties, Jefferson, AR (19.2 percentage points), and Tulare, CA (6.2 percentage points). Another county, Madison, MS, has a difference of -16.2 percentage points, but that difference is not statistically significant. Note that of the two largest differences, in one case, the C2SS estimate is larger than the Census 2000 Sample difference (by 19.2 percentage points) and in one case, the C2SS estimate is smaller (by 16.2 percentage points). The large differences for these counties, one with C2SS larger and one with the Census 2000 Sample larger, is due to the fact that the denominator, or base, of these percentages is very small – grandparents who have grandchildren living in their home. In general, a relatively small base may introduce some noise into the estimates. Estimates using three- and five-year averages will produce more stable percentages. Note that the range of percentages in Figure 4 is from 15 percent to 75 percent, a range of 60 percentage points, as opposed to the usual scale from 0 to 50 percent, a 50 percentage point range.

Figure 4. Percent of Grandparents Who Are Caregivers of Grandchildren Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

5.4.4 Analysis

This analysis showed there was not a statistically significant difference at the national level between the C2SS and Census 2000 Sample in the percentage of grandparents with minor grandchildren in the household that were the primary caregivers of those grandchildren. There were two notable differences at the county level, which largely result from the small numbers of people in the population of interest. The questions and edits for this question were the same in the C2SS and the Census 2000 Sample. There are no reasons to believe that the ACS data will be different from the Census 2000 Sample data.

However, the allocation rates, detailed in Appendix A, Table 4, were very high for both the C2SS and the Census 2000 Sample and for all modes: 19.8 percent for C2SS mail cases, 15.4 percent for C2SS interviewer cases, 13.8 for Census 2000 Sample mail cases, and 18.2 percent for Census 2000 Sample enumerator cases. The allocation rates for the 2001 Supplemental Survey and the 2002 ACS (the 2001 and 2002 versions of C2SS) were also high–for mail, 15.4 percent in 2001 and 15.9 percent in 2002, and for interviewer data, 14.7 percent in 2001 and 15.4 percent in 2002. Given that the data collected using ACS methods has had high allocation rates and that it was a new question in Census 2000, research is needed to ensure that it is measuring what it intends to measure.

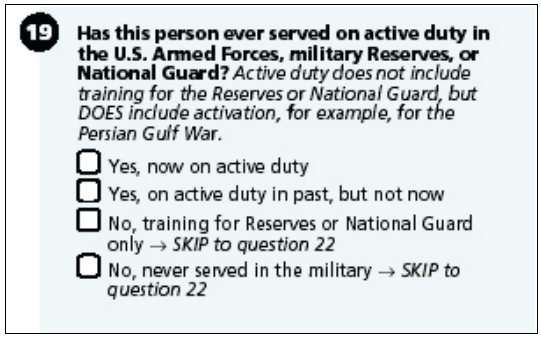
5.5 Veteran Status

5.5.1 Description of Item

This item is primarily used by the Department of Veterans Affairs to measure the needs of veterans. It is also used to evaluate veterans' programs dealing with education, employment, and health care. For a more complete list of federal uses, see Appendix C.

The veteran status data were collected using a single question on the Census 2000 Sample mail and enumerator forms and on the C2SS mail form. The C2SS CATI/CAPI instrument collected the same information in three questions. The first question asked if the person ever served on active duty, noting that training for the Reserves or National Guard does not count. If the person had served on active duty the respondent was asked if the person was currently on active duty. If the person had not been on active duty, the respondent was asked if the person has ever been in the Reserves or National Guard.

The specific wording used on the C2SS mailout form is shown at the top of the next page. All versions of the veteran status question are shown in Appendix B.



5.5.2 National-Level Comparisons

The C2SS national-level estimate of the percentage of veterans is compared to the C2SS Sample estimate in Table 5, and shows the C2SS had a slightly lower percentage of veterans in the adult civilian population than the Census 2000 Sample. The population of interest is civilians in households who are 18 years of age or older. The difference is statistically significant, but is less than 0.5 percentage points.

Table 5. Veteran Status, National-Level Distributions (C2SS compared with the Census 2000 Sample)

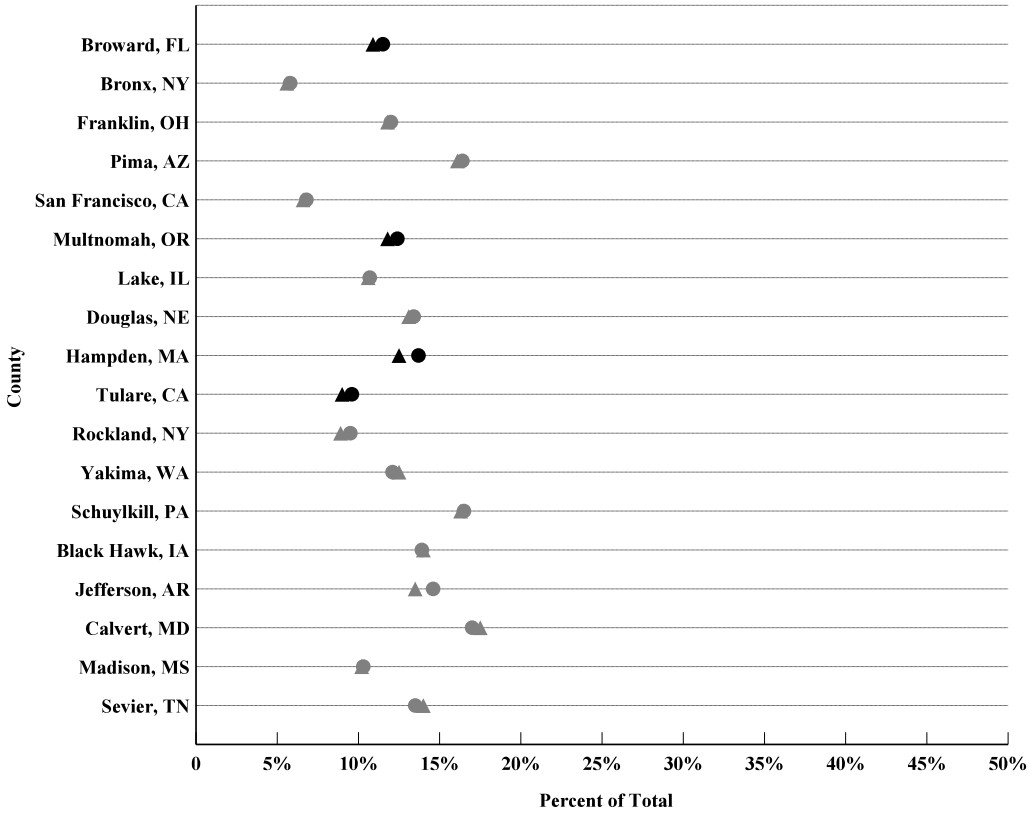
Veteran Status	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household civilian population 18 years and over	201,000,000	201,000,000			
Civilian veterans	12.8	12.5	-0.4	± 0.1	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.5.3 County-Level Comparisons

Figure 5 presents the percentages of adult civilians who were veterans according to the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle). The pattern at the national level was seen in the 18 counties. While there were four significant differences, all of them smaller in the C2SS than the Census 2000 Sample, none of the differences were larger than plus or minus two percentage points. Appendix E, Table 5, shows those statistically significant differences.

Figure 5. Percent of Civilians Who Are Veterans
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

5.5.4 Analysis

This research suggests there is no substantive difference between the C2SS and the Census 2000 Sample in measuring the percentage of adult civilians who are veterans. The difference at the national level is statistically significant but very small in magnitude. As shown in Appendix A, Table 5, the allocation rate for the Census 2000 Sample of 7.5 percent was high enough to indicate a possible influence on the data due to nonresponse, but the C2SS rate was not much lower at 4.7 percent, just below the five percent mark suggesting a possible influence on the estimates. The difference of 2.8 percentage points suggests that there was not a differential influence of nonresponse between the C2SS and the Census 2000 Sample. It is worth noting the large difference in the allocation rates for enumerator-collected data (2.5 percent in the C2SS and 11.0 percent in the Census 2000 Sample). Given all of this information, there is no reason to believe the change from the census long form to the ACS will cause any substantive change in the veteran status data.

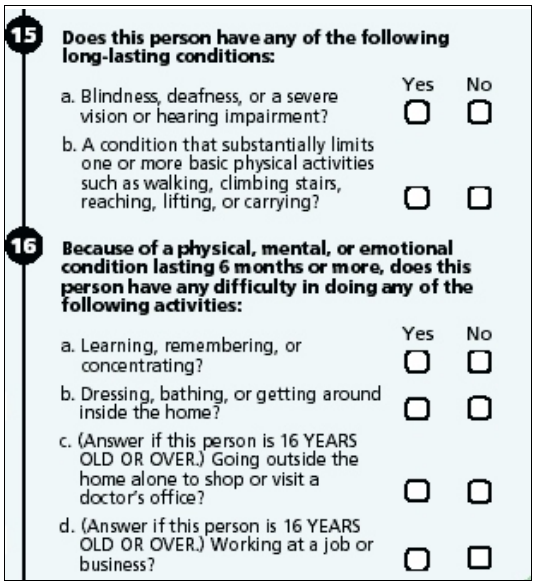
5.6 Disability

5.6.1 Description of Item

Data from this item are used to distribute funds and develop programs for people with disabilities and the elderly under the Rehabilitation Act. Data also may be used to monitor the equalization of opportunity for people with disabilities as required under the Americans for Disability Act. For a more complete list of federal uses, see Appendix C.

The disability questions asked about six types of disability: sensory (visual and auditory), physical (walking, climbing stairs, reaching, lifting, or carrying), mental (learning, remembering, or concentrating), self-care, going outside alone to shop or visit a doctor's office, and employment. The first four were asked of everyone who was five or older; the last two were asked only if the person was 16 years of age or older. If a person responds that they had at least one of the disabilities[4], the person was considered to have a disability for the purposes of Table 6.

There were slight wording differences between the C2SS CATI/CAPI instrument and the paper instruments used in the C2SS and Census 2000 which made the question flow better in an interviewer setting, but nothing that would suggest any reasons for differences in response. The specific wording used on the C2SS mailout form is shown below. All versions of the disability questions are shown in Appendix B.



15 **Does this person have any of the following long-lasting conditions:**

	Yes	No
a. Blindness, deafness, or a severe vision or hearing impairment?	☐	☐
b. A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?	☐	☐

16 **Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in doing any of the following activities:**

	Yes	No
a. Learning, remembering, or concentrating?	☐	☐
b. Dressing, bathing, or getting around inside the home?	☐	☐
c. (Answer if this person is 16 YEARS OLD OR OVER.) Going outside the home alone to shop or visit a doctor's office?	☐	☐
d. (Answer if this person is 16 YEARS OLD OR OVER.) Working at a job or business?	☐	☐

[4] When determining if a person had a disability, the response to the employment disability question was considered only for people 16-64.

5.6.2 National-Level Comparisons

Table 6 compares the percentages of people who are disabled, by age, between the C2SS and the Census 2000 Sample. The table shows there are very large differences. The definition of what constitutes a person having a disability is explained in Section 5.6.1. The population of interest for this table is the civilian population of people aged five and up, broken into three groups (5-20, 21-64, and 65 years old and over). The percentage of people with a disability was much lower in the C2SS for the 21-64 year old population than in the Census 2000 Sample, a difference of 5.3 percentage points. The difference for the 5-20 year old range was statistically significant but not as large, 1.3 percentage points.

Table 6. Disability, National-Level Distributions (C2SS compared with the Census 2000 Sample)

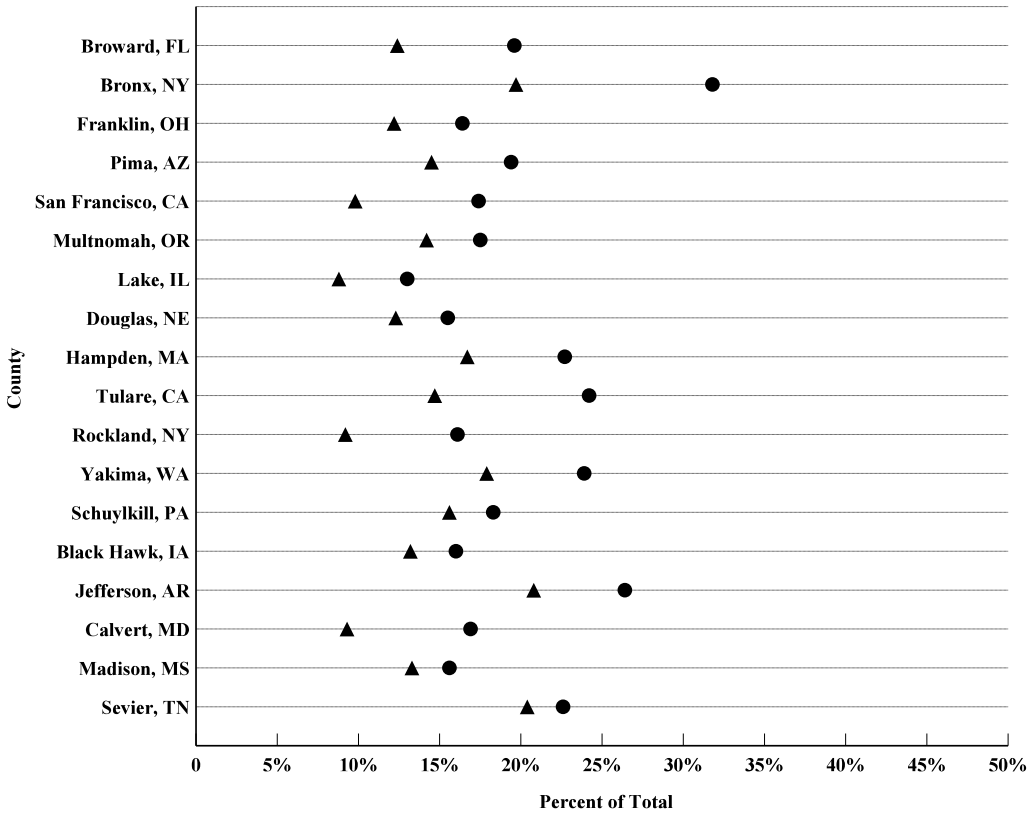
Disability Status	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 5 to 20 years old	63,000,000	63,000,000			
With a disability	8.0	6.8	-1.3	± 0.1	Yes
Universe: Household population 21 to 64 years old	157,800,000	157,800,000			
With a disability	19.1	13.8	-5.3	± 0.1	Yes
Universe: Household population 65 years and over	33,000,000	33,000,000			
With a disability	41.5	41.3	-0.2	± 0.3	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.6.3 County-Level Comparisons

Figure 6 shows the percentage of people 21-64 with a disability for the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle) for the 18 counties. The results were similar to those at the national level. The differences were statistically significant for every county, and all of the differences were greater than two percentage points with the C2SS estimate always lower than the Census 2000 Sample estimate. Nine of the differences were greater than five percentage points: Bronx, NY (12.0 percentage points); Tulare, CA (9.5); San Francisco, CA (7.6); Calvert, MD (7.5); Broward, FL (7.2); Rockland, NY (6.9); Hampden, MA (6.0); Rockland, NY (6.0); and Jefferson, AR (5.6).

Figure 6. Percent of People 21-64 Years Old Who Have a Disability
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 6 shows the statistically significant differences in the 18 counties for the percentage of people disabled, by age. In eight of the 18 counties, the percentage of people 5-20 years old who were disabled was at least two percentage points lower in the C2SS than in the Census 2000 Sample, which is consistent with the difference of 1.3 percentage points found at the national level. Likewise, for the percentage of people 65 or older, only one statistically significant difference was found, consistent with the finding at the national level of no statistically significant difference.

5.6.4 Analysis

There is a larger difference between the C2SS and Census 2000 Sample estimates for disability than for any other social profile item. Evidence suggests that the differences are largely due to higher reports of two kinds of disability among adults whose data were collected by an enumerator in Census 2000.

Stern (2003) found that the rates for the different types of disability for mail respondents to be relatively similar between the C2SS and Census 2000 Sample. Specifically, respondents in that environment were more likely than any other to report difficulty going outside the home alone to shop or visit a doctor's office and difficulty working at a job or business. In the Census 2000 Sample, 7.6 percent of the interviewer-collected people reported they had difficulty going outside the home alone compared to 4.1 percent in the C2SS. For employment disability, the difference was even more striking, 17.7 percent in Census 2000 versus 7.2 percent in the C2SS.

Further evidence indicated that the problem was with the Census 2000 interviewer-collected data: 47.5 percent of the people in Census 2000 whose data were collected by an interviewer reported that, despite a disability involving a limitation in going outside the home to shop or visit a doctor's office, they were employed, compared to 18.8 percent in the C2SS. For people reporting an employment disability to an interviewer, 75.0 percent in Census 2000 were actually employed, compared to 20.5 percent in C2SS. Therefore, the conclusion is that the Census 2000 figures are more likely to be high rather than the C2SS figures being too low.

A small part of the problem could be the moderately high allocation rates for interviewer-collected data in the Census 2000 Sample–8.5 percent for the average of the six disability items (shown in Appendix A, Tables 6a to 6f). This is in contrast to the low allocation rates for C2SS interviewer data–2.1 percent for the average of the six items.

It is clear that further work needs to be done to determine the best way to measure disability. Stern (2003) has already noted the problems in the Census 2000 interviewer-collected data for certain disability items, which is where the problem seems to be concentrated. This item demonstrates some advantages of the ACS methodology. Particularly beneficial to this item was the use of well-trained interviewers and computer-assisted interviewing.

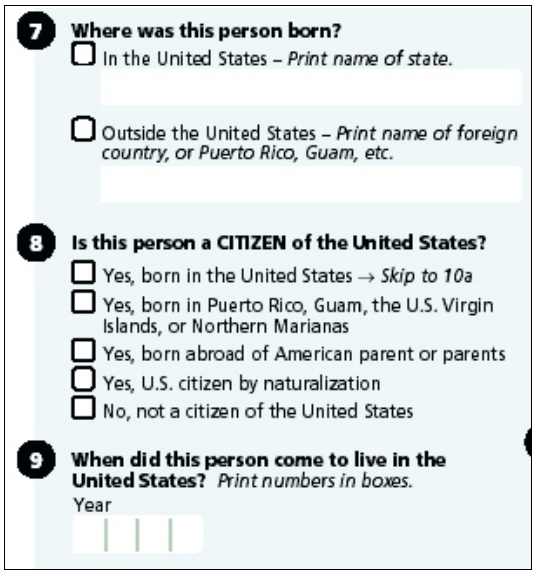
5.7 Place of Birth, Citizenship Status, and Region of Birth

5.7.1 Description of Item

These items provide essential data to set and evaluate immigration policy and laws. The U.S. Citizen and Immigration Services agency, part of the Department of Homeland Security, uses this information to assist non-citizens in completing the naturalization process. Data from these items is required under the Voting Rights Act. For a more complete list of federal uses, refer to Appendix C.

Two questions were used to collect this information. The questions on the paper instruments–the C2SS mail form and both the Census 2000 Sample mail and interviewer forms–were the same. The only difference in the paper instruments was that the C2SS provided a blank space to write in where the person was born, while the Census 2000 Sample form was limited to 15 characters because of data capture constraints. For the C2SS CATI/CAPI instrument, the question was adapted to fit an electronic environment. First, the respondent was asked where the person was born, with the interviewer choosing from lists of states and countries. If the person was born outside of the United States, the question asked if the person was born abroad of American

parent(s), a U.S. citizen by naturalization, or not a citizen. The specific wording used on the C2SS mailout form is shown below. All versions of the place of birth, citizenship status, and region of birth questions are shown in Appendix B.



5.7.2 National-Level Comparisons

Table 7a compares the distributions for place of birth and citizenship status between the C2SS and the Census 2000 Sample. The population of interest is all people in households. This table shows that, even though there are several statistically significant differences, the largest difference (people born in a different state than the one they currently live in) was only 0.4 percentage points, suggesting no substantive differences.

Table 7b compares the C2SS and the Census 2000 Sample distributions for the region of birth for all people born outside of the United States, except for people born at sea. There were two differences in this table that are roughly opposite. The C2SS had a higher percentage of the foreign born population born in Asia than did the Census 2000 Sample (0.9 percentage points) and a smaller percentage in Latin America (-1.0 percentage points).

Table 7a. Citizenship Status and Place of Birth, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Citizenship Status and Place of Birth	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population	273,600,000	273,600,000			
Native	88.8	88.9	0.2	± 0.1	Yes
Born in United States	87.5	87.7	0.2	± 0.1	Yes
State of residence	60.1	59.8	-0.3	± 0.2	Yes
Different state	27.5	27.9	0.4	± 0.2	Yes
Born outside the United States	1.2	1.2	-0.0	± 0.0	No
Foreign Born	11.2	11.1	-0.2	± 0.1	Yes
Naturalized citizen	4.5	4.5	-0.1	± 0.0	No
Not a citizen	6.7	6.6	-0.1	± 0.1	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

Table 7b. Region of Birth of the Foreign-Born, National-Level Distributions (C2SS compared with Census 2000 Sample)

Region of Birth	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household foreign-born population (excluding born at sea)	30,700,000	30,300,000			
Europe	15.7	15.7	-0.0	± 0.3	No
Asia	26.4	27.3	0.9	± 0.3	Yes
Africa	2.8	2.8	0.0	± 0.2	No
Oceania	0.5	0.6	0.0	± 0.1	No
Latin America	51.8	50.8	-1.0	± 0.7	Yes
Northern America	2.6	2.8	0.1	± 0.1	No

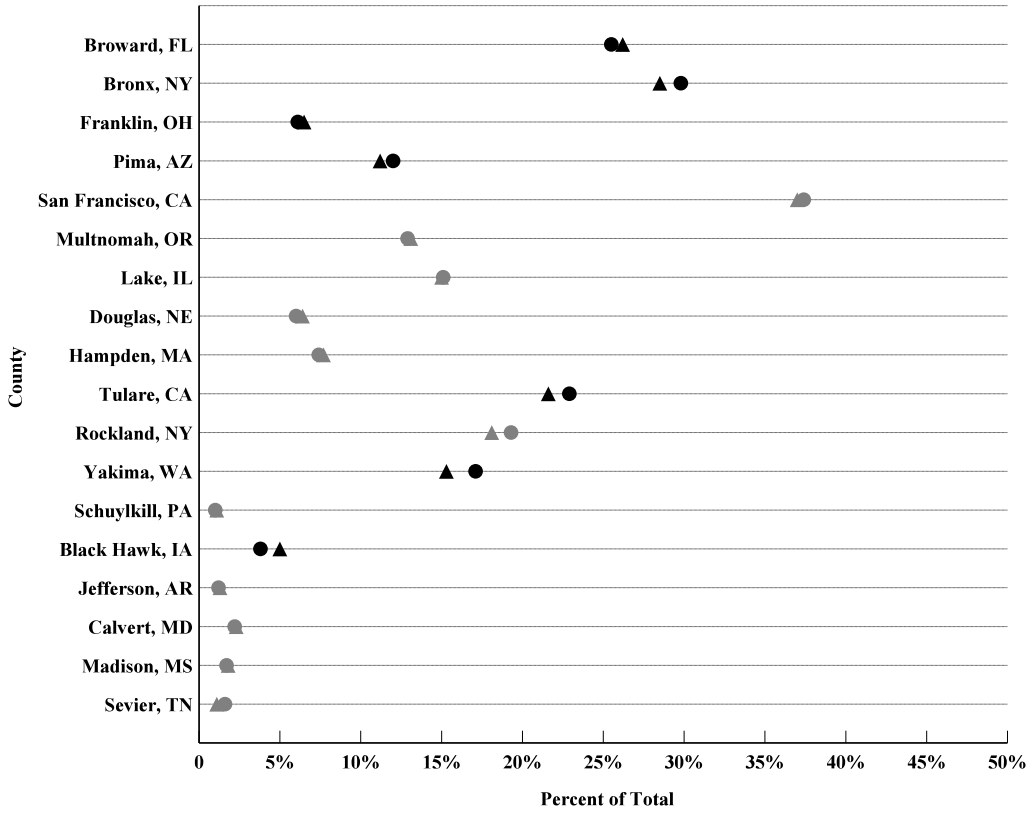
KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.7.3 County-Level Comparisons

Figure 7a shows the percentage of people who are foreign born in the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle) for the 18 county-level sites. There were no statistically significant differences greater than two percentage points. Seven of the differences were statistically significant–in four cases, the C2SS estimate was lower than the Census 2000

Sample estimate and in three cases, the C2SS percentage was higher. This is not surprising given that the national-level difference was only -0.2 percentage points.

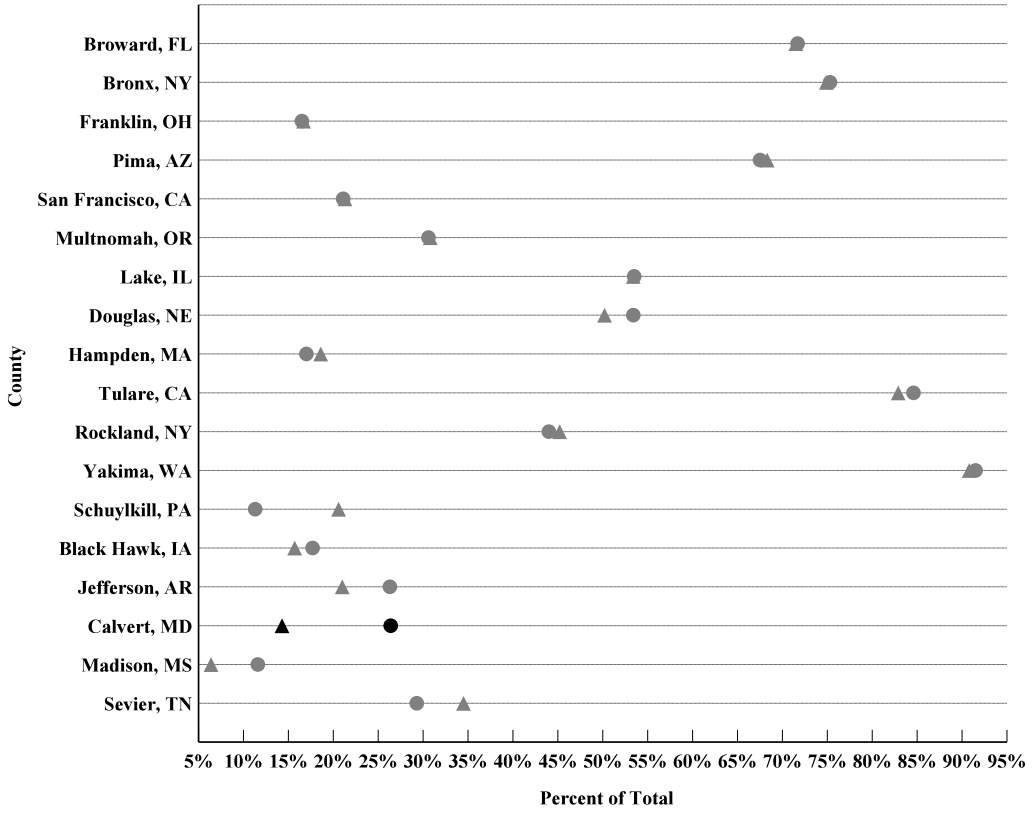
Figure 7a. Percent of People Who Are Foreign-Born
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Figure 7b shows the percentage of foreign-born people that were born in Latin America for each of the 18 county-level sites. Only one of the differences was statistically significant– 12.1 percentage points for Calvert, MD. One reason the difference is so large is the small denominator, or base–foreign-born people, of which there were very few in Calvert, MD. Despite that one large difference, in the counties where the Census 2000 Sample estimate was large, the C2SS estimate was also, and when the Census 2000 Sample estimate was low, so was the C2SS estimate. Note the scale for Figure 7b ranges from 5 to 95 percent (90 percentage points) instead of 0 to 50 percent (50 percentage points).

Figure 7b. Percent of Foreign-Born People Who Were Born in Latin America Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Tables 7a and 7b, show the statistically significant differences for all 18 county-level sites. There were an average of about four statistically significant differences in the eight unique items (native-born and foreign-born are counted only once since their differences are the complement of each other) in Table 7a, but none of the differences were greater then two percentage points. In fact, the item with the largest difference at the national level, percentage of people born in another state, had no statistically significant differences for the 18 counties. For Figure 7b, there are only seven statistically significant differences out of a possible 90. Five of the differences are greater than two percentage points. The two largest differences are for the percentage of people born in Europe. The C2SS percentage for Schuylkill, PA was 15.1 percentage points lower than the percentage from the Census 2000 Sample, which was offset by Madison, MS, where the C2SS percentage was 14.9 percentage points greater than the Census 2000 Sample percentage.

5.7.4 Analysis

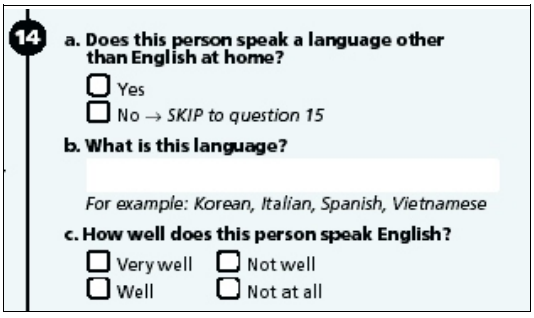
The data indicate that the distributions for Census 2000 and the C2SS were very similar for these items. While at the national level there were several statistically significant differences, they do not seem to be substantive. The county-level analysis did not find differences that fit a pattern. Appendix A, Tables 7a and 7b show the item allocation rates. The allocation rates for place of birth were moderately high for the Census 2000 Sample, 9.2 percent, but not much larger than the rates for the C2SS, 6.4 percent. The conclusion is that nonresposne is probably not the reason for the differences seen. For interviewer-collected data, though, the difference in allocation rates was larger: 12.5 percent for the Census 2000 Sample versus 4.1 percent for the C2SS. The allocation rates for citizenship were very low, 0.8 percent for the Census 2000 Sample and 0.5 percent for the C2SS. There is no reason to believe that the distributions of these items will be substantively affected by the change from the long form to the ACS, based on the national-level data and the results from the 18 counties, but further research on a wider range of geographic areas would be useful.

5.8 Language Spoken at Home

5.8.1 Description of Item

This item provides government agencies with information for their programs that serve the needs of the foreign born and specifically those who have difficulty speaking English. The data are used under the Voting Rights Act to meet statutory requirements for making voting materials available in minority languages. For a more complete list of federal uses, refer to Appendix C.

The questions in the language series were the same for the C2SS and the Census 2000 Sample, even using the same four languages as examples for the language spoken write-in: Korean, Italian, Spanish, and Vietnamese. These questions collected data on the language spoken at home as well as finding out how well the person speaks English. The questions referred only to the spoken language, not the ability to read or write in another language. The specific wording used on the C2SS mailout form is shown below. All versions of the language questions are shown in Appendix B.



5.8.2 National-Level Comparisons

Table 8 compares the percentages of people who speak English only and other languages at home between the C2SS and the Census 2000 Sample, and it shows that the distributions are very similar. Other languages were grouped into four categories: Spanish, Other Indo-European languages, Asian and Pacific Islander languages, and other languages (which are not in the table below).[5] Percentages are also given for people who do not speak English very well.

Table 8 shows that all of the differences save one were statistically significant, but none of the individual differences were greater than one percentage point. The universe of interest was people in households aged five years and older. The largest difference, -0.7 percentage points, was for the percentage of people who speak English less than "very well". However, all of the differences regarding languages other than English were in the same direction–the C2SS estimate was less than the Census 2000 Sample one. Although the differences were not large, as a percentage of the Census 2000 Sample estimate, many of them were relatively large.

Table 8. Language Spoken at Home, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Language Spoken at Home	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household population 5 years and over	254,600,000	254,600,000			
English only	82.0	82.5	0.5	± 0.1	Yes
Language other than English	18.0	17.5	-0.5	± 0.1	Yes
Speak English less than "very well"	8.2	7.6	-0.7	± 0.1	Yes
Spanish	10.8	10.5	-0.3	± 0.1	Yes
Speak English less than "very well"	5.3	4.9	-0.5	± 0.1	Yes
Other Indo-European languages	3.8	3.7	-0.1	± 0.1	Yes
Speak English less than "very well"	1.3	1.2	-0.1	± 0.0	Yes
Asian and Pacific Islander languages	2.7	2.7	-0.0	± 0.0	No
Speak English less than "very well"	1.4	1.3	-0.1	± 0.0	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

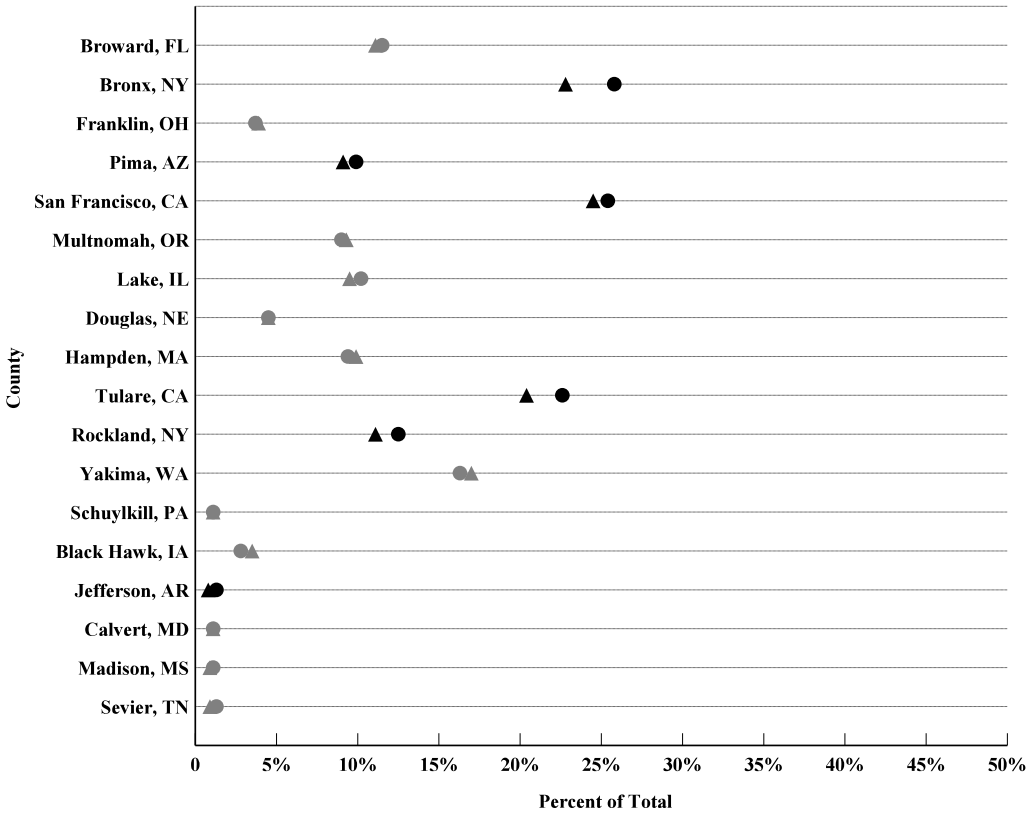
5.8.3 County-Level Comparisons

Figure 8 shows the percentage of people in the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle) for the 18 counties who spoke a language other than English at home and speak English less than very well. The C2SS and the Census 2000 Sample estimates were

[5] For a list of languages that are in each group, see U.S. Bureau of the Census, 2004b.

very similar. There were six counties where the C2SS estimated a smaller percentage than the Census 2000 Sample, but in only two cases was the difference greater than -2.0 percentage points–Bronx, NY (-3.0 percentage points) and Tulare, CA (-2.2 percentage points).

Figure 8. Percent Who Speak a Language Other Than English at Home and Speak English Less Than Very Well Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 8, provides the statistically significant differences between the C2SS and the Census 2000 Sample for the 18 counties for each of the language items. In general, the statistically significant differences indicate that the C2SS estimate was lower than the Census 2000 Sample estimate. However, only five of the differences are greater then two percentage points (only counting the English only and language other than English lines once, since the differences are the complement of each other). This indicates that the differences at the national level are generally reflected at the county level for these counties and are not concentrated in just a few counties.

5.8.4 Analysis

The data indicate that the distributions for Census 2000 and the C2SS were very similar for the language items. There were several significant differences at the national level, but none of the differences are particularly large. The allocation rates for speaking another language at home (shown in Appendix A, Table 8) were fairly similar for the C2SS (5.2 percentage points) and the Census 2000 Sample (4.3 percentage points). There is no reason to believe that there are serious differences between the C2SS and the Census 2000 Sample, but the pattern of less reporting of speaking languages other than English at home in the C2SS does bear monitoring.

5.9 Ancestry

5.9.1 Description of Item

This item is required to enforce provisions under the Civil Rights Act which prohibit discrimination based upon race, sex, religion, and national origin. The data are used to measure the social and economic characteristics of ethnic groups and to tailor services to accommodate cultural differences. For a more complete list of federal uses, refer to Appendix C.

The ancestry question is the same for the C2SS and the Census 2000 Sample, even using the same ancestry examples in the same order. The question simply asks for a person's ancestry or ethnic origin. There was one small difference–the Census 2000 forms allowed only 30 characters in the fill-in box while C2SS did not designate a specific number of characters. The specific wording used on the C2SS mailout form is shown below. All versions of the ancestry question are shown in Appendix B.

5.9.2 National-Level Comparisons

Table 9 compares the percentage of people reporting each of the listed ancestries in the C2SS and the Census 2000 Sample. The population of interest is the household population. The table shows that the percentage of people reporting an ancestry for most ancestries was higher in the C2SS than it was in the Census 2000 Sample. While only three of the differences were greater than one percentage point, in almost every case there were more people reporting the given ancestry in the C2SS than in the Census 2000 Sample. Some of the differences, even though small, are a large percentage of the people reporting the ancestry, since the estimate for many of the ancestry groups are small themselves.

Table 9. Ancestry, National-Level Distributions (C2SS compared with the Census 2000 Sample)

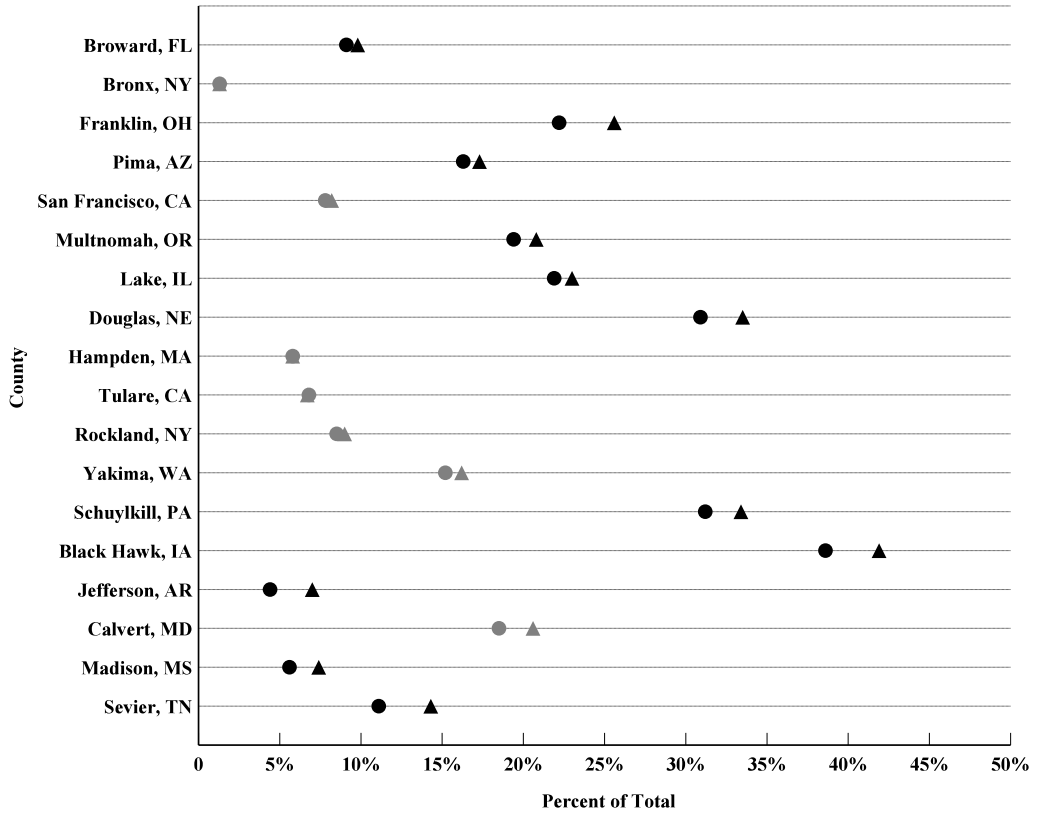
Ancestry	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household Population	273,600,000	273,600,000			
Arab	0.4	0.5	0.0	± 0.0	No
Czech	0.6	0.5	-0.1	± 0.0	Yes
Danish	0.5	0.6	0.0	± 0.0	Yes
Dutch	1.6	1.9	0.3	± 0.1	Yes
English	8.8	10.3	1.5	± 0.1	Yes
French (except Basque)	3.0	3.6	0.6	± 0.1	Yes
French Canadian	0.9	0.8	-0.1	± 0.0	Yes
German	15.4	17.0	1.6	± 0.2	Yes
Greek	0.4	0.4	0.0	± 0.0	No
Hungarian	0.5	0.6	0.0	± 0.0	Yes
Irish	11.0	12.1	1.1	± 0.1	Yes
Italian	5.6	5.8	0.2	± 0.1	Yes
Lithuanian	0.2	0.3	0.0	± 0.0	Yes
Norwegian	1.6	1.7	0.0	± 0.1	No
Polish	3.2	3.3	0.1	± 0.1	Yes
Portuguese	0.4	0.5	0.1	± 0.0	Yes
Russian	1.0	1.1	0.1	± 0.0	Yes
Scotch-Irish	1.6	1.9	0.3	± 0.0	Yes
Scottish	1.8	2.0	0.2	± 0.0	Yes
Slovak	0.3	0.3	0.0	± 0.0	No
Subsaharan African	0.6	0.6	-0.1	± 0.0	Yes
Swedish	1.4	1.6	0.1	± 0.1	Yes
Swiss	0.3	0.4	0.0	± 0.0	Yes
Ukranian	0.3	0.3	-0.0	± 0.0	No
United States or American	7.5	7.3	-0.1	± 0.2	No
Welsh	0.6	0.7	0.1	± 0.0	Yes
West Indian (excluding Hispanic origin groups)	0.7	0.7	0.0	± 0.0	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.9.3 County-Level Comparisons

Figure 9 shows the percentage of people who were reported to have German ancestry in the C2SS (shown as a triangle) and the Census 2000 Sample (shown as a circle) for the 18 county-level sites. In 11 of the 18 counties, the C2SS percentage is greater than the Census 2000 Sample percentage, and in six of those cases, the difference is greater than two percentage points. The three differences larger than three percentage points were Franklin, OH (3.4 percentage points); Black Hawk, IA (3.3), and Sevier, TN (3.1). The national pattern of more reporting of German ancestry in the C2SS is clearly seen at sub-national levels.

Figure 9. Percent Who Reported German Ancestry
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 sample and the C2SS estimates are bolded.

Appendix E, Table 9, which shows the significant differences for all of the ancestry groups for the 18 counties, shows that the pattern is true for many other groups. There were 16 differences greater than two percentage points; 13 times, the C2SS estimate was greater than the Census 2000 Sample estimate, and the other three times, the group in question was "United States or American".

5.9.4 Analysis

The data clearly show that there are higher percentages of people in most ancestry groups in the C2SS than in the Census 2000 Sample. That is because ancestry is not imputed–if the respondent does not provide an ancestry, no ancestry is tabulated. If ancestry is reported, up to two ancestries are tabulated per person. In the C2SS, 88.3 percent of the people reported at least one ancestry, while 81.0 percent of the people reported at least one ancestry in the Census 2000 Sample. That difference was fairly consistent by data collection mode. In the C2SS, 87.3 percent of the mail forms included an ancestry: 87.4 percent for CATI and 90.4 percent for CAPI. In the Census 2000 Sample, 81.0 percent of the mail forms included an ancestry as well as 81.0 percent of the enumerator forms.[6] Raglin (2003) showed that if the percentage is based on the total people reporting ancestry instead of the total population, that in some cases the C2SS percentage was larger but just about as often, the Census 2000 Sample percentage was larger.

Higher levels of reporting ancestry in the C2SS lead to higher percentages of most ancestries in the C2SS compared to the Census 2000 Sample. Data users need to recognize that there may be increases in the numbers and proportion reporting each ancestry in the ACS than in the Census, given these results.

6. CONCLUSIONS

The major conclusion from this examination of social characteristics data from the C2SS and the Census 2000 Sample is that the results from the two surveys are generally very consistent. This means that data users should not find large differences between census long form data and ACS data. While 72 percent (55 of 72) of the C2SS social profile percentages examined in this report were statistically different than the corresponding Census 2000 Sample estimates, the vast majority were not substantive differences. Forty of those differences were less than half of a percentage point, and only seven of them were one percentage point or more. Five of those seven differences greater than one percentage point were associated with the disability and ancestry tables–the other eight tables combined for only two differences of one percentage point or more.

However, data users should be aware of significant differences between the C2SS and Census 2000 Sample estimates found for two data items: Disability and Ancestry. For disability, we found that the estimate of the percentage of people 21-64 years old with a disability was much lower in the C2SS than in the Census 2000 Sample (13.8 percent versus 19.1 percent), and was notably lower for people 5-20 years old (6.8 percent versus 8.0 percent). Research by Stern (2003) found evidence to suggest that the differences were largely due to higher reports of two kinds of disability among adults whose data were collected by an enumerator in Census 2000. Specifically, respondents in that environment were more likely than any other to

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[6] However, there were noticeable differences by mode in the number of ancestries per questionnaire that reported ancestry. Mail forms with at least one ancestry had an average of 1.35 (C2SS) and 1.32 (Census 2000 Sample) ancestries, while enumerator forms with ancestries had an average of 1.21 (C2SS–1.29 CATI and 1.19 CAPI) and 1.18 Census 2000 Sample ancestries.

report difficulty going outside home alone to shop or visit a doctor's office and difficulty working at a job or business. Further research into the disability question is advised.

For ancestry, we found a significantly higher percentage of reporting of almost every ancestry group in the C2SS compared to the Census 2000 Sample. The Census Bureau does not impute an ancestry if an ancestry response is not provided by the respondent, and the C2SS had more reporting of ancestry than did the Census 2000 Sample (88.3 percent of people in the C2SS had at least one ancestry reported compared with 81.0 percent in the Census 2000 Sample).

There were several additional items for which more research could provide important information. The grandparents as caregivers question, although showing no statistically significant differences between the C2SS and the Census 2000 Sample, had very high allocation rates. This was true for both the C2SS and the Census 2000 Sample, and for data collected by self-enumeration and by interviewers. Research could indicate why allocation was needed so frequently for this question, a new question in Census 2000. We also noted there could be a pattern of lower percentage of people speaking other languages at home in the C2SS than in the Census 2000 Sample that should be monitored.

We found that the C2SS social characteristics data were generally more complete than the Census 2000 Sample data, largely due to more complete data collected during the follow-up stage. Most of the C2SS item allocation rates for the social data items were under five percent, with the vast majority of item allocation rates under three percent for C2SS interviewer-collected data. This is in contrast to the Census 2000 Sample, which had item allocation rates over five percent for the large majority of items and rates over eight percent for interviewer-collected data for the vast majority of the social characteristic items examined in this report.

We suggest that more research be done with the ACS data to better understand ACS operations and methods in addition to the research on the disability, grandparents as caregivers, language spoken at home, and educational attainment items mentioned previously. This report only analyzes national-level data and data for 18 counties throughout the country. It would be useful to analyze data by other geographic subgroups such as states to identify methodological differences that may affect only some areas of the country. Data could be examined by sex, age, race, Hispanic origin, and other key items as another way to identify ACS methodological problems that may affect only some subgroups.

However, it is important to remember that the key finding is that the social characteristics profile distributions are very consistent between the C2SS and the Census 2000 Sample for most items. This research suggests that the ACS will produce data that appear to be very similar to the data that would be produced form the decennial census.

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Appendix A. Item Allocation Rates by Data Collection Mode

Table 1. School Enrollment, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	6.2	4.0
Mail*	4.9	5.2
Interviewer	9.2	2.3
CATI	NA	2.4
CAPI	NA	2.2

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 2. Educational Attainment, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.2	4.8
Mail*	5.2	4.9
Interviewer	12.0	4.7
CATI	NA	4.2
CAPI	NA	4.9

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 3. Marital Status, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	2.2	1.8
Mail*	1.4	2.4
Interviewer	4.3	1.0
CATI	NA	0.5
CAPI	NA	1.1

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 4. Grandparents Responsible for Grandchildren, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	15.3	17.6
Mail*	13.8	19.8
Interviewer	18.2	15.4
CATI	NA	12.4
CAPI	NA	16.5

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 5. Veteran Status, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.5	4.7
Mail*	6.1	6.1
Interviewer	11.0	2.5
CATI	NA	2.2
CAPI	NA	2.6

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 6a. Vision or Hearing Difficulty, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	6.9	5.0
Mail*	6.0	7.0
Interviewer	9.0	2.1
CATI	NA	2.4
CAPI	NA	2.0

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 6b. Physical Difficulty, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.6	5.2
Mail*	7.1	7.4
Interviewer	8.9	2.1
CATI	NA	2.4
CAPI	NA	2.0

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 6c. Difficulty Remembering, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.5	4.7
Mail*	6.8	6.4
Interviewer	9.1	2.2
CATI	NA	2.6
CAPI	NA	2.1

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 6d. Difficulty Dressing, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.9	4.8
Mail*	7.4	6.7
Interviewer	9.1	2.1
CATI	NA	2.4
CAPI	NA	2.0

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 6e. Difficulty Going Out, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	9.9	5.6
Mail*	10.5	7.8
Interviewer	8.5	2.1
CATI	NA	2.3
CAPI	NA	2.1

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 6f. Difficulty Working at a Job, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	11.4	5.9
Mail*	12.2	8.3
Interviewer	9.3	2.2
CATI	NA	2.5
CAPI	NA	2.1

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 7a. Place of Birth, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	9.2	6.4
Mail*	7.8	8.1
Interviewer	12.5	4.1
CATI	NA	3.4
CAPI	NA	4.3

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 7b. Citizenship, Comparison of Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	0.8	0.5
Mail*	0.6	0.6
Interviewer	1.4	0.4
CATI	NA	0.4
CAPI	NA	0.4

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Table 8. Speaks Another Language, Comparison of Allocation Rates by Data Collection Mode

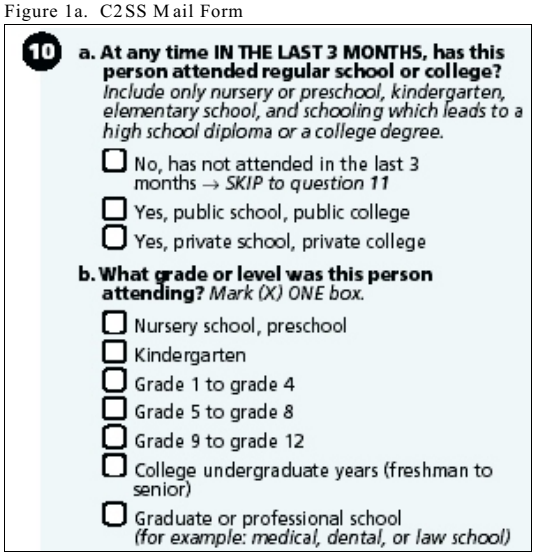
Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	5.2	4.3
Mail*	3.9	6.0
Interviewer	8.3	1.9
CATI	NA	2.2
CAPI	NA	1.8

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 are shown as 0.0.

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

School Enrollment Questions

Figure 1a. C2SS Mail Form



10 **a. At any time IN THE LAST 3 MONTHS, has this person attended regular school or college?**
Include only nursery or preschool, kindergarten, elementary school, and schooling which leads to a high school diploma or a college degree.

- ☐ No, has not attended in the last 3 months → *SKIP to question 11*
- ☐ Yes, public school, public college
- ☐ Yes, private school, private college

b. What grade or level was this person attending? *Mark (X) ONE box.*

- ☐ Nursery school, preschool
- ☐ Kindergarten
- ☐ Grade 1 to grade 4
- ☐ Grade 5 to grade 8
- ☐ Grade 9 to grade 12
- ☐ College undergraduate years (freshman to senior)
- ☐ Graduate or professional school *(for example: medical, dental, or law school)*

Figure 1b. C2SS CATI/CAPI Instrument

The next questions are about schooling and education....
At any time IN THE PAST 3 MONTHS, {Fill 1: has <Name>/have you} attended regular school or college?
INCLUDE ONLY NURSERY OR PRESCHOOL, KINDERGARTEN, ELEMENTARY SCHOOL, AND SCHOOLING THAT LEADS TO A HIGH SCHOOL DIPLOMA OR A COLLEGE DEGREE.

<1> Yes
<2> No
P10a/ S_P10a

What type of school is this? Is it a public school or college or a private school or college?

<1> Public school or college
<2> Private school or college
P10b/ S_P10b

Figure 1b. C2SS CATI/CAPI Instrument

What grade or level {was <Name>/ were you} attending?

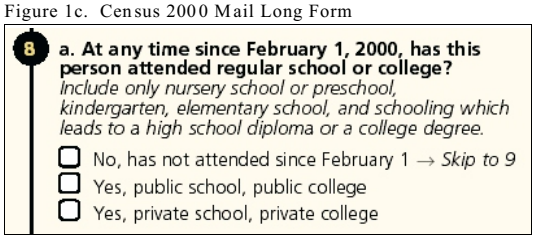
<N> Nursery or preschool
<K> Kindergarten
<1-12> Grade 1-12: **ENTER GRADE**
<20> College Undergraduate (freshman to senior)
<21> Graduate or professional school (for example: medical, dental or law school)

P10c / S_P10c

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

School Enrollment Questions

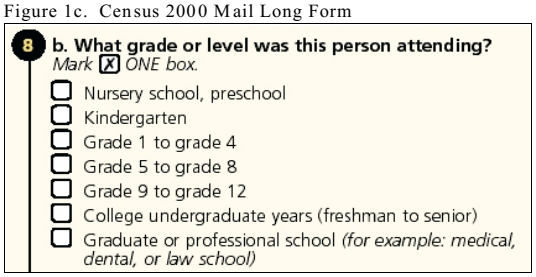
Figure 1c. Census 2000 Mail Long Form



8 **a. At any time since February 1, 2000, has this person attended regular school or college?**
Include only nursery school or preschool, kindergarten, elementary school, and schooling which leads to a high school diploma or a college degree.

- ☐ No, has not attended since February 1 → *Skip to 9*
- ☐ Yes, public school, public college
- ☐ Yes, private school, private college

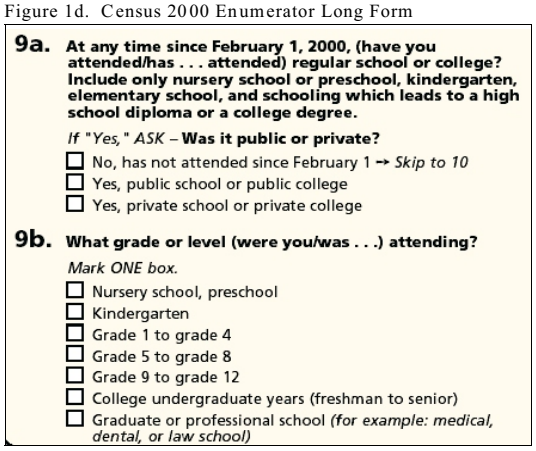
Figure 1c. Census 2000 Mail Long Form



8 **b. What grade or level was this person attending?**
Mark [X] ONE box.

- ☐ Nursery school, preschool
- ☐ Kindergarten
- ☐ Grade 1 to grade 4
- ☐ Grade 5 to grade 8
- ☐ Grade 9 to grade 12
- ☐ College undergraduate years (freshman to senior)
- ☐ Graduate or professional school *(for example: medical, dental, or law school)*

Figure 1d. Census 2000 Enumerator Long Form



9a. **At any time since February 1, 2000, (have you attended/has . . . attended) regular school or college? Include only nursery school or preschool, kindergarten, elementary school, and schooling which leads to a high school diploma or a college degree.**

If "Yes," ASK – **Was it public or private?**

- ☐ No, has not attended since February 1 → *Skip to 10*
- ☐ Yes, public school or public college
- ☐ Yes, private school or private college

9b. **What grade or level (were you/was . . .) attending?**

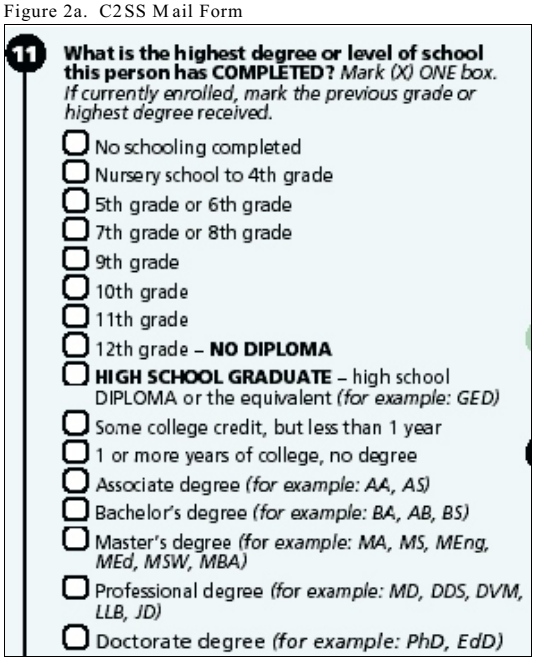
Mark ONE box.

- ☐ Nursery school, preschool
- ☐ Kindergarten
- ☐ Grade 1 to grade 4
- ☐ Grade 5 to grade 8
- ☐ Grade 9 to grade 12
- ☐ College undergraduate years (freshman to senior)
- ☐ Graduate or professional school *(for example: medical, dental, or law school)*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Educational Attainment Questions

Figure 2a. C2SS Mail Form



11 **What is the highest degree or level of school this person has COMPLETED?** *Mark (X) ONE box. If currently enrolled, mark the previous grade or highest degree received.*

- ☐ No schooling completed
- ☐ Nursery school to 4th grade
- ☐ 5th grade or 6th grade
- ☐ 7th grade or 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade – **NO DIPLOMA**
- ☐ **HIGH SCHOOL GRADUATE** – high school DIPLOMA or the equivalent *(for example: GED)*
- ☐ Some college credit, but less than 1 year
- ☐ 1 or more years of college, no degree
- ☐ Associate degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, AB, BS)*
- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

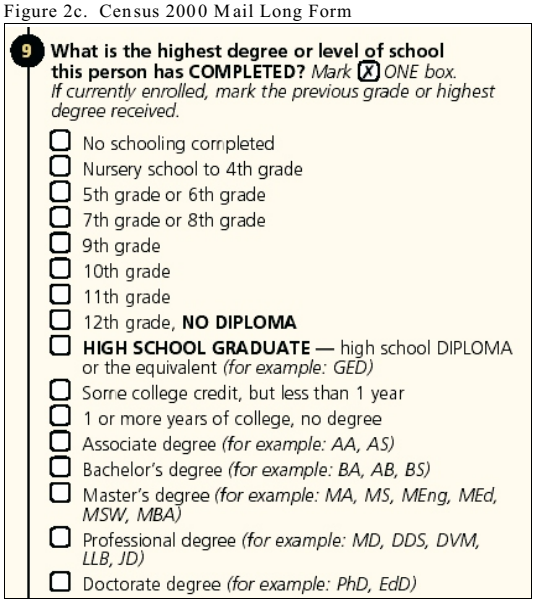
Figure 2b. C2SS CATI/CAPI Instrument

```
{Fill 1: SHOW RESPONDENT FLASHCARD D}
What is the highest degree or level of school (<Name> has/ you have)
COMPLETED?
   READ IF NECESSARY: If currently enrolled, what was the previous
   grade attended or highest degree received?

   <0>     No schooling completed
   <N>     Nursery or preschool
   <K>     Kindergarten
   <1-11> Grade 1-11: ENTER GRADE
   <12>    12th grade, NO DIPLOMA
   <20>    HIGH SCHOOL GRADUATE -high school DIPLOMA or the equivalent
             (GED)
   <21>    Some college credit but less than 1 year
   <22>    1 or more years of college, no degree
   <23>    Associate degree in college (AA or AS)
   <24>    Bachelor's degree (BA, AB, BS)
   <25>    Master's degree (MA, MS, MEng, MEd, MSW, MBA)
   <26>    Professional degree (MD, DDS, DVM, LLB, JD)
   <27>    Doctorate degree (PhD, EdD)

   P11/ S_P11
```

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Educational Attainment Questions

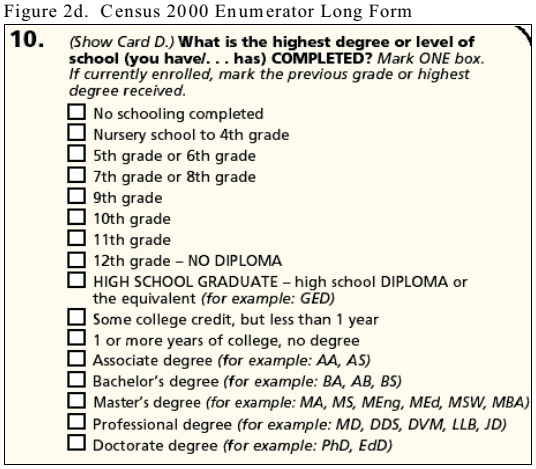
Figure 2c. Census 2000 Mail Long Form



9 **What is the highest degree or level of school this person has COMPLETED?** *Mark (X) ONE box. If currently enrolled, mark the previous grade or highest degree received.*

- ☐ No schooling completed
- ☐ Nursery school to 4th grade
- ☐ 5th grade or 6th grade
- ☐ 7th grade or 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade, **NO DIPLOMA**
- ☐ **HIGH SCHOOL GRADUATE** — high school DIPLOMA or the equivalent *(for example: GED)*
- ☐ Some college credit, but less than 1 year
- ☐ 1 or more years of college, no degree
- ☐ Associate degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, AB, BS)*
- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

Figure 2d. Census 2000 Enumerator Long Form



10. *(Show Card D.)* **What is the highest degree or level of school (you have/. . . has) COMPLETED?** *Mark ONE box. If currently enrolled, mark the previous grade or highest degree received.*

- ☐ No schooling completed
- ☐ Nursery school to 4th grade
- ☐ 5th grade or 6th grade
- ☐ 7th grade or 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade – NO DIPLOMA
- ☐ HIGH SCHOOL GRADUATE – high school DIPLOMA or the equivalent *(for example: GED)*
- ☐ Some college credit, but less than 1 year
- ☐ 1 or more years of college, no degree
- ☐ Associate degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, AB, BS)*
- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Marital Status Questions

Figure 3a. C2SS Mail Form

Figure 3b. C2SS CATI/CAPI Instrument

```
(Is <Name>/ Are you) married, widowed, divorced, separated, or
never married?

 <1> Now married
 <2> Widowed
 <3> Divorced
 <4> Separated
 <5> Never married

  B5/ B5_2
```

Figure 3c. Census 2000 Mail Long Form

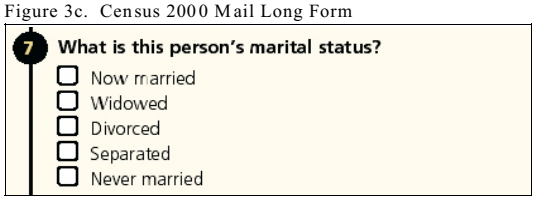
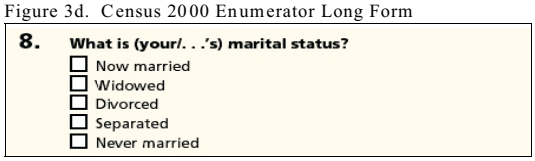


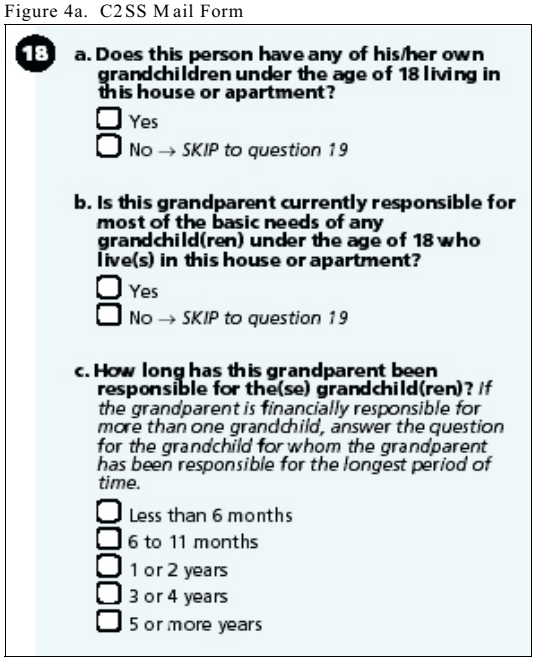
Figure 3d. Census 2000 Enumerator Long Form



Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Grandparents as Caregivers Questions

Figure 4a. C2SS Mail Form



18 **a. Does this person have any of his/her own grandchildren under the age of 18 living in this house or apartment?**

☐ Yes
☐ No → *SKIP to question 19*

b. Is this grandparent currently responsible for most of the basic needs of any grandchild(ren) under the age of 18 who live(s) in this house or apartment?

☐ Yes
☐ No → *SKIP to question 19*

c. How long has this grandparent been responsible for the(se) grandchild(ren)? *If the grandparent is financially responsible for more than one grandchild, answer the question for the grandchild for whom the grandparent has been responsible for the longest period of time.*

☐ Less than 6 months
☐ 6 to 11 months
☐ 1 or 2 years
☐ 3 or 4 years
☐ 5 or more years

Figure 4b. C2SS CATI/CAPI Instrument

{Does <Name>/Do you} have any of <his/her/your> grandchildren under the age of 18 living in this <house/apartment/mobile home/unit>?

<1> Yes
<2> No

P18a/ S_P18a

Figure 4b. C2SS CATI/CAPI Instrument

{Is <Name>/Are you} currently responsible for most of the basic needs of any grandchildren under the age of 18 who live in this <house/apartment/mobile home/unit>?

<1> Yes
<2> No

P18b/ S_P18b

Figure 4b. C2SS CATI/CAPI Instrument

How long {has <Name>/ have you} been responsible for these grandchildren?

IF FINANCIALLY RESPONSIBLE FOR MORE THAN ONE GRANDCHILD, ANSWER FOR THE GRANDCHILD FOR WHOM THE GRANDPARENT HAS BEEN RESPONSIBLE FOR THE LONGEST TIME

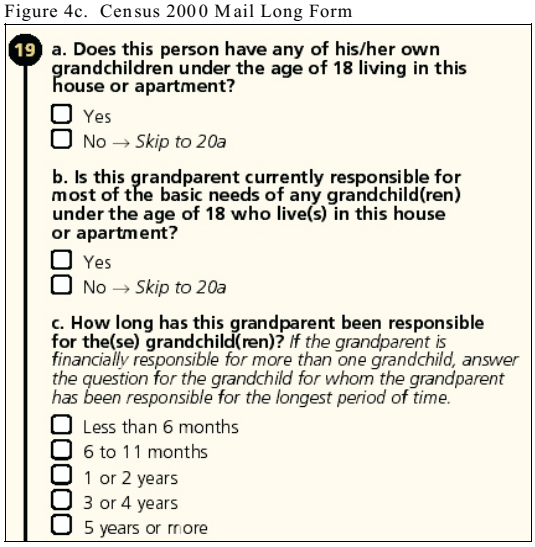
<1> Less than 1 month
<2> 1 to 6 months
<3> 7 to 12 months
<4> More than 12 months

P18c/ S_P18c

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Grandparents as Caregivers Questions

Figure 4c. Census 2000 Mail Long Form



19 **a. Does this person have any of his/her own grandchildren under the age of 18 living in this house or apartment?**

☐ Yes
☐ No → *Skip to 20a*

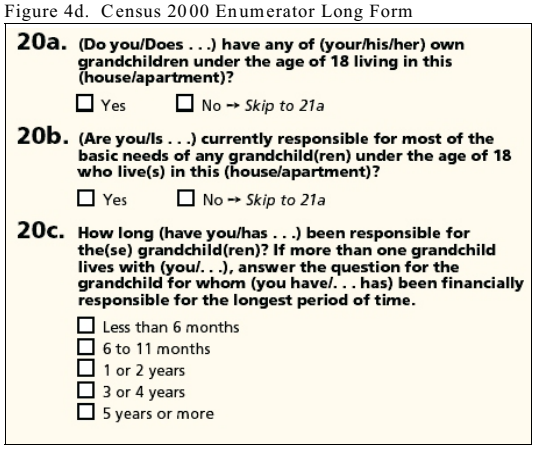
b. Is this grandparent currently responsible for most of the basic needs of any grandchild(ren) under the age of 18 who live(s) in this house or apartment?

☐ Yes
☐ No → *Skip to 20a*

c. How long has this grandparent been responsible for the(se) grandchild(ren)? *If the grandparent is financially responsible for more than one grandchild, answer the question for the grandchild for whom the grandparent has been responsible for the longest period of time.*

☐ Less than 6 months
☐ 6 to 11 months
☐ 1 or 2 years
☐ 3 or 4 years
☐ 5 years or more

Figure 4d. Census 2000 Enumerator Long Form



20a. **(Do you/Does . . .) have any of (your/his/her) own grandchildren under the age of 18 living in this (house/apartment)?**

☐ Yes ☐ No → *Skip to 21a*

20b. **(Are you/Is . . .) currently responsible for most of the basic needs of any grandchild(ren) under the age of 18 who live(s) in this (house/apartment)?**

☐ Yes ☐ No → *Skip to 21a*

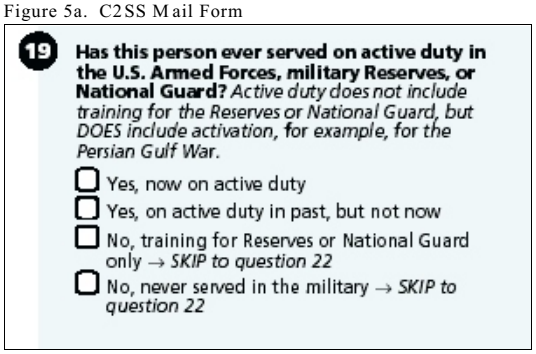
20c. **How long (have you/has . . .) been responsible for the(se) grandchild(ren)? If more than one grandchild lives with (you/. . .), answer the question for the grandchild for whom (you have/. . . has) been financially responsible for the longest period of time.**

☐ Less than 6 months
☐ 6 to 11 months
☐ 1 or 2 years
☐ 3 or 4 years
☐ 5 years or more

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Veteran Status Questions

Figure 5a. C2SS Mail Form



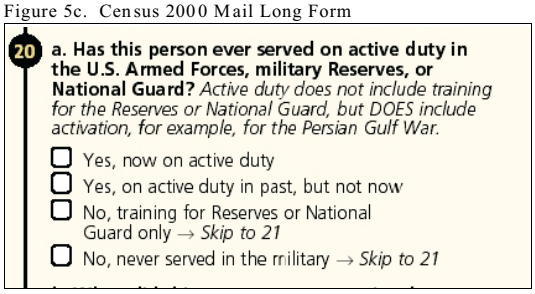
19 **Has this person ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard?** *Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War.*

- ☐ Yes, now on active duty
- ☐ Yes, on active duty in past, but not now
- ☐ No, training for Reserves or National Guard only → *SKIP to question 22*
- ☐ No, never served in the military → *SKIP to question 22*

Figure 5b. C2SS CATI/CAPI Instrument

```
(Has <Name>/ Have you) ever served on active duty in the U.S. Armed
Forces, military Reserves, or National Guard? Do not include training for
the reserves or National Guard but do include activation, for example,
for the Persian Gulf War.
     <1> Yes
     <2> No
 P19a/ S_P19a

(Is <Name>/Are you) currently on active duty?
     <1> Yes
     <2> No
 P19b/ S_P19b

{Has <Name>/ Have you ever been in the U.S. military Reserves or the
National Guard?
     <1> Yes
     <2> No
 P19c/ S_P19c
```

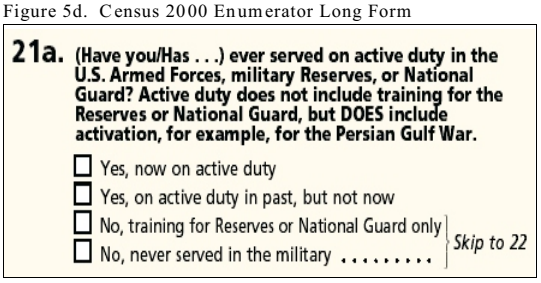
Figure 5c. Census 2000 Mail Long Form



20 **a. Has this person ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard?** *Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War.*

- ☐ Yes, now on active duty
- ☐ Yes, on active duty in past, but not now
- ☐ No, training for Reserves or National Guard only → *Skip to 21*
- ☐ No, never served in the military → *Skip to 21*

Figure 5d. Census 2000 Enumerator Long Form



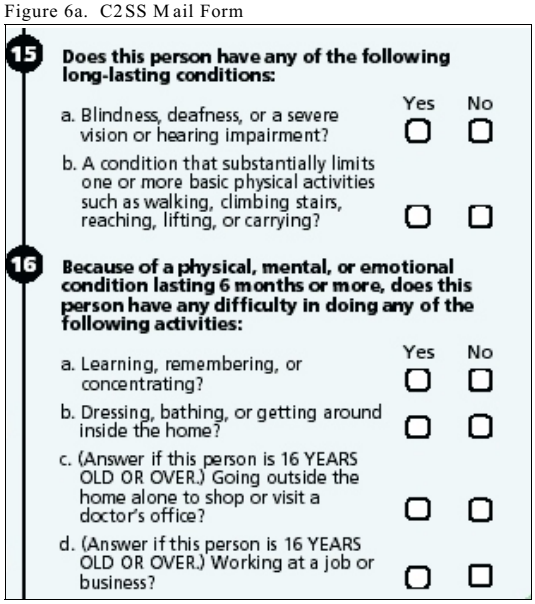
21a. **(Have you/Has . . .) ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard? Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War.**

- ☐ Yes, now on active duty
- ☐ Yes, on active duty in past, but not now
- ☐ No, training for Reserves or National Guard only
- ☐ No, never served in the military . . . . . } *Skip to 22*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Disability Questions

Figure 6a. C2SS Mail Form



15 **Does this person have any of the following long-lasting conditions:**

	Yes	No
a. Blindness, deafness, or a severe vision or hearing impairment?	☐	☐
b. A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?	☐	☐

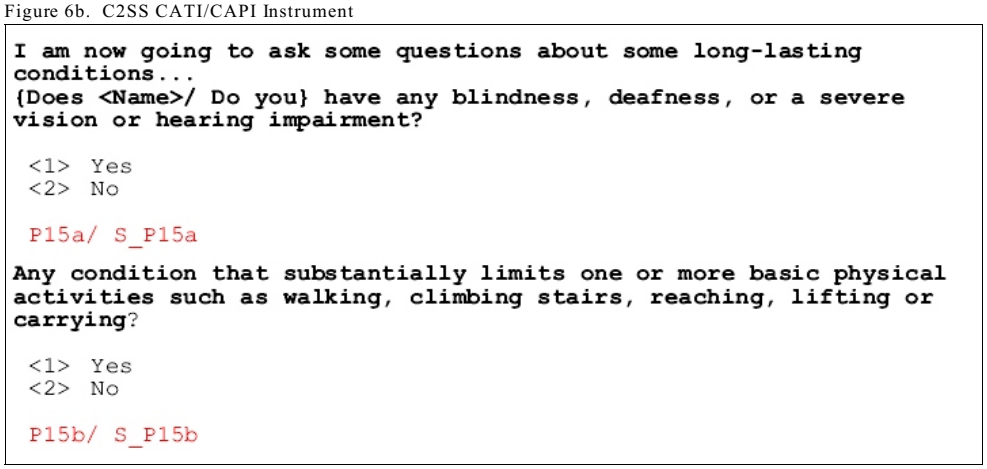
16 **Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in doing any of the following activities:**

	Yes	No
a. Learning, remembering, or concentrating?	☐	☐
b. Dressing, bathing, or getting around inside the home?	☐	☐
c. (Answer if this person is 16 YEARS OLD OR OVER.) Going outside the home alone to shop or visit a doctor's office?	☐	☐
d. (Answer if this person is 16 YEARS OLD OR OVER.) Working at a job or business?	☐	☐

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Disability Questions

Figure 6b. C2SS CATI/CAPI Instrument



I am now going to ask some questions about some long-lasting conditions...
{Does <Name>/ Do you} have any blindness, deafness, or a severe vision or hearing impairment?

<1> Yes
<2> No

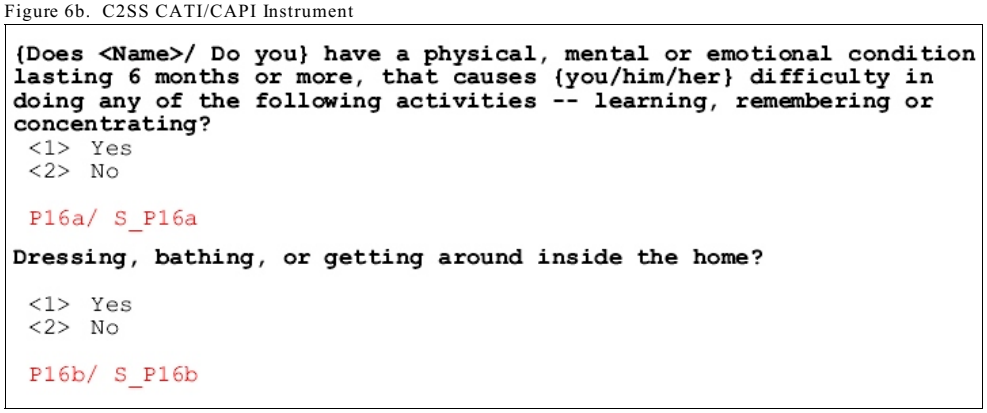
P15a/ S_P15a

Any condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting or carrying?

<1> Yes
<2> No

P15b/ S_P15b

Figure 6b. C2SS CATI/CAPI Instrument



{Does <Name>/ Do you} have a physical, mental or emotional condition lasting 6 months or more, that causes {you/him/her} difficulty in doing any of the following activities -- learning, remembering or concentrating?
<1> Yes
<2> No

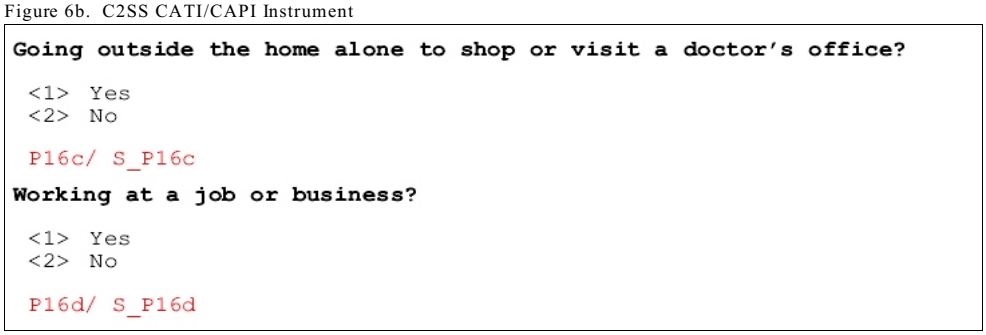
P16a/ S_P16a

Dressing, bathing, or getting around inside the home?

<1> Yes
<2> No

P16b/ S_P16b

Figure 6b. C2SS CATI/CAPI Instrument



Going outside the home alone to shop or visit a doctor's office?

<1> Yes
<2> No

P16c/ S_P16c

Working at a job or business?

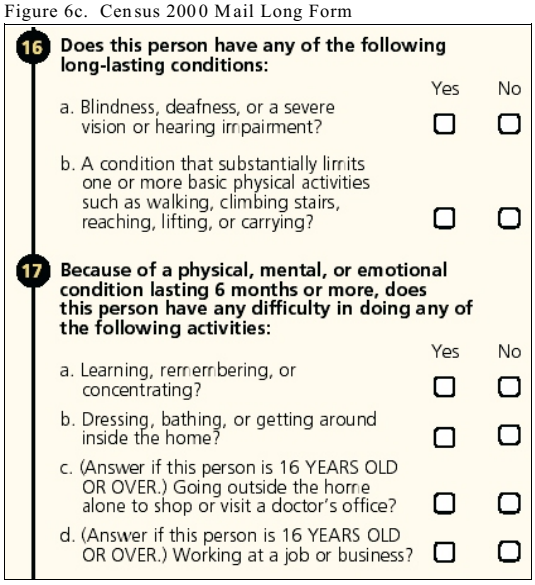
<1> Yes
<2> No

P16d/ S_P16d

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Disability Questions

Figure 6c. Census 2000 Mail Long Form



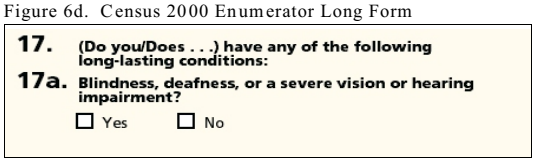
16 **Does this person have any of the following long-lasting conditions:**

	Yes	No
a. Blindness, deafness, or a severe vision or hearing impairment?	☐	☐
b. A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?	☐	☐

17 **Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in doing any of the following activities:**

	Yes	No
a. Learning, remembering, or concentrating?	☐	☐
b. Dressing, bathing, or getting around inside the home?	☐	☐
c. (Answer if this person is 16 YEARS OLD OR OVER.) Going outside the home alone to shop or visit a doctor's office?	☐	☐
d. (Answer if this person is 16 YEARS OLD OR OVER.) Working at a job or business?	☐	☐

Figure 6d. Census 2000 Enumerator Long Form

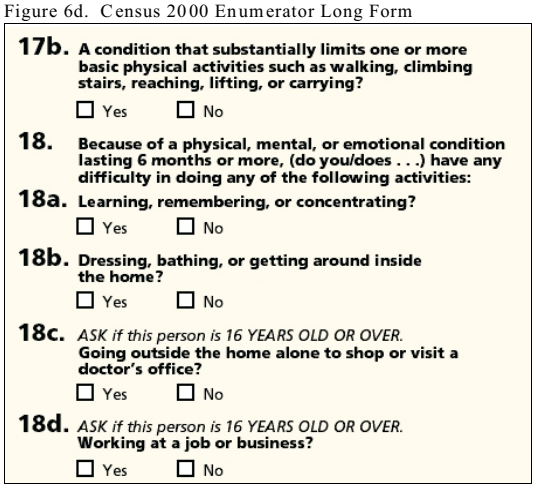


17. **(Do you/Does . . .) have any of the following long-lasting conditions:**

17a. **Blindness, deafness, or a severe vision or hearing impairment?**

☐ Yes ☐ No

Figure 6d. Census 2000 Enumerator Long Form



17b. **A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?**

☐ Yes ☐ No

18. **Because of a physical, mental, or emotional condition lasting 6 months or more, (do you/does . . .) have any difficulty in doing any of the following activities:**

18a. **Learning, remembering, or concentrating?**

☐ Yes ☐ No

18b. **Dressing, bathing, or getting around inside the home?**

☐ Yes ☐ No

18c. *ASK if this person is 16 YEARS OLD OR OVER.* **Going outside the home alone to shop or visit a doctor's office?**

☐ Yes ☐ No

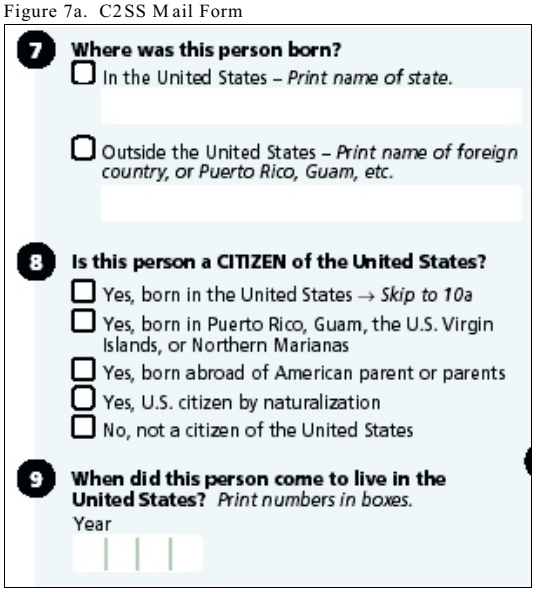
18d. *ASK if this person is 16 YEARS OLD OR OVER.* **Working at a job or business?**

☐ Yes ☐ No

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Region of Birth Questions

Figure 7a. C2SS Mail Form



7 **Where was this person born?**

☐ In the United States – *Print name of state.*

☐ Outside the United States – *Print name of foreign country, or Puerto Rico, Guam, etc.*

8 **Is this person a CITIZEN of the United States?**

☐ Yes, born in the United States → *Skip to 10a*

☐ Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas

☐ Yes, born abroad of American parent or parents

☐ Yes, U.S. citizen by naturalization

☐ No, not a citizen of the United States

9 **When did this person come to live in the United States?** *Print numbers in boxes.*

Year

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Region of Birth Questions

Figure 7b. C2SS CATI/CAPI Instrument

Where {were you/was <Name>} born?

(1) Alabama	(19) Louisiana	(37) Oklahoma
(2) Alaska	(20) Maine	(38) Oregon
(3) Arizona	(21) Maryland	(39) Pennsylvania
(4) Arkansas	(22) Massachusetts	(40) Rhode Island
(5) California	(23) Michigan	(41) South Carolina
(6) Colorado	(24) Minnesota	(42) South Dakota
(7) Connecticut	(25) Mississippi	(43) Tennessee
(8) Delaware	(26) Missouri	(44) Texas
(9) Dist. of Columbia	(27) Montana	(45) Utah
(10) Florida	(28) Nebraska	(46) Vermont
(11) Georgia	(29) Nevada	(47) Virginia
(12) Hawaii	(30) New Hampshire	(48) Washington
(13) Idaho	(31) New Jersey	(49) West Virginia
(14) Illinois	(32) New Mexico	(50) Wisconsin
(15) Indiana	(33) New York	(51) Wyoming
(16) Iowa	(34) North Carolina	(57) United States (state unknown)
(17) Kansas	(35) North Dakota	(99) NOT IN THE U.S.
(18) Kentucky	(36) Ohio	P7/ S_P7

Figure 7b. C2SS CATI/CAPI Instrument

{Is <Name>/Are you} a citizen of the United States?

<1> Yes
<2> No

P8A/S_P8A

Figure 7b. C2SS CATI/CAPI Instrument

{Was <Name>/Were you} born abroad of an American parent or parents, or did {he/she/you} become a citizen by naturalization?

<1> Born abroad of American parent or parents
<2> Citizen by naturalization

P8B/S_P8B

Figure 7b. C2SS CATI/CAPI Instrument

You have indicated that {<Name> is/you are} a citizen, and that you don't know {<his/her>/your} exact place of birth, but perhaps you could give us other general information about {<him/her>/yourself}... {Was <Name>/Were you} born in the U.S., born in Puerto Rico, Guam, U.S. Virgin Islands or Northern Marianas, born abroad of an American parent or parents, or did {he/she/you} become a naturalized citizen?

<1> Born in the U.S.
<2> Born in Puerto Rico, Guam, U.S. Virgin Islands or Northern Marianas
<3> Born abroad of an American parent or parents
<4> Citizen by naturalization

P8C/S_P8C

Figure 7b. C2SS CATI/CAPI Instrument

When did (<Name>/you) come to live in the United States?

P9/ S_P9

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Region of Birth Questions

Figure 7c. Census 2000 Mail Long Form

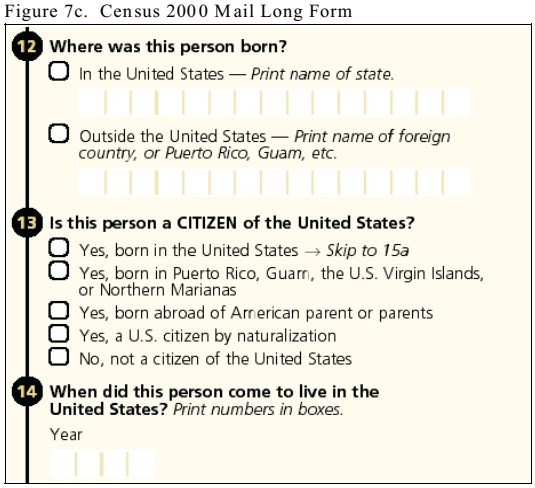
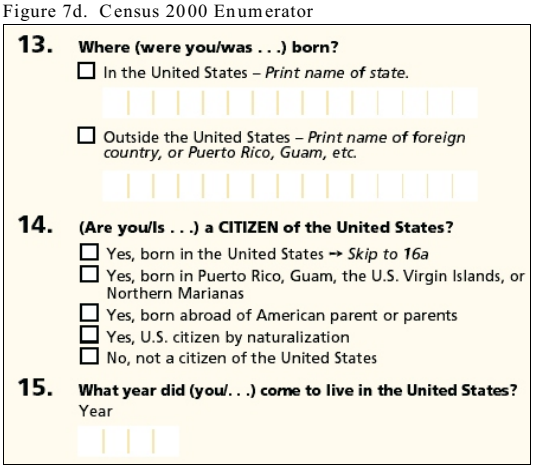


Figure 7d. Census 2000 Enumerator



Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Language Spoken at Home Questions

Figure 8a. C2SS Mail Form

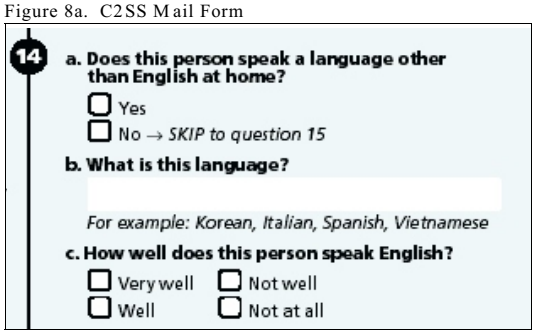


Figure 9b. C2SS CATI/CAPI Instrument

```
(Does <Name>/ Do you) speak a language other than English at home?

      <1>   Yes
      <2>   No

      P14a/ S_P14a

What is this language?
      FOR EXAMPLE: KOREAN, ITALIAN, SPANISH, VIETNAMESE

      __P14b / S_P14b_____________________

How well (does <Name>/do you) speak English - very well, well, not
well, not at all?

 <1> Very well
 <2> Well
 <3> Not well
 <4> Not at all

 P14c/ S_P14c
```

Figure 8c. Census 2000 Mail Long Form

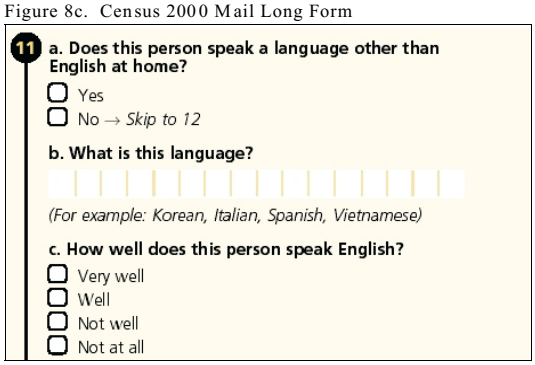
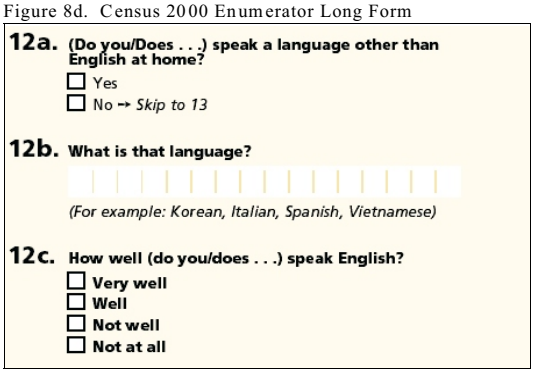


Figure 8d. Census 2000 Enumerator Long Form



Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Ancestry Questions

Figure 9a. C2SS Mail Form

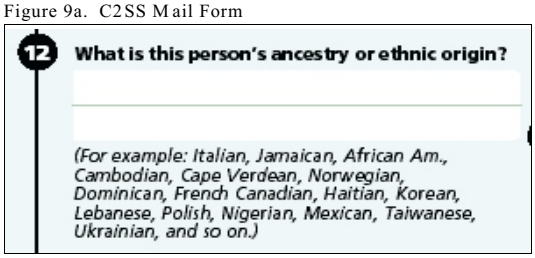


Figure 9b. C2SS CATI/CAPI Instrument

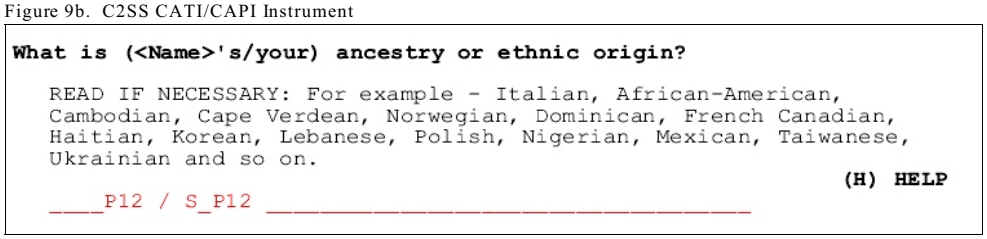


Figure 9c. Census 2000 Mail Long Form

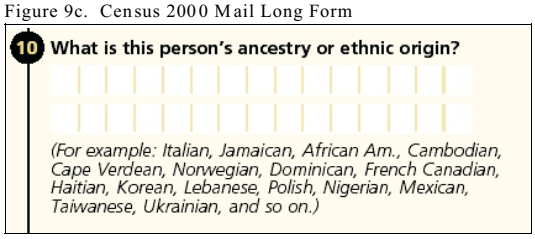
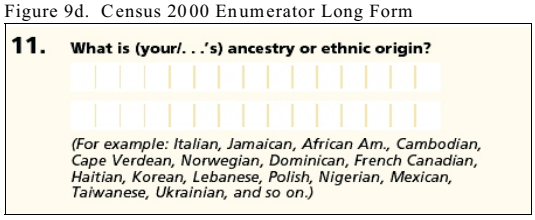


Figure 9d. Census 2000 Enumerator Long Form



Appendix C. Federal Uses of Selected Social Characteristics

Selected Social Items	Federal Uses of the Data
School Enrollment and Educational Attainment	■ Required by law to profile the socioeconomic condition of school-age children ■ Used by government agencies for funding allocations and program planning and implementation ■ Needed to determine the extent of illiteracy rates of citizens in language minorities to meet statutory requirements under the Voting Rights Act
Marital Status	■ Ensures accurate planning and implementation for many government programs using information such as the numbers of married women in the labor force, elderly widowed individuals, or young single people who soon may establish homes of their own ■ Helps define for the Department of Housing and Urban Development qualifying census tracts for the Low-Income Housing Tax Credits and the Mortgage Revenue Bonds Programs
Grandparents as Caregivers	■ Used by the Census Bureau to comply with legislation (13 U.S.C., Chapter 5, Section 141), passed in the 104th Congress, that states that the decennial census must obtain information about grandparents who have primary responsibility for the care of their grandchildren
Veteran Status	■ Used primarily by the Department of Veterans Affairs to measure the needs of veterans ■ Used to evaluate veterans' programs dealing with education, employment, and health care ■ Used to conduct analysis, program planning, and budgeting for federal veterans' programs ■ Provides data for reports to Congress on state projections of veterans' facilities and services

Appendix C. Federal Uses of Selected Social Characteristics

Selected Social Items	Federal Uses of the Data
Disability	■ Used to distribute funds and develop programs for people with disabilities and the elderly under the Rehabilitation Act ■ Needed under the Americans with Disabilities Act to ensure that comparable public transportation services are available for all segments of the population ■ Required to award federal grants, under the Older Americans Act, based on the number of elderly people with physical and mental disabilities
Place of Birth, Citizenship and Year of Entry	■ Provides essential data to set and evaluate immigration policies and laws ■ Required for the Department of Commerce and the Department of Justice to comply with Voting Rights Ace bilingual election requirements ■ Needed by the U.S. Citizen and Immigration Services of the Department of Homeland Security to project staffing and other resource needs for non-citizens to complete the naturalization process ■ Used by the Department of Health and Human Services to identify areas with large refugee populations and concentrations
Language spoken at home	■ Provides government agencies with information for their programs that serve the needs of the foreign born and specifically those who have difficulty speaking English ■ Used under the Voting Rights Act to meet statutory requirements for making voting materials available in minority languages ■ Used by the Census Bureau, under the Voting Rights Act, to determine whether illiteracy rates of citizens in language minorities within states or governmental subdivisions exceed the national average ■ Used by the Department of Education for preparing a report to Congress on the social and economic status of children served by different local school districts

Appendix C. Federal Uses of Selected Social Characteristics

Selected Social Items	Federal Uses of the Data
Ancestry	■ Required to enforce provisions under the Civil Rights Act which prohibit discrimination based upon race, sex, religion, and national origin ■ Used to measure the social and economic characteristics of ethnic groups and to tailor services to accommodate cultural differences ■ Needed by the Department of Labor to draw samples for surveys that provide employment data

Appendix D. Characteristics of Counties Used in Sub-National Comparisons

These counties represent areas with populations that meet the 65,000 minimum required for yearly data-release. They are a diverse set of areas that were chosen to be test sites because they vary geographically and demographically. They reflect both urban and rural areas and range in household population size from 70,533 in Sevier, TN to over 1.6 million in Broward, FL. Population density also varies from 20 persons per square kilometer in Yakima, WA to nearly 12,000 persons per square kilometers in Bronx, NY. Demographically, the sites include areas with 30 percent or more of the population reporting as Hispanic (Yakima, Tulare, Pima, and Bronx). Several sites include high proportions of the foreign born (San Francisco, Bronx, and Broward) and many sites include high percentages of persons speaking a language other than English.

The table below summarizes geographic, demographic, social, economic, and housing characteristics for the 18 counties used in this report. Geographic data are based on Census 2000 counts. The remaining data are based on the 2001 ACS.

ACS Test Site	Square Kilometers	Census 2000 Household Population	Density*	Percent Hispanic	Percent Foreign Born	Percent Language Other Than English	Percent College Graduates
Sevier TN	1,534	70,533	46	1	2	3	13
Madison, MS	1,863	72,615	39	1	2	3	39
Calvert MD	557	73,982	133	2	3	5	24
Jefferson, AR	2,292	78,989	34	1	1	2	17
Black Hawk IA	1,470	121,535	83	2	4	6	22
Schuylkill PA	2,017	143,110	71	1	1	4	11
Yakima WA	11,127	218,844	20	37	17	34	53
Rockland NY	451	279,104	619	11	20	29	40
Tulare CA	12,495	361,980	29	53	22	44	12
Hampden MA	1,602	441,799	276	16	8	22	21
Douglas NE	857	451,878	527	7	7	10	31
Lake, IL	1,160	623,378	538	15	16	23	40
Multnomah OR	1,127	643,798	571	8	13	17	33
San Francisco CA	121	756,976	6,258	14	38	46	48
Pima AZ	23,794	821,712	35	31	11	27	28
Franklin OH	1,399	1,046,872	749	2	7	9	34
Bronx NY	109	1,285,415	11,793	51	30	55	15
Broward FL	3,131	1,603,094	512	18	26	29	26

* Persons per square kilometer

Appendix E. Summary of County-Level Differences

The difference between the C2SS and Census 2000 values was determined (C2SS minus Census 2000) and only the statistically significant differences are displayed in these tables. A positive value indicates that the C2SS value was greater than the Census 2000 value. A negative value means that the C2SS has a lower estimate for this characteristic than Census 2000.

Table 1. School Enrollment, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Population 3 years and over enrolled in school	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Nursery school, preschool			1.9						-1.4		-1.5	-1.1				-1.1	-0.5	
Kindergarten	-2.2				-1.2						-0.8						-0.7	0.6
Elementary school (grades 1-8)			-3.6			-3.2				-1.5				1.4	-1.5		1.4	
High school grade (grades 9-12)									2.6									
College or graduate school			3.4	3.5		2.2	2.4				1.4				2.5			

Table 2. Educational Attainment, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Population 25 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Less than 9th grade			1.1			1.0		-0.7			-0.5	-0.8		-2.2		-0.3		-0.5
9th to 12th grade, no diploma			-2.9	-1.9			-1.4	1.1			-0.6		-0.7			-1.2	-1.8	-0.7
High school graduate (including equivalency)							2.6	1.4			1.5	1.6	1.0	1.4		1.5	1.8	1.4
Some college, no degree								-1.5		-1.1		-1.0						-1.0
Associate degree										-1.0							-0.6	0.6
Bachelor's degree		-3.5								1.2	-0.9			2.0			1.1	0.5
Graduate or professional degree										0.7	0.8						-0.4	
Percent high school graduate or higher			1.8	2.3			2.3			1.1	1.1		0.8	2.8		1.5	1.7	1.2
Percent bachelor's degree or higher										2.0				1.7			0.7	

Appendix E. Summary of County-Level Differences

Table 3. Marital Status, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Population 15 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Never married			2.0	1.7			1.4	1.0		1.3	1.3		1.0	1.0			2.0	0.9
Now married, except separated				-2.4	-1.6			-1.7		-1.4			-1.1	-1.1	-1.3		-1.5	-2.1
Separated					0.8													
Widowed		1.1																0.4
Female																		0.3
Divorced	2.2	-2.1																0.7
Female		-1.2													0.4			0.4

Table 4. Grandparents, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Number of grandparents with own grandchild under 18 in household	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Responsible for grandchildren				19.2					8.6									

Table 5. Veteran Status, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Civilian population 18 years and older	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Civilian veterans									-0.6	-1.2			-0.5					-0.6

Appendix E. Summary of County-Level Differences

Table 6. Disability Status, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Civilian Noninstistutionalized Population	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Population 5 to 20 years																		
With a disability								-2.2	-2.6	-3.3		-2.1	-1.4	-4.0		-2.0	-2.2	-2.0
Population 21-64 years																		
With a disability	-2.3	-2.3	-7.5	-5.6	-2.8	-2.7	-6.0	-6.9	-9.5	-6.0	-3.1	-4.2	-3.3	-7.6	-4.9	-4.1	-12.0	-7.2
Population 65 years and older																		
With a disability											3.2							

Table 7a. Place of Birth, Citizenship, and Year of Entry, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Total Population	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Native					-1.1		1.8		1.3						0.8	-0.5	1.3	-0.7
Born in United States							1.9	1.3	1.3							-0.6	1.6	
State of residence					-1.8						-1.0			0.9			1.2	-0.6
Different state																		
Born in Puerto Rico, U.S. Island areas, or born abroad outside the United States to American parent(s)													0.2			0.1		
Foreign born					1.1		-1.8		-1.3						-0.8	0.5	-1.3	0.7
Naturalized citizen (of foreign born)	-0.5						-0.6	-1.0				0.5	-0.4		0.3			
Not a citizen (of foreign born)				1.0		-1.1							0.7		-0.6		-0.9	0.8

Appendix E. Summary of County-Level Differences

Table 7b. Region of Birth of Foreign Born, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Foreign-born population with region of birth reported	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Europe		14.9				-15.1												
Asia																		
Africa				-9.1				-1.0										
Oceania													-0.6					
Latin America			-12.1															
Northern America			-6.4															

Table 8. Language Spoken at Home, Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Population 5 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
English only	0.8			1.1				2.2			0.6					0.5		
Language other than English	-0.8			-1.1				-2.2			-0.6					-0.5		
Speak English less than "very well"				-0.5				-1.4	-2.2					-0.9	-0.9		-3.0	
Spanish				-0.9			-1.4				-0.5		0.5			-0.3		
Speak English less than "very well"		-0.4		-0.6					-2.4				0.4		-0.7		-2.9	
Other Indo-European languages												-0.9						
Speak English less than "very well"					1.0			-0.9				-0.4				0.3		-0.4
Asian and Pacific Islander languages					-0.3							0.3				-0.3		
Speak English less than "very well"												0.3						

Appendix E. Summary of County-Level Differences

Table 9. Ancestry (Total Reported), Statistically Significant Differences in County-Level Estimates (C2SS Minus Census 2000 Sample)

Total Population	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Arab																		0.2
Czech						-0.4						-0.2	-0.2	-0.1				-0.1
Danish																		
Dutch	1.7														0.3	0.3		
English	3.6		3.8			1.9	1.3		1.9	0.9	1.0	0.6	1.1			1.3		0.7
French (except Basque)				1.0		0.5				3.1	0.8		0.7			0.4		0.2
French Canadian										-1.4								
German	3.1	1.8		2.6	3.3	2.2					2.5	1.1	1.3		1.0	3.4		0.6
Greek														0.2				
Hungarian								0.7										
Irish	2.8	2.5		2.5	1.4					0.8						1.1		0.5
Italian						1.3												
Lithuanian						1.5												
Norwegian					-1.2		-0.6								-0.3			
Polish						2.0		1.6										
Portuguese									0.6	0.5								0.2
Russian												0.5				0.4		
Scotch-Irish											0.3		0.8			0.3		0.1
Scottish			1.9		-0.4								0.7					0.2
Slovak																		
Subsaharan African								-0.2					-0.2					
Swedish							0.5				0.8							
Swiss																		
Ukrainian								-0.3		0.4								
United States or American	-5.5			-3.8			-1.8	1.7	-2.3		-0.4				-0.5		-1.3	-0.7
Welsh																		
West Indian (excluding Hispanic origin groups)																		