

Changes to the American Community Survey between 2007 and 2008 and their Potential Effect on the Estimates of Same-Sex Couple Households

The 2008 American Community Survey (ACS) questionnaire introduced changes reflecting requests by agencies to include additional questions on the survey. Modifications and to improvements were also made to existing questions resulting in changes in the format and layout of the questionnaire. Additional technological changes were made to the processing systems used in the data collection phase of the ACS. We believe that some of these design and processing changes may have contributed to the observed decline in the overall number of unmarried same-sex partners between 2007 and 2008 and suggest that the previous ACS surveys may have over-estimated the component of the total number of couples that were originally reported as same-sex spouses. The purpose of this note is to provide possible explanations for this decline in light of the numerous changes that occurred in the survey instrument between 2007 and 2008.

Change in the Size of the Estimates

Since 2005, when the ACS increased its sample size to 3 million households, the ACS estimate of same-sex households has been between 753,000 and 780,000 for the period 2005 to 2007 (Table 1). These numbers have been published in the American Factfinder as the final edited estimates. As in previous years, the current 2008 ACS editing routine for the relationship item assigns respondents who originally reported being the same-sex spouse of the householder to being a same-sex unmarried partner. The pre-edited responses for the 2005-2007 period indicated that about 45 percent to 50 percent of all unmarried same-sex couples were originally reported as same-sex spouses. While the estimate of same-sex unmarried partners (415,000) in 2008 was not statistically different from the 2007 estimate (413,000), the number of couples reporting themselves as same-sex spouses declined from 341,000 in 2007 to 150,000 in 2008, or 27 percent of all same-sex couples in 2008.

Changes that occurred between 2007 and 2008 in the survey

Two basic categories of change occurred between 2007 and 2008: (1) processing and editing changes and (2) formatting changes to the questionnaire. The first category reflects technological improvements in data collection and efforts to make the processing and editing phases more consistent between data in the ACS and the 2010 Census. The second category results from questionnaire formatting changes caused by the basic realignment of the core demographic items on the paper instrument to resemble the Census 2010 questionnaire and by modifications to existing questions on the survey.

The following two sections will briefly summarize these changes and their potential effect on the estimates of same-sex couple households. The changes described below were made to improve the overall quality and consistency of all ACS data. The impact of

these changes on the estimated number of same-sex households appears to be an ancillary result of these changes.

Processing and editing changes

1. Data processing changes were made to improve data transcription from the mailed paper questionnaires. Keying is the step in the processing offices where staff members enter the responses from paper to an electronic data file. A change was made from keying the responses from the paper form to recording the data from an electronically captured image of the form. This new process has the capability of reducing potential keying errors.
2. Although the relationship and gender items used to identify same-sex couples anticipate only one marked response, respondents may inadvertently check multiple boxes. The processing of multiple marks to the relationship and gender items was handled differently over time, with 2007 a transition year.
 - a. Before June 2007, if a person keying the response from a paper form encountered a multiple mark for either relationship or gender, the first marked category was recorded as the response prior to further editing of the data. In the case of the gender item, multiple marks (both the male and female boxes were checked) were always keyed as male during processing. For the relationship item, if “Husband/wife” was marked as well as another response, “Husband/wife” was keyed in as the response because it appears as the first response category in the relationship question. In general, this was the basic principal used for most items on the ACS when multiple marks were encountered for an item requiring only a single response.
 - b. Beginning in June 2007, data began to be recorded from the captured image of the paper form, with this processing step completed by October 2007. All multiple checkbox marks are now sent for adjudication to the keyer. If any marks are judged to be in error (not intended by the respondent as evident by, for example, erasures or cross-outs), the marks are disregarded as a response. Following this adjudication step, multiple checkbox marks may still be evident. In subsequent processing, multiple marks for the relationship and gender items are considered blank and allocated in the editing phase instead of being assigned the first recorded value by the keyer. This is the same procedure that will be used in the 2010 Census. We believe the previous process of always keying in the first response—which would have been “Husband/wife” in the relationship item when “Husband/wife” was marked with another category, or “Male” in the gender item--could have erroneously created households with people reported as the same-sex spouse of the householder.

3. A change was also made to the overall editing process of the ACS in 2008 in determining who would be identified in the internal Census Bureau data files as being an **“as reported”** same-sex spouse. Both in 2008 and in previous years, a person’s responses to the age and gender items were edited first and then their relationship status to the householder. Before 2008 in the relationship edit, if a person was reported as a spouse and was of the same-sex as the householder, that household was designated as a same-sex spouse household in the internal Census Bureau data file but was shown as an unmarried partner household in officially published estimates on the American Factfinder. Those internal files have been used in a previous report¹ to estimate the number of reported same-sex spouse households. However, beginning in 2008, if the response to the gender item for either the householder or spouse was missing or allocated, these couples would **not** be recorded in the internal data files as an “as reported” same-sex spouse (as one or both respondents would have reported incompletely on the gender item) but would be recorded as a same-sex unmarried partner. The purpose of this change was to make the calculation of imputation rates consistent across all ACS variables in 2008. Its effect, however, reduced the number of 2008 “as reported” same-sex spouses² shown in Table 1 of this note. The 2008 ACS procedure is now consistent with how “as reported” same-sex spouses will be designated in the 2010 Census and will more accurately indicate the number of originally reported same-sex spouse households whose reports consist of no missing or allocated responses for either the sex or relationship items.

Formatting changes

The effects of formatting and questionnaire layout changes are more difficult to evaluate since they are influenced by how people perceive and understand questions rather than by a specific and measurable change in processing and editing rules. All of the following changes were initiated at the beginning of the 2008 ACS panel in January.

1. Possibly, the most important format change is from a grid-based questionnaire to a more directed sequential ordering of questionnaire items. In 2008, all the core demographic responses for a single person are in one vertical column with a distinct sequential numbering of questions. In 2007, the core items were spread over two pages with less specific instructions on how the respondent was to

¹ Martin O’Connell and Daphne Lofquist, “Counting Same-sex Couples: Official Estimates and Unofficial Guesses,” Paper presented at the Annual Meetings of the Population Association of America, Detroit, MI, April 30, 2009. >><http://www.census.gov/population/www/socdemo/files/counting-paper.pdf><<

² An examination of the actual responses indicated that in 2007, about 7 percent of “reported” same-sex spouses would have been designated as “allocated” using the new 2008 coding rules. However, for both 2007 and 2008, these households would be included in the total count of same-sex unmarried partner households shown in all published tables in the American Factfinder.

- proceed and without a numbering system marked for each separate item.³ A numbering sequence was shown only at the top of the page. An in-house test of how respondents visually proceed when answering the items suggests a more sequential reporting of data on the 2008 form relative to the 2007 form—i.e., answering all the items for Person 1 before proceeding to answer the items for Person 2. A preliminary evaluation of the grid and sequential formats also indicated significantly higher proportion of persons who reported themselves as male than a female in the grid format.⁴
2. Changes were made in the ordering of basic demographic items from name, gender, age, and relationship in the 2007 form to name, relationship, gender, and age in the 2008 form. This placed the relationship and sex items in closer proximity on the questionnaire and the flow of items are now consistent with both the Census 2000 and the 2010 Census questionnaires.
 3. The 2008 form instructed the respondent to mark only one box each for the relationship and the gender items. Space limitations in 2007 prevented including this instruction. This instruction is now consistent with the 2010 Census questionnaire and could lead to improved responses by reducing multiple marks.
 4. The relationship item was expanded to include more categories of children and in-laws consistent with the 2010 Census questionnaire. There is no expectation or presumption that this would affect the reporting of the number of same-sex spouses, as “Husband or wife” is listed as the first category in the relationship list on both the 2007 and 2008 questionnaires.

Summary

The changes discussed in this note will make the ACS more consistent with 2010 decennial census procedures and questionnaire formats. The implementation of these changes can be viewed as a technical improvement in the collection and processing of all ACS data. The decline in the reported number of same-sex spouses that at first may seem alarming is actually an improvement although the ACS 2008 1-year estimate for the reported number of same-sex spouses is still higher than the cumulative numbers of known legally married same-sex spouses (about 35,000 nationwide through calendar year 2008). In addition, another 40,000-50,000 may have reported themselves as spouses because they were in civil unions or domestic partnerships.⁵ It is believed that the 2008 ACS data represents an improvement in the estimate of same-sex spouses as some data

³ The ACS 2007 and 2008 questionnaires can be viewed at the following: for the 2007 questionnaire <http://www.census.gov/acs/www/Downloads/SQuest07.pdf> and for the 2008 questionnaire <http://www.census.gov/acs/www/Downloads/SQuest08.pdf>

⁴ See John Chestnutt, “Effects of Using a Grid versus a Sequential Form on the ACS Basic Demographic Data, Final Report” March 6, 2008

<< http://www.census.gov/acs/www/Downloads/ACS-MP-09_Grid-Sequential_Test_Final_Report.pdf >>

⁵ Estimates by Gary Gates of the Williams Institute, UCLA, as reported by Richard Chin, “2010 Census Changes Reflect Gay Marriages,” July 4, 2009. <http://www.twincities.com/ci_12745891>

users have claimed that Census numbers of same-sex spouse have been too high in the past.⁶

Although estimates of same-sex spouse is still not part of the standard production run of the ACS on the American Factfinder, the Census Bureau will provide research tabulations of both same-sex unmarried partners and couples reporting that they are spouses on the Census Bureau's "Families and Living Arrangements" webpage.⁷ Continuing research on this topic and presentation of these estimates will provide needed information to better understand the changing relationships of American households.

⁶ Gary Gates and Michael D. Steinberger, "Same-Sex Unmarried Partner Couples in the American Community Survey: The Role of Misreporting, Miscoding and Misallocation," Paper presented at the Annual Meetings of the Population Association of America, Detroit, MI, April 30, 2009.

⁷ See the "Same-sex Couples" section of the Families and Living Arrangements webpage at <<http://www.census.gov/population/www/socdemo/hh-fam.html>>

Table 1. Estimates of Same-Sex Households by Editing Status:
American Community Survey: 2005-2008

Survey year and sex of couples	Edited Responses ¹					Reported as unmarried partners ²
	Total same-sex couples	Originally reported as spouses			Std Error	
		Number	Percent			
2008						
Total	564,743	149,956	26.6	0.55	414,787	
Male-Male	270,600	65,764	24.3	0.88	204,836	
Female-Female	294,143	84,192	28.6	0.74	209,951	
2007						
Total	753,618	340,848	45.2	0.51	412,770	
Male-Male	395,572	190,004	48.0	0.73	205,568	
Female-Female	358,046	150,844	42.1	0.76	207,202	
2006						
Total	779,867	385,752	49.5	0.52	394,115	
Male-Male	417,044	217,617	52.2	0.72	199,427	
Female-Female	362,823	168,135	46.3	0.64	194,688	
2005						
Total	776,943	392,314	50.5	0.44	384,629	
Male-Male	413,095	214,477	51.9	0.69	198,618	
Female-Female	363,848	177,837	48.9	0.70	186,011	

Source: American Community Survey, 2005-2008. Total column as reported on the American Factfinder.

Note: Survey expanded to 3 million households beginning in 2005.

¹ Data tabulated after age, sex, relationship, and marital status items were edited.

² Includes people who reported a relationship of unmarried partner and a small number of cases randomly imputed via hot deck imputations.