American Housing 2014 Survey Field Test: Final Report

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Abstract

The American Housing Survey (AHS) is a survey of occupied and vacant housing units sponsored by the Department of Housing and Urban Development (HUD) and conducted by the US Census Bureau every two years. One module of the AHS consists of unit questions that collect an inventory of the number and types of rooms in respondents' homes. In 2014, the US Census Bureau conducted a split ballot field test on paper to assess how two different versions of questions performed that collected the inventory of rooms in respondents' homes, with the goal of selecting one of these sets of questions to field in the 2015 AHS.

During analysis, the count of rooms for a given housing unit that was collected from the survey questions was matched to the count of rooms from a tour of the respondent's home and to the count of rooms from administrative records. Additionally, behavior coding analysis was conducted to highlight any difficulties in administering either version of the unit questions. The results of the largely qualitative analysis of data from the field test follow, along with a recommendation regarding the best method to implement in the 2015 AHS.

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Introduction

The American Housing Survey (AHS) is a survey of occupied and vacant housing units sponsored by the Department of Housing and Urban Development (HUD) and conducted by the US Census Bureau. The survey was first administered in 1973 and has a longitudinal design, with the same housing units surveyed every two years. This longitudinal design allows the AHS to track housing and household changes over time, and the data are used to assess the quality of housing in the United States. The 2013 AHS had a sample size of 84,400 housing units and was conducted nationwide, along with a supplemental sample of select metropolitan areas. One module of the AHS consists of unit questions that collect an inventory of the number and types of rooms in respondents' homes. Room type is determined by the function for which the room was designed, rather than the usage to which respondents put the room (e.g., in the AHS, a den used as a bedroom should be classified as a den[1]).

In 2014, the US Census Bureau conducted a split ballot field test on paper to assess how two different versions of questions performed that collected the inventory of rooms in respondents' homes, with the goal of selecting one of these sets of questions to field in the 2015 AHS.

In an effort to improve the accuracy of the inventory of rooms in respondents' homes, this field test pretested 191 cases that collected this information using a "room-by-room" method ("How many bedrooms are there in your [house/apartment]? How many full bathrooms?" etc.), which is currently utilized by the AHS, as well as 201 cases that used a "floor-by-floor method" ("Starting on the top floor, tell me all of the rooms that are located on that floor," and "What rooms are located on the next floor down?" etc.), for a total sample size of 392 completed cases out of 1,000 sampled cases. The study design utilized a non-probabilistic, convenience sample that oversampled housing units for which it was expected to be more difficult to accurately count the inventory of rooms.

The field test consisted of a brief set of demographic questions common to both test and control versions to assist in analyzing the data, followed by the survey questions for either Method 1 (the control version with room-by-room questions) or Method 2 (the test version with floor-by-floor questions). Both the demographic questions and the survey questions were audio recorded to facilitate analysis of the results and behavior coding. After completing the survey questions, field representatives accompanied respondents on a tour of the respondent's home, with the intent of collecting a "true" count of the number and types of rooms in respondents' homes. Following the tour of the home, respondents were asked a few debriefing questions. Respondents who answered the survey questions and completed the tour of the home were given a $25 debit card to thank them for their time. During data entry, the keyers also looked up publicly available administrative tax records with information on the number of rooms in the housing units.

During analysis, the count of rooms for a given housing unit that was collected from the survey questions was matched to the count of rooms from the tour of the home and to the count of rooms

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[1] This discrepancy between respondents' perception of room types and the survey's definition of room types could result in bias within the data, such that respondents report having more bedrooms (and thus, seem to live in less crowded housing units) than would be officially recognized by HUD.

from the administrative records[2]. Additionally, behavior coding analysis was conducted to highlight any difficulties in administering either version of the unit questions by focusing on questions that the field representatives tended not to read as worded, or at which the respondents tended to request clarification. Field representatives were observed during the field test, and also participated in debriefing focus groups or filled out debriefing questionnaires to collect their feedback on both methods. The results of the largely qualitative analysis of data from the field test follow, along with a recommendation regarding the best method to implement in the 2015 AHS.

Importance of Accurate Room Inventory

Data on the number and types of rooms in housing units are utilized in measures of overcrowding as well as in indicators of housing quality, affordability, and fair market rents, and as such collecting accurate data is of central importance. HUD has observed that the number and types of rooms reported for a given housing unit often vary, with the number of bedrooms varying by as much as 18% from year to year (Eggers & Moumen, 2013). Additional longitudinal analysis conducted by the US Census Bureau's Center for Survey Measurement (CSM) reveals that the total number of rooms in a housing unit varies by around 52-56% from one administration of the AHS to another for the same housing unit. The split ballot field test is the core of HUD's efforts to improve the unit questions that capture the count of rooms utilized in many important measures of the US housing inventory.

History of Collecting Inventory of Rooms

Historically, the AHS has utilized the room-by-room method to collect the inventory of rooms in housing units. In this method, respondents are asked for the number of bedrooms, bathrooms, kitchens, etc., and then asked an open-ended question regarding whether there are any other rooms without any cues regarding additional room types. As a result, respondents answering these questions have to subtract types of rooms from a mental floor plan in the order that the field representative asks about them, and then have to evaluate the remaining areas in this mental floor plan to determine if they should report any other rooms in answer to the open-ended question. At this point, respondents may have lost track of which rooms have and have not yet been counted. This task resembles the "partial list cuing phenomenon," in which a non-exhaustive list of specific items hinders recall when respondents are subsequently presented with a non-specific "other" category without any recall cues (Belson and Duncan, 1962). Additionally, this method of reporting rooms is field representative-driven in that it focuses on categories of rooms listed by the field representative. A more respondent-driven method of asking these questions would tap into how respondents typically think about the rooms in their home (e.g. spatially), in order to reduce the cognitive burden for respondents (Von Thurn & Moore, 1996; Linde & Labov, 1975). Based in part on the recommendations of the US Census Bureau's Center for Survey Methods Research (CSMR) (Von Thurn & Moore, 1996), the room-by-room unit questions were replaced with more respondent-driven floor-by-floor questions in 1997, which was also the year when the US Census Bureau converted the paper AHS to a computer-assisted-personal-interview (CAPI) format. While the results of CSMR's study were promising, the implementation of the floor-by-

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[2] The only relevant room type available in the administrative records for this analysis was bedrooms, and as such, comparisons involving the administrative records were limited to bedrooms.

floor method in the questionnaire was problematic. Limitations for programming the floor-by-floor method using the CAPI technology at that time resulted in numerous answer categories for various room types that field representatives had to read and choose from in real time while the respondent listed each room. Additionally, 1997 was the first year that SAS was utilized for data analysis and the change to a floor-by-floor method resulted in extensive changes to the data edit programs. Because of the concerns regarding the ease of administration and data quality, some of which were the result of changes in the production environment rather than with the questions themselves, in 1999 the AHS reverted to the room-by-room method.

Concerns regarding the quality of data collected in the unit questions have persisted, while advances in the platform utilized by the US Census Bureau for CAPI programming have made the implementation of a floor-by-floor method more feasible than it was in 1997. The experiment conducted by the US Census Bureau in 2014 compared the room-by-room questions that were used in the 2013 AHS to an enhanced version of the floor-by-floor questions that built on the foundation of the research conducted in 1996 and the feedback received from the implementation of the 1997 AHS.

Field Test Methodology

The American Housing Survey split ballot field test consisted of several components for evaluation, including a paper questionnaire and audio recordings of the administration of the survey questions in order to enable behavior coding. Field representatives conducted tours of respondents' homes, and administrative records were subsequently collected as an additional measure of the accuracy of the two methods in counting the number and types of rooms in respondents' homes. The field test took place in the Duval County area of Jacksonville, Florida metropolitan area from July 23rd through September 17th of 2014.

Analysis of Longitudinal Data

CSM analyzed longitudinal AHS data from 1995-2001 to better understand the types of variations occurring in the count of rooms from one administration to the next. This analysis was necessary to inform the selection of sample for the split ballot field test as well as to better design the survey questions that would be tested against the questions currently utilized by the AHS.

The results of this analysis demonstrated that single family detached housing units tended to show a larger change between years in the total count of rooms than other types of housing units did, a difference that is likely related to the difference in average size between these housing unit types. For instance, between 1997 and 1999, about 50% of single family detached houses showed a change in the total number of rooms compared to 45% of single family attached, 33% of apartments, and 35% of mobile homes. When examining this trend based on home ownership (tenure) status, homes that were owned were more likely to show changes between years. However, home ownership also correlated with housing unit type such that owners were more likely to have larger units.

Sample Selection

The sample pool for the field test consisted of 1,000 housing units in the Duval County area of Jacksonville, Florida[3] that had English-speaking households who completed the AHS in 2013. The sample was stratified by size, such that 70% were single family, detached houses, while 30% were one unit buildings attached to one or more buildings (e.g., town houses) or buildings with two or more apartments. Single family, detached houses were oversampled compared to the other types of housing units as these units typically showed more discrepancies in room counts from year-to-year during analysis of the longitudinal data. When selecting 1,000 housing units from the 2013 sample, preference was given to those housing units that completed the 2013 AHS in the fewest number of attempts.

Analysis of the longitudinal data indicated that the sample could have been stratified either by housing unit type or by number of rooms in order to oversample housing units for which it was anticipated to be more difficult to collect an accurate count of rooms. Housing unit type and number of rooms tended to correlate, such that single family detached houses tended to have more rooms than one unit buildings attached to one or more buildings or buildings with two or more apartments. The final determination to use housing unit type rather than total count of rooms to stratify the sample was based on the understanding that concerns about the data quality for the total count of rooms were the impetus for conducting the field test.

While the total sample pool consisted of 1,000 cases, the initial goal for the field test was to obtain 150 completed cases per method (see Appendix A for summary of final dispositions for 1,000 sampled housing units). Additional cases were sampled in anticipation of respondents' refusing to participate or housing units being ineligible due to changes in household composition since the 2013 administration of the AHS (i.e., vacant units, non-English-speaking households, etc.). The goal of 300 cases was established after reviewing a similar study in 1996 that had 122 usable cases (60 in one treatment and 62 in another) (Von Thurn & Moore, 1996). When consulting with one of the authors of that study, we learned that 122 cases was a smaller sample than would have been ideal for detecting differences between the two treatments. After hypothesizing that 300 cases would be a better sample size, we ran a power analysis to determine to what extent we could do a quantitative assessment of our results. Based on that analysis, we determined that we could detect a difference of +/-14% when comparing the count of rooms collected in the survey to the count in the tour of the home across the two methods using a reference proportion of 0.5 and sample size of 150 cases per treatment with a power of 0.8 and an alpha of 0.10. We anticipated that if the difference between the accuracy of the two methods was large enough, a sample size of 300 should have allowed for statistical analysis of the results.

However, there were issues administering the interviews as intended. Some cases that were collected during the field test were not usable, and as a result, 92 additional completed cases were collected in order to offset the shortfall of usable cases. In the end, there were 191 Method 1 and

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[3] The Atlanta Regional Office volunteered to host the field test from this location, and requested that the sample be located in Duval County.

201 Method 2 cases completed, of which 87 Method 1 and 74 Method 2 cases were deemed usable for analysis purposes[4] (see the Behavior Coding section for further details regarding usable cases). Thus, our sample size was significantly decreased from the anticipated sample size, which limits our ability to draw statistical conclusions without large differences (see Table 1). As a result, our analysis is focused on qualitative trends observable in the data.

Table 1. Usable Cases by Unit Type

	Method 1			Method 2		
	Targeted Number of Completes[5]	Total Completes	Usable Completes	Targeted Number of Completes	Total Completes	Usable Completes
Single family detached	105	132	60	105	140	51
Single unit attached/unit in building with two or more apartments	45	59	27	45	61	23
Total	150	191	87	150	201	74

Questionnaire Design

The American Housing Survey 2014 Field Test consisted of two questionnaires, Method 1, a room-by-room version, and Method 2, a floor-by-floor version. Both questionnaires were administered in paper form. The paper questionnaires consisted of a control card with sample information, a consent form, the survey, and a voucher form to record that the incentive was received by the respondent.

The paper questionnaire consisted of multiple sections, including a series of demographic questions about the members of the household, with more detailed demographic questions asked only of the respondent. Demographic questions were identical across both methods of the questionnaire. The second section of the survey, the rooms inventory or "unit" questions, varied by method. The third and fourth sections, consisting of the tour of the home and the debriefing questions, were also identical across both methods. See Appendix B and Appendix C for the full versions of the questionnaires.

Control Card

Paper control cards (see Appendix D) based on the Contact History Instrument (CHI) used in CAPI surveys were designed in order to manage the sample, as the abbreviated time frame for conducting the study did not allow enough time to have the survey programmed in CAPI. The front of the control card included the previous respondent's name and phone number from the 2013

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[4] There were 13 partially completed cases. Of these 13 partial completes, two Method 1 cases were deemed usable for analysis purposes.

[5] For the purposes of this field test, a complete was considered to be a survey interview along with a tour of the home for an occupied housing unit.

administration of the AHS[6], as well as the address and whether the housing unit was a '1 unit detached' or a '1 unit attached/2+ unit'.

Consent Form

Respondents signed a consent form granting their permission for the interview to be audio recorded (see Appendix E) so that CSM staff could perform behavior coding of the interviews. The consent form is the standard form used by CSM for recording interviews. The respondent did not have to consent to being audio recorded in order to participate in the field test.

Method 1

Method 1 (see Appendix B) of this field test was based on the version of the unit questions used in the 2013 American Housing Survey, and functioned as the "control" version of the rooms inventory questions. The 2013 AHS was administered in CAPI, so the questions had to be adapted for paper administration. As a result, the skip patterns and fills were difficult to navigate for some field representatives, which differs from administering this method in a production environment. Method 1 is referred to as the "room-by-room" method because it asks the respondents to think about their entire home and give a number for each type of room as the field representative asks for specific room types.

Questions 14 through 19 of the survey asked about six different room types: bedrooms, full bathrooms, half bathrooms, kitchens, separate dining rooms, and living rooms (see Figure 1).

GRID 1

14. How many bedrooms are there in your [house / apartment]?	15. How many full bathrooms?	16. How many half bathrooms?	17. How many kitchens?	18. How many SEPARATE dining rooms? [IF YES READ: A separate dining room is one that's separated from other rooms by archways or walls extending at least six inches. Is this what you mean by a separate dining room?]	19. How many living rooms?
_____	_____	_____	_____	_____	_____

Figure 1. Method 1 Unit Questions 14-19

After answering questions 14-19, and if the housing unit was not an efficiency apartment, the respondent was asked question 21, "Besides all of these rooms, are there any OTHER rooms in this home?" If the respondent said 'yes' to this question, they were then asked to specify what types of other rooms they had, and then to report how many of those room types they had. The categories of other rooms included family room/great room/TV room, recreation room,

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[6] Note that it was not necessary that field representatives conduct the interview with the same respondent who completed the survey in 2013. Rather, this information was provided for informational purposes to the field representative.

den/library, laundry room/utility room/pantry room, other finished room, and/or other unfinished room, as shown in Figure 2.

21. *[IF NOT A STUDIO, ASK:]* **Besides all of these rooms, are there any OTHER rooms in this home?**	
1. ☐ Yes	3. ☐ Dk → *SKIP TO Q28*
2. ☐ No → *SKIP TO Q28*	4. ☐ Ref → *SKIP TO Q28*

21a. **What are they?**	
[INTERVIEWER: DO NOT COUNT THE SAME ROOM MORE THAN ONCE. DO NOT COUNT GARAGES, HALLWAYS, CLOSETS, OR PORCHES AS ROOMS.]	
1. ☐ Family rooms/Great rooms/TV rooms	5. ☐ Other Finished Rooms
2. ☐ Recreation rooms	6. ☐ Other Unfinished Rooms
3. ☐ Dens/Libraries	7. ☐ Dk
4. ☐ Laundry/Utility/Pantries	8. ☐ Ref

[INTERVIEWER: FOR ANY ROOMS REPORTED AT Q21a, ASK RELEVANT QUESTION Q22-Q27. DO NOT COUNT THE SAME ROOM MORE THAN ONCE. DO NOT COUNT GARAGES, HALLWAYS, CLOSETS, OR PORCHES AS ROOMS.]

GRID 2

How many…

22. **Family rooms, great rooms, or TV rooms?**	23.**Recreation rooms?**	24. **Dens or libraries?**	25. **Laundry, utility, or pantry rooms?**	26.**Other FINISHED rooms?**	27. **Other UNFINISHED rooms?**
____	____	____	____	____	____
☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref

Figure 2. Method 1 Unit Questions 21-27

If the room did not fit into any of the stated categories, the field representative was allowed to probe in order to determine if a room type was a 'finished' or an 'unfinished' room. For example, when the field representative asked question 21, if the respondent said 'yes' and reported that he had a laundry room, a den, and a craft room, the field representative would only ask questions 24 and 25 as worded, probe to determine that the craft room was a finished room, ask question 26, and then move on.

Question 28 (seen in Figure 3) was a verification question, where the field representative confirmed if the room count the field representative had recorded was accurate.

28. **I have listed** [IF STUDIO READ: a one room efficiency or studio apartment, with] [INTERVIEWER: READ NUMBER OF ROOMS FROM GRID 1 and GRID 2]. **Are there any other rooms** [IF Q12 = 1 READ: **in the basement or elsewhere in your home**]?	
[IF NEEDED: Have I mis-recorded the number of any rooms?]	
1. ☐ Yes → **What is inaccurate?** → *MAKE CORRECTIONS IN GRID 1 AND GRID 2. THEN CONTINUE TO Q29*	3. ☐ Dk → *CONTINUE TO Q29*
2. ☐ No → *CONTINUE TO Q29*	4. ☐ Ref → *CONTINUE TO Q29*

Figure 3. Method 1 Unit Question 28

The field representative was supposed to read the tally as the number and room type, and not the total of all the rooms the respondent had reported (e.g. "one bedroom, one full bathroom, one kitchen, one living room," would be correct, but "four rooms," would not be).[7]

Method 2

Method 2 (see Appendix C) was based on the findings from the 1996 field test and cognitive testing conducted by CSMR. This method is referred to as the "floor-by-floor" method because it asked respondents to think of one floor specifically and list all of the rooms on that floor as they think of them before reporting about another floor. Method 2 provides data users with information about the floor that each room was located on within a given housing unit, which is not collected in a Method 1 questionnaire. This additional information may be advantageous for data users who need to filter out basement rooms from their analysis.

While instruction differed depending on whether the unit was multi-level or not, the field representative generally asked the respondent to tell them all of the rooms on a particular floor, and kept a tally of the rooms that the respondent mentioned in a grid that listed many different room types. This grid was similar to the grids found in Method 1 but combined into one large grid, and then split up by floor. The field representative was not supposed to probe about every room type listed on the grid.

The grid at question 14a, shown in Figure 4, had 12 room types down the left side: bedroom, full bathroom, half bathroom, kitchen, dining room, living room, family room/great room/tv room, recreation room, den/office/study, laundry/utility/pantry, as well as space for other finished or unfinished rooms that did not fit into the other categories. The grid had space to record the room tally for up to five floors, starting with the "top floor" and ending with the "basement." These 12 types of rooms were selected based on the response options that are currently utilized for the unit questions that collect the inventory of rooms in the AHS, with one modification. The room type referred to as "dens/libraries" in the 2013 AHS was renamed "den/office/study" in the Method 2

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[7] While the Method 1 unit questions were designed to resemble the 2013 administration of the AHS in CAPI as closely as possible, one question had a slightly different interviewer instruction in 2014 than in 2013 – the question that asks the respondent how many separate dining rooms they have (question 18 in the 2014 field test). In the 2013 American Housing Survey, this question read "How many SEPARATE dining rooms?" and had additional text that the field representative could read at their discretion, "A separate dining room is one that's separated from other rooms by archways or walls extending at least six inches. Is this what you mean by a separate dining room?" If respondents reported having a separate dining room, a soft edit screen popped-up asking field representatives to verify with the respondent that the separate dining room met the AHS definition. However, the programming did not force field representatives to go back and correct the answer to this question if the respondent reported that the dining room was not separate. In order to adapt this format for a paper questionnaire, the definition was read if the respondent reported that they had one or more separate dining rooms. While conducting behavior coding analysis, it was observed that some field representatives read the text before the respondent had answered, while others did not read the additional text at all, even when the respondent reported having a separate dining room. As a result, we think comparisons between the 2013 responses to this question and the responses to this question in the Method 1 questionnaire from the 2014 field test are still valid, as field representative seemed to treat the text similarly to the text read at the interviewer's discretion and the soft edit in the 2013 AHS.

questionnaire, based on the hypothesis that respondents more commonly name a room an "office" or a "study" than a "library." Note that the phrasing for the dens item is read aloud in Method 1 only if respondents report having additional rooms and state that the additional room is a den, and is never read aloud in Method 2. As such, we believe this slight wording difference does not confound comparisons between the two methods.

14a. The next few questions are about the number and kinds of rooms in your [house / apartment].

IF MULTI-FLOOR HOME: You reported that this [house / apartment] has [Q13] floors, so starting with the top floor, tell me all the rooms that are located on that floor. It may help if you try to picture yourself walking from room to room on that floor.

IF SINGLE-FLOOR HOME OR APARTMENT: Tell me all the rooms in your [house / apartment]. It may help if you try to picture yourself walking from room to room.

[INTERVIEWER: ASK FULL OR HALF BATHS, IF NECESSARY.]

Grid 1

Room Type	Top Floor	Floor	Floor	Floor	Basement	Total
Bedroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Full bathroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Half Bathroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Kitchen	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Dining room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Living room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Family Room/Great Room/TV Room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Recreation Room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Den/Office/Study	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Laundry/Utility/Pantry	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Other FINISHED room (specify)	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Other UNFINISHED room (specify)	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	

Figure 4. Method 2 Unit Questions Grid

Question 14b (see Figure 5) was the verification question, and its purpose was similar to that of the verification question in Method 1. The wording was modified to reflect that the tally was about the specific floor only, and to mention that there would be another tally taken for any other floors in the home.

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14b. [IF MORE THAN ONE FLOOR IN HOME READ: Before moving down to another floor,] I want to make sure I have recorded your answers correctly. I have listed [READ TALLY OF EACH TYPE OF ROOM IN FLOOR X/BASEMENT]. Are there any other rooms on that floor?	
1. ☐ Yes *(FR ASK: "What are they?" "How many?" (CORRECT Floor X))*	3. ☐ Dk → CONTINUE
2. ☐ No → CONTINUE	4. ☐ Ref → CONTINUE

IF ONLY ONE FLOOR IN HOME, TALLY TOTAL NUMBER OF ROOMS AND SKIP TO Q16. IF MORE THAN ONE FLOOR IN HOME ASK:

15. What rooms are located on the next floor down? [IF NEEDED: Again, it may help if you picture yourself walking from room to room ON THAT FLOOR.]

INTERVIEWER INSTRUCTION:
1. *RECORD ALL ROOMS ON NEXT FLOOR DOWN IN SECOND COLUMN OF TABLE.*
2. *REPEAT QUESTIONS 14b AND 15 FOR EVERY FLOOR IN THE HOME.*
3. *TALLY TOTAL NUMBER OF BEDROOMS AND DINING ROOMS FROM EACH FLOOR.*
4. *CONTINUE TO Q16.*

Figure 5. Method 2 Unit Questions 14b - 15

In a multi-story home, the field representative was supposed to ask question 14a (collecting the room tally) for the topmost floor of the home and record the rooms in Grid 1, then ask question 14b (verifying the rooms on that floor), then read question 15 to the respondent (asking about the next floor down), and then record the respondent's answers in Grid 1 for the next floor down. The cycle repeated until all floors had been accounted for (asking about rooms on next floor down at question 15, recording rooms in grid, verifying at question 14b). In one story housing units, the grid at question 14b was only filled out once and question 15 was never asked.

Due to space constraints in the paper questionnaire, the verification question (question 14b) and the text for subsequent floors in multi-story housing units (question 15) would not fit on the same page as the grid. This made following the skip patterns in this series of questions particularly challenging for field representatives, but if this method were implemented in the 2015 AHS, this issue would be resolved by CAPI programming.

Tour of the Home

The tour of the home took place after the respondent finished the survey questions, and was done in order to determine the number and types of rooms according to the AHS's definitions of room types. There was space for up to 20 rooms in a home, with six items per room (see Figure 7) that contained questions where field representatives were supposed to record information about the room:
- The first item was the "Respondent room type" item, which was the place to record the name that the respondent used to refer to the room.
- The second item was the "Floor" item, which recorded on which floor the room was located. The field representative could record if the room was on floor 1, floor 2, floor 3, floor 4, or the basement.
- The third item was "HUD definition match," where the field representative could mark if the room type the respondent provided matched the AHS's definition for that room type. In addition to having a "yes" or "no" response, that item also had a "couldn't evaluate" option that field representatives could check if the respondent did not allow them access to the room, and thus they could not determine if it matched the AHS's definition for room type.
- The fourth item asked whether the windows in the room were adequately sized. The answer to this question provided information on whether the room had a window that an average

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adult could use to escape in case of fire, which was required for the room to be considered a bedroom according to the AHS, although this information was collected for every type of room.

- The fifth item asked if the room had a door in order to determine if the room meets the AHS's requirements for a bedroom, which included the capacity to have privacy.
- The sixth and final item was the "HUD Alternative" item, where the field representative could record information regarding how the room should have been labeled according to the AHS's definitions. This item would only be used if "HUD definition match" was marked "no." In this item, the "not a room" option could be selected if a respondent reported a room, but it did not meet the requirements for a separate room. For example, if the respondent reported a dining room, but the dining room did not meet the AHS's requirements for being separate, then the field representative would mark "Not a room" and it would be considered part of the larger room to which it was connected.

In most cases, the name a respondent assigned to a room would meet the AHS's definition, but there were common exceptions:

Separate dining rooms. Some respondents felt they had a separate dining room when their dining room did not meet the AHS's requirements to be considered "separate." For instance, they might have one large "great room" that they used as a combination living room and dining area. In these cases, the field representative was instructed to record both the living room and the dining room as mentioned by the respondent. However, the dining room was marked as not matching the AHS's definition, and under the "HUD Alternative" column, the field representative then checked that this was "not a room" according to the AHS. A scenario like this occurred 12 times for usable cases.

Room usage (commonly offices). Some respondents reported rooms according to their usage, rather than the function for which they were designed. If a bedroom was being used as an office, they reported having an office rather than having a bedroom on the tour of the home. Field representatives were instructed in such cases to record the respondent's answer as office, but the room would be marked as not matching the AHS's definition, and under "HUD Alternative," the field representative would mark "bedroom." See further discussion below regarding the prevalence of this mismatch.

Bedrooms. Some respondents reported a room was a bedroom if it was used as a bedroom, but it did not meet the AHS's requirements as having been designed to be a bedroom, possessing a window of adequate size for a normally sized adult to use as a fire egress, with a door that could provide privacy, and that opened onto a hallway or main living area. In such cases, the field representative recorded the respondent's answer as bedroom, but the room would be marked as not matching the AHS's definition, and under "HUD Alternative," the field representative was instructed to mark the type of room they thought it was designed to be (in some cases a den or office), and if this was not clear, to mark "other finished" or "other unfinished room." This type of mismatch occurred 8 times in usable interviews.

Inconsistencies in Counting Floors between Method 2 Survey Questions and Tour of the Home in Both Methods

It was difficult to develop a grid that field representatives could use in the Method 2 paper questionnaire that would record housing units with varying numbers of floors. The grid that was finally implemented had a column labeled "top floor," three columns with a blank line where the field representative was supposed to record the relevant floor number if these columns were utilized, and a column labeled "basement" (see Figure 6). These columns were arranged with the top floor on the left and the basement on the far right, since respondents were instructed to name the rooms in their house by beginning with the top floor to ensure no floors were inadvertently skipped. (Field representatives were told to record respondents' answers in the first column, the "top floor" column, if the housing unit only had one floor. If the respondent's home was a split level, they were to record their answers regarding the top floor in the "top floor" column and their answers regarding the lower level in the "basement" column.)

Grid 1

Room Type	Top Floor	Floor __	Floor __	Floor __	Basement	Total
Bedroom	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	

Figure 6. Method 2 Unit Questions Grid

Having the floors proceed downward from left to right seemed the most efficient method of organization. However, without knowing the exact number of floors in the home, there was no way to know how many columns were needed after "top floor." In a CAPI instrument, the grid could have been optimized to display only the relevant floors, but on paper, this was not possible. Two examples illustrate the difficulty:

- In a three story home, the field representative would have used the "top floor" column, then the next column over labeled as "1" for the ground floor, and then the basement column. The two columns directly preceding "basement" would have been blank.
- In a four story home, the field representative would have used the "top floor" column, then the next column over labeled as "2," then the next column over labeled as "1" for the ground floor, and then the basement column. The column directly preceding "basement" would have been blank.

	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R1	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

Figure 7. Tour of the Home

In both of the above scenarios, the column next to "top floor" served a different function. In one scenario, it was the ground floor and in another, it was the floor directly above the ground floor. This was understandably confusing for the field representatives.

It was also difficult to reconcile the manner of recording floors on the grid that field representatives used in the Method 2 questionnaire with the tour of the home, which was a component of administering the field test in both methods. The tour of the home was not necessarily conducted starting on the top floor, although if the respondent needed prompting there was text on the questionnaire to suggest starting the tour that way, and it was left to the respondent's discretion how to begin. It was anticipated that most respondents would begin in their living room rather than on the top floor, as most interviews were probably conducted on the ground floor. As a result of this difference in administration, field representatives were provided with check boxes for up to four floors and a basement, with no floor labeled "top floor" (see Figure 8 below).

Figure 8. Tour of the Home Floor Question

Two similar scenarios to those described above illustrate how this is different from recording floors in the Method 2 unit questions:

- In a three story home, the field representative would have used the "2" check box for rooms on the top floor, then the "1" check box for rooms on the ground floor, and then the "basement" check box for rooms in the basement.
- In a four story home, the field representative would have used the "3" check box for rooms on the highest level, then the "2" check box for rooms on the level directly above the ground floor, then the "1" check box for rooms on the ground floor, and then the "basement" check box for rooms in the basement.

While the floor columns in the Method 2 unit questions were designed to emphasize beginning on the top floor, in retrospect keeping the two methods of recording floors consistent would have been preferable.

Letters

Advance letters were sent to households in the sample two weeks prior to the start of the field test (See Appendix F.) Refusal conversion letters were also available to help field representatives complete cases (see Appendix G).

Incentives

Due to the intrusive nature of the study, the US Census Bureau was authorized to offer an incentive of $25, in the form of a Visa debit card. In order to receive the incentive, the respondent had to

complete the survey questions, the tour of the home, and the debriefing questions; they did not have to consent to being audio recorded. In order to keep track of the debit cards that were distributed, respondents had to sign a voucher form stating that they had received their incentive after completing the field test (see Appendix H).

Field Representatives

The field representatives were an integral component of the 2014 AHS split ballot field test.

Characteristics

A total of twenty field representatives were trained for the field test, ten of whom were currently employed by the US Census Bureau and ten of whom were hired temporarily for the duration of the experiment. Nine of the ten field representatives who were hired temporarily for the field test had previous experience working for the US Census Bureau during the administration of other surveys. A subset of the twenty field representatives had worked on a previous administration of the AHS in particular.

Training

All field representatives received a self-study to prepare them for the field test in advance of the in-person training. The field representatives who were hired temporarily for the field test received one day of general training on employment with the US Census Bureau that covered topics such as pay roll, confidentiality, and overcoming reluctance on July 21st, 2014. All twenty field representatives received an additional one and half days of training on July 22nd and 23rd specific to the field test that covered such topics as:
- the purpose of the field test
- navigating the paper control card for sample management
- administering the consent form
- utilizing the tape recorders to audio record interviews
- administering the survey questions
- conducting the tour of the home
- administering the voucher form and paying respondents for their participation

Questionnaire training included question-by-question guidance, observations of practice interviews conducted by the trainers, discussion of problematic situations, as well as paired practice of doorstep introductions and administering the surveys.
On July 29th, 2014, the field representatives participated in a conference call to address problematic behaviors that were observed during the field observations.

Duration of Participation on Project

While twenty field representatives were initially trained to conduct the field test, only four field representatives remained on the project for the entire duration of the field period. Four field representatives were removed from the project shortly after fielding the survey, and by August 26th an additional twelve field representatives were removed from the study due to performance issues.

Field representatives completed between five and 44 cases, depending on how long they worked on the field test (see Table 2). This reduction in the number of field representatives resulted in some field representatives completing substantially more cases than other, which may have amplified interviewer effects.

Table 2. Distribution of Completed Cases by Field Representative
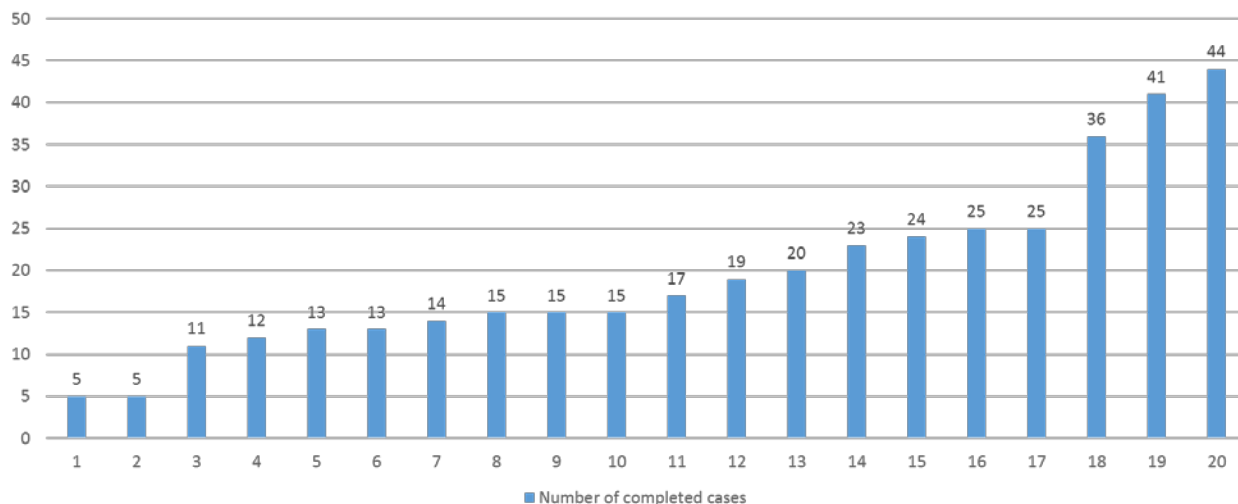
Since the field test was conducted on paper, there was a lag between the completion of a case and receiving the case at the US Census Bureau's headquarters. Paper questionnaires along with any audio tapes were first returned by field representatives to the field supervisors during a weekly meeting, then delivered in weekly shipment to the Atlanta regional office, before being forwarded on to headquarters. At headquarters, CSM staff listened to any audio recordings to determine whether completed cases were usable. (Details on the determination of usability follow in the Behavior Coding section of this report.)

Since the turnaround time between completing a case and receiving the case at US Census Bureau's headquarters in Suitland involved a minimum of three weeks, the determination of which field representatives to retain for the remainder of the field period was based on the snapshot of usable cases for each field representative that was available when the decision was made. Only field representatives with 100% usable cases at that moment in time were allowed to continue working on the study, but some field representatives had very few cases upon which to base this decision.

Observations

All temporarily hired field representatives were observed by a field supervisor, staff from the Atlanta regional office, or staff from the US Census Bureau's headquarters before being allowed to conduct interviews while unsupervised. All permanent field representatives were allowed to conduct interviews before being observed, but had to be observed at least once by project staff during the first week of the field period.

Debriefing Focus Groups

A trained focus group moderator conducted a one-hour focus group with the four field representatives who worked on the study for the entire duration of the field period to capture their feedback regarding the two methods. Analysis of the information gathered during the focus group follows in the Debriefing Data Analysis section of this report.

Debriefing Questionnaires

A debriefing questionnaire (see Appendix I) was mailed to those field representatives who did not work on the AHS field test for the entire field period. Field representatives who completed the questionnaire were compensated for their time as an incentive to complete the questionnaire. Ultimately, six of the 16 field representatives completed and returned their debriefing questionnaire.

The two field supervisors on the project were also mailed debriefing questionnaires (see Appendix J), and one chose to complete and return the questionnaire. Analysis of the information gathered in the field representative and field supervisor debriefing questionnaires follows in the Debriefing Data Analysis section of this report.

Reducing Contact Attempts

The sample for the survey was managed on paper, and field representatives conducted personal visits at respondents' homes to complete the survey. If the field representatives were unable to make contact with the household via a few personal visits, they were instructed to try calling the households in order to schedule a convenient time to complete the survey. Initially, each case received a maximum of seven contact attempts (including both personal visits as well as up to two phone calls).

As a result of concerns about the number of usable cases, on September 3rd, the maximum number of contact attempts for each case was lowered to three total attempts, with up to one of those attempts being a phone call, in an effort to obtain the most completes in the time remaining for the field period. By reducing the effort on previously contacted cases, field representatives were able to put more effort toward uncontacted cases that were more likely to yield a complete interview in the remaining time.

Data Entry of Questionnaires

In order to capture the respondents' answers from the paper questionnaires, a data entry database was created with forms similar in appearance to the paper questionnaires. The data was keyed by six keyers who were trained individually on the data entry application, and each record was reviewed by one of two adjudicators (see Data Entry Quality Control below).

Public Records

As an additional measure of accuracy, information from public records on the number of rooms in the housing unit was included in the field test dataset. After entering the questionnaire responses, the data entry keyers searched public records online from the Jacksonville County property appraiser's office; specifically, a searchable database of housing units in Jacksonville County (found at www.coj.net). The Jacksonville housing units database included information on (1) the property type (single family home versus multi-unit building), (2) the number of stories in the housing unit, and (3) the number of bedrooms and bathrooms in the unit.

The data entry staff completed the public records search for all of the completed and partial interviews from the field test. Due to time constraints on the data keying process, public records were keyed for only a subset of the non-completed cases.

Aside from the limited scope of room types available in these public records, these data had other noteworthy limitations:
- In the case of 31 completed or partial interviews, no matching tax records were found. These cases were most likely missing public records due to address mismatches, as the Jacksonville County property appraiser's website required an exact match in order to return a record. We speculate that missing directions (e.g. "7th St" as opposed to "7th St North") may have contributed to the difficulty in finding public records for these 31 cases. In other cases, public records for multi-unit housing were available for one particular unit but not for the housing unit that participated in the field test.
- For an additional 13 cases, only partial records were found (e.g. missing the number of bedrooms, bathrooms, floors, or the property type), or the public records were clearly inaccurate (e.g. reporting that the housing unit had 99 bedrooms or 324 bathrooms or was a business). It is unclear why the public records for these cases were incomplete or inaccurate.
- For multi-unit housing, the data in the public records may have been the average number of bedrooms and bathrooms across all units in the complex, rather than the number of rooms for the specific unit in question.
- Finally, these data may have been out of date for some housing units, possibly not reflecting any changes made to the property that may affect the number of rooms.

Data Entry Quality Control

All survey data was double keyed by two separate keyers. A SAS program was created to compare the data from each keyer and flag any discrepancies. An adjudicator then compared each entry to the original paper questionnaire and public records to determine which entry was accurate. Discrepancies were corrected, and one clean record was then flagged for use in the final dataset.

It should be noted that for the public records in particular, there were often mismatches in which one keyer reported that there were no public records available for an address and another keyer had entered in public records for that case. Sometimes an address found at the Jacksonville County property appraiser's website for the case was an approximate match to the address of the housing unit in the field test, and the adjudicator was able to determine whether the slightly modified

address was in scope by conducting internet searches of Jacksonville County maps. When the adjudicator was in doubt as to whether the two addresses were the same, the public records were excluded from analysis and the case was recorded as having no matching public records.

Behavior Coding

Using the audio recordings from the respondent interviews, three staff behavior coded all of the usable cases (163 total: 89 Method 1 and 74 Method 2 cases[8]) to analyze the respondent and field representative interactions

Behavior coding can help identify problematic questions, that is, questions that the field representatives tend not to read as worded, or those for which the respondents tend to request clarification. In the case of this field test, behavior coding can highlight whether one method is more difficult to administer than another is from the field representative's perspective. The behavior coding was limited to the unit questions in the questionnaires (questions 12-31a in Method 1 and questions 12-21a in Method 2).

The behavior coders were given a training manual detailing the specific instructions for categorizing and coding a behavior as well as a codebook of possible codes for each variable (see Appendix K). In addition, the behavior coders met as a group with the trainer to practice coding several cases that were selected by the trainer to demonstrate various aspects of the coding task. Behavior coders continued to meet over the next few weeks to discuss how certain types of behaviors were being coded to ensure uniform coding across coders.

To test how consistently the coders were applying the behavior codes, we calculated a Kappa statistic to measure the inter-coder reliability[9]. The Kappa statistic provides a conservative measure of agreement among coders in their application of behavior codes, because it accounts for the possibility of agreement by chance (Fleiss, 1981). According to Fleiss, Kappa scores greater than 0.75 indicate an excellent level of agreement across coders, while scores ranging from 0.40 to 0.75 indicate a good to fair level of agreement; scores below 0.40 represent poor agreement (Fleiss, 1981). Overall, Method 1 produced a kappa of 0.91 and Method 2 produced a kappa of 0.89, both indicating an excellent level of agreement in how the coders were applying the codes (see Table 3 below). This overall measure was produced by looking at how coders applied codes to the field representatives' first conversational turn (i.e., when they initially read the question), the respondent's initial response, and the respondent's final response.

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[8] While there were 87 usable Method 1 and 74 usable Method 2 completed cases, there were 2 usable partial Method 1 cases. These cases were included in both the analysis of the behavior coding results as well as the analysis of the data from the questionnaire.

[9] To determine the inter-coder reliability score, a subset of the cases (n=33, or 20%) were double coded by a second coder. Sixteen of the double coded cases were Method 1, and 17 of the cases were Method 2.

Table 3. Inter-coder Reliability Scores

	FR First Interaction	Respondent First Interaction	Respondent Final Interaction	Overall
Method 1	0.91	0.91	0.92	0.91
Method 2	0.92	0.81	0.90	0.89

The goal of behavior coding analysis was to investigate the relative merits of each of the two methods, and more specifically:

(1) To identify questions that were problematic for the interviewer to administer, and/or to suggest alternative wording, as evidenced by field representatives:
- o   Asking the respondent to slow down
- o   Displaying negative affect
- o   Making major changes to a question
- o   Missing a room the respondent mentioned or adding a room the respondent did not mention

(2) To identify questions that were problematic for the respondent to answer, and/or to suggest alternative wording, as evidenced by respondents:
- o   Asking the field representative for clarification
- o   Interrupting (breaking-in) the field representative
- o   Giving uncodeable responses (i.e., responses that do not map onto available answer categories)
- o   Displaying negative affect
- o   Adding a room not previously mentioned or removing a room that was previously mentioned

Understanding whether interviewers had difficulty administering certain questions, and whether respondents had difficulty answering certain questions, helped to interpret each method's performance. This information provides explanations for why the data quality at a particular question may have been poor, as evidenced by a mismatch in room count between the survey questions and the tour of the home, and provides insight into whether one method was more difficult to administer than another was from a field representative's perspective.

For purposes of the analysis, we removed those tapes that were behavior coded by an additional coder in order to calculate interrater reliability, with only the first instance of behavior coding retained. This produced a total of 89 usable (see following section titled Usable Cases) Method 1 and 74 usable Method 2 cases (including both completed and partial interviews). We have not focused on instances of field representatives administering incorrect fills during the behavior coding analysis, as this problem will be ameliorated when the questionnaire is programmed in CAPI.

Usable Cases

Preliminary analysis of the audio tapes indicated that some field representatives were not administering the questions as written and that these variations could negatively affect accurate

recording of the number of rooms in the housing unit. Cases in which field representatives did not follow the study protocol were excluded from analysis in order to isolate the effects of variation in question wording and format between Method 1 and Method 2. The prevalence of these unusable cases led to a reduction in the number of field representatives (i.e., those who were responsible for the unusable cases), and also led researchers to exclude from the analysis interviews 54 cases that were not audio taped because usability could not be determined for those cases.

All audio recorded interviews were reviewed to determine whether a case qualified as "usable[10]." To be considered usable, critical aspects of the survey needed to be administered in an acceptable manner. Cases were deemed not usable if any of the following scenarios occurred:

- Method 1 - Field representatives failed to ask any of the questions designed to record the number of bedrooms, full and half bathrooms, kitchens, separate dining rooms, and living rooms (i.e. the field representative skipped a question in questions 14-19) (see Figure 1)
- Method 1 - Field representative incorrectly administered questions 22-27 by asking how many of a specific other type of room a respondent had (e.g. family rooms or recreation rooms) when the respondent did not previously indicate that they had that type of other room in question 21 or question 21a, and it resulted in the respondent reporting a room they would otherwise not have included (See Figure 2)
- Method 2 – Field representative administered the room-by-room method instead of the floor-by-floor method; this occurred when the field representative read the rooms from the grid and probed for each room type (See Figure 4)
- Both Methods – Field representative skipped or incorrectly administered the room count verification question (Method 1, question 28 and Method 2, question 14b; See Figures 3 and 5, respectively); this included reading back the total number of rooms listed rather than the number and types of each room, thereby failing to give the respondent the opportunity to correct any missing room types; and
- Both Methods – Field representative neglected to record a valid room type listed by the respondent, and this discrepancy persisted even after the verification question.

Cases were still considered "usable" despite the following field representative behavior that was inappropriate:

- Method 1 – Field representative did not confirm whether any dining rooms were "separate."
- Method 2 – Field representative gathered the room count for all floors before verifying the room count for each floor. The correct method was to gather the room count for a floor and then verify the count for that floor before moving on to the next floor in the home.
- Both Methods – If the field representative correctly administered the room count verification question (Method 1, question 28 and Method 2, question 14b; See Figures 3 and 5, respectively) but neglected to read the last sentence (i.e., "Are there any other rooms…?"), the case was considered usable if the rooms were correctly listed off by the field representative. It was understood that the field representative was implicitly asking whether the tally was correct.

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[10] One case was excluded from analysis based on information found in the public records, which indicated that the building was being used as a public daycare center.

Tapes were flagged as either usable or unusable, which allowed usable and unusable cases to be easily separated during the data analysis, while still permitting comparisons between the two groups. Cases deemed unusable were not behavior coded due to time constraints.

Results

Due to small sample sizes, the results presented below are not statistically significant unless otherwise indicated with a footnote[11]. Results discussed are often separated by very few percentage points, and as such, it is more appropriate to discuss trends in the data.

Questionnaire Analysis

The goal of our analysis was to determine which method most accurately collected the number of rooms in the housing unit. Unless otherwise specified, the analysis presented below was limited to usable cases (see Table 18 in Appendix L for complete analysis of cases by usability). For additional information on the criteria that a case had to meet in order to be considered usable, see the Behavior Coding section of the report.

While comparisons regarding the total number of rooms are of primary interest in determining the relative accuracy of the two methods, additional analysis at the bedroom and dining room level was conducted. Comparisons of bedroom counts were important because bedrooms are a key measure of overcrowding. Comparisons for dining rooms were included because the results of the behavior coding indicated that respondents and field representatives often had particular difficulty accurately counting dining rooms according to the AHS's definition of a separate dining room ("separated from other rooms by archways or walls extending at least six inches"). Total rooms were calculated as the sum of bedrooms, kitchens, living rooms, dining rooms, family rooms, recreation rooms, dens and other finished rooms.

The count of rooms from the survey questions for each method was compared to data from each of the following sources (see the overview in Table 4 below):
1. The 2013 AHS
2. The tour of the home
3. Debriefing questions
4. Administrative records

In addition to comparing the number and types of rooms collected from each method to the four sources mentioned above, analysis was conducted to determine if certain types of housing units or certain types of households tended to produce more discrepancies in room counts. We investigated whether each of the following factors correlated with an increased incidence of discrepancies:
- the size of the housing unit
- any remodeling reported
- whether the housing unit was a split-level
- whether the housing unit was owned or rented (tenure)

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[11] Due to small sample sizes, statistical significance was determined using the two-sided Fisher's Exact Test, unless otherwise indicated.

- whether there were changes in the composition of the household between the field test and the 2013 administration of the AHS

Table 4 provides an overview of findings by room type, data source, and method. Analysis of comparisons between questionnaire data and each of the four sources of data is presented individually in Tables 5 through 16 below, with more complete results available in Appendix L. Green highlighting indicates which of the two methods more closely matched each data source (e.g., public records, 2013 AHS data, etc.).

Table 4. Overview of Questionnaire Room Count Comparisons by Method

		Usable Cases				
		M1	N	M2	N	Diff
Bedrooms	Questionnaire matches public records	79%	85	75%	67	4%
	Questionnaire matches 2013 AHS data	91%	89	92%	74	-1%
	Questionnaire matches tour of the home data	81%	83	86%	73	-6%
	Questionnaire matches debriefing (for sale) question[12]	99%	85	93%	74	6%
	Tour of the home data matches debriefing (for sale) question	80%	81	82%	73	-2%
	Questionnaire matches AHS 13 data & tour of the home data	73%	83	79%	73	-6%
	Questionnaire matches public records & tour of the home data	63%	79	65%	66	-2%
	Questionnaire matches 2013 data, tour of the home data, & public records	59%	79	65%	66	-6%
	Tour of the home matches public records	65%	79	67%	66	-2%
Dining Rooms	Questionnaire matches tour of the home data	83%	87	92%	74	-9%
	Tour of the home data matches 2013 AHS data	62%	87	64%	74	-1%
	Questionnaire matches 2013 AHS data	61%	89	58%	74	3%
	Questionnaire matches 2013 data & tour of the home data	53%	87	57%	74	-4%
Total Rooms	Questionnaire matches AHS 2013 data	49%	89	47%	74	2%
	Questionnaire matches tour of the home data	71%	83	74%	73	-3%
	2013 AHS data matches tour of the home data	49%	83	55%	73	-5%
	Questionnaire matches AHS 13 data & tour of the home data	39%	83	41%	73	-3%
	Total Cases		89		74	

Comparison to 2013 AHS Data

We would expect variation between the 2013 AHS data and the 2014 AHS field test data, since the total count of rooms from one AHS administration to the next typically varies for 52%-56% of all interviewed housing units. This variation over time was the motivation for the field test. It is also expected that the count of rooms collected in Method 1 would more closely resemble the count of rooms collected in the 2013 AHS data, as Method 1 was a paper adaptation of the unit questions used in the 2013 AHS.

For both the count of dining rooms as well as the count of total rooms (see Table 5), the overall trend was that Method 1 did in fact more frequently resemble the 2013 AHS data (61% for Method 1 and 58% Method 2, and 49% for Method 1 and 47% for Method 2, respectively). While Method 2 more frequently matched the 2013 AHS data for the total count of bedrooms in the housing unit

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[12] Result is statistically significant at p < 0.1

(91% for Method 1 compared to 92% for Method 2), the difference between the frequency of the matches for both Method 1 and Method 2 was slight.

These results suggest that the paper adaptation of the 2013 unit questions was successful, as Method 1 tended to more frequently resemble the 2013 AHS data than did Method 2, and as the variation in total room count was near 50%. However, in all cases the difference between the two methods was relatively small.

Table 5. Comparisons of Questionnaire Room Counts to 2013 AHS Data

	M1	N	M2	N	Diff
Bedroom count from questionnaire matches 2013 AHS data	91%	89	92%	74	-1%
Dining room count from questionnaire matches 2013 AHS data	61%	89	58%	74	3%
Total room count from questionnaire matches 2013 AHS data	49%	89	47%	74	2%

Comparison to Tour of the Home

During the tour of the home, field representatives were instructed to record both what respondents called each room, as well as how the room would be classified according to the AHS's definitions for specific room types[13]. As a result, there were two potential sources of data for analysis from the tour of the home (see Figure 7 for relevant portion of tour of the home).

During analysis, if there was any discrepancy between what the respondent called the room and how the field representative thought it would be classified in the AHS, we utilized the field representative's classification of the room according to the AHS's definitions.

The tour of the home was not audio recorded, as it was deemed too difficult for the field representative to carry a handheld tape recorder as well as carrying a clipboard and recording information on the inventory of rooms in the home. As a result, no behavior coding analysis was conducted on the tour of the home. However, results from the debriefing focus group with four field representatives indicated that in the case of at least one field representative who worked on the project for the entire duration of the field period, the field representative was recording rooms on the tour of the home according to their usage. This behavior was contrary to the instructions that field representatives received to record rooms based on the purpose for which the room was designed. As a result, a bedroom being used as an office would have been incorrectly recorded as an office rather than as a bedroom by that field representative, and possibly by others. Unfortunately, no data is available regarding how pervasive this problem was. While that limitation of the data is noteworthy given the interest in knowing the count of rooms according to how they were designed rather than how they are being used by respondents, the observational data from the tour of the home remains the best data regarding the inventory of rooms in housing units.

As shown in Table 6, Method 2 tended to match the count of bedrooms, dining rooms, and total rooms more frequently than did Method 1 when compared to the tour of the home (81% for Method

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[13] If respondents would not allow field representatives to visually inspect a room (usually by refusing to open a door), field representatives could indicate on the questionnaire that they could not evaluate the room. These cases were removed from relevant comparisons.

1 compared to 86% for Method 2 for bedrooms, 83% for Method 1 compared to 92% for Method 2 for dining rooms, and 71% for Method 1 compared to 74% for Method 2 for total rooms). The discrepancy was most notable for dining rooms, which is unsurprising, given that in Method 2 the definition of a separate dining room was administered as a completely separate question rather than at the field representative's discretion.

The overall trend seems to indicate that Method 2 provides a more accurate count of rooms than Method 1 when using the tour of the home as a measure of truth for the number of rooms in a housing unit, although differences are not statistically significant.

Table 6. Comparisons of Questionnaire Room Counts to Tour of the Home

	M1	N	M2	N	Diff
Bedroom count from questionnaire matches tour of the home	81%	83	86%	73	-6%
Dining room count from questionnaire matches tour of the home	83%	87	92%	74	-9%
Total room count from questionnaire matches tour of the home	71%	83	74%	73	-3%

Comparison to Debriefing Questions

Respondents were asked debriefing questions at the conclusion of the survey, not to be confused with the debriefing questionnaires that field representatives and field supervisors were given at the conclusion of the field period. These questions were identical across methods. The question most relevant to our analysis asked how many rooms the respondent would put in a real estate listing if selling or renting out the housing unit (see Figure 10).

D5. If you were [selling/renting out] your home, how many bedrooms would you include in the listing for your home?

| | ☐ Dk | ☐ Ref |

Figure 9. Debriefing Question Used in Data Analysis

Some respondents may use a bedroom for some purpose other than sleeping (i.e. as an office or den, a craft room, etc.), but it is thought that many respondents may be conversant with the common definition of a bedroom employed by realtors when advertising a housing unit. This familiarity with a definition of bedrooms independent of their usage was the purpose of administering this question. However, one caveat to the administration of this question is that it has more relevance for owners than renters. Anecdotally, there were reports of confusion when renters were asked how many bedrooms they would list if they were renting out their housing unit. Some reported that they would rent out all the rooms, or focused on renting a bedroom to a lodger, rather than grasping the intent of the question. As a result, the question may have been less well understood by renters than by owners.

The results in Table 7 demonstrate that the count of bedrooms collected in Method 1 more frequently matched the count of bedrooms collected in the debriefing question than did Method 2 (99% compared to 93%, respectively). One possible explanation for the higher frequency of a match for Method 1 could be that asking for a count of a particular room type is a cognitively similar task to the count of rooms collected in Method 1. This task less closely resembles the cognitive task that respondents who were administered the floor-by-floor approach had been "trained on" during the administration of the survey questions preceding the debriefing questions.

Table 7. Comparison of Questionnaire Bedroom Count to Debriefing Question

	M1	N	M2	N	Diff
Bedroom count from questionnaire matches debriefing question[14]	99%	85	93%	74	6%

Comparison to Administrative Records

Public tax records were collected for all housing units, when possible. As mentioned earlier, available information included bedrooms, bathrooms, number of stories, and housing unit type[15]. As shown in Table 8, the overall trend observed was that the count of bedrooms collected in Method 1 more frequently matched the count of bedrooms in the administrative records than did Method 2.   However, the difference between the two methods, 79% for Method 1 and 75% for Method 2, was relatively small.

Table 8. Comparison of Questionnaire Bedroom Count to Administrative Records

	M1	N	M2	N	Diff
Bedroom count from questionnaire matches admin records	79%	85	75%	67	4%

When the difference discussed above is broken out by the size of the housing unit, shown in Table 9 below, the count of bedrooms from Method 2 matches the count of bedrooms from the administrative records far less frequently than does Method 1 for smaller units (70% for Method 1 compared to 44% for Method 2), while Method 2 matches the count of bedrooms slightly more often than Method 1 for larger housing units (82% for Method 1 compared to 86% for Method 2). Some respondents in efficiencies or studio apartments may have had difficulty when answering Method 2, as they tended to volunteer "areas" that were not actual rooms (i.e. "breakfast area," or "sleeping area," etc.). It should be noted that the small sample sizes for multi-unit and single family attached housing units limited any analysis that took housing unit size into account, and the quality of the data for the public records is known to be particularly poor for multi-unit housing.

Table 9. Comparison of Questionnaire Bedroom Count by Housing Unit Type to Administrative Records

	Multi-unit/Single Family Attached					Single Family Detached				
	M1	N	M2	N	Diff	M1	N	M2	N	Diff
Bedroom count from questionnaire matches admin records	70%	23	44%	18	26%	82%	62	86%	49	-4%

While this field test is unusual in that observational data regarding the rooms in respondents' homes were captured, for most surveys administrative records are the best available measure of truth. Given the limitations of administrative records (see sections Public Records and Data Entry Quality Control above), comparisons of data from the tours of the home to data from the administrative records are of particular interest. Table 10 shows that for around two thirds of

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[14] Result is statistically significant at $p < 0.1$

[15] Analysis focused on the count of bedrooms, as this measure is used as an indicator of overcrowding in housing units.

usable cases (65% for Method 1 and 67% for Method 2), the count of bedrooms from the tour of the home matched the count collected in administrative records. The converse, that around one third of the time the two counts do not match, suggests that administrative records can provide valuable information about housing units, but that using administrative records as a proxy to replace surveying respondents for this information is still not feasible.

Table 10. Comparison of Bedroom Count from Tour of the Home to Administrative Records

	M1	N	M2	N	Diff
Bedroom count from tour of the home matches admin records	65%	79	67%	66	-2%

Multiple Comparisons

Establishing a measure of truth for this study was difficult, given known limitations of both the administrative records (e.g., records averaged across units in multi-unit buildings, records that are out of date, missing records for some addresses) and the tour of the home (e.g., rooms that may have been reported by respondents and recorded by interviewers according to their usage rather than their design). While in general we weighed the observational data from the tour of the home more heavily than the administrative records, combining these measures also provides a potential point of comparison for analysis. Thus, in addition to individually comparing the count of certain room types from each method of the field test questionnaire to the (1) 2013 AHS data, (2) the tour of the home, and (3) the public records, Table 11 shows combined comparisons to provide a sense of when accuracy converged across points of comparison.

For the count of bedrooms, Method 2 tended to more frequently match the data than Method 1 when compared to a combination of both the tour of the home and the public records (63% for Method 1 compared to 65% for Method 2), as well as to a combination of the 2013 AHS data, the tour of the home, and the public records (59% for Method 1 compared to 65% for Method 2). Method 2 also more frequently matched the count of dining rooms from the 2013 AHS data and the tour of the home (53% for Method 1 and 57% for Method 2). While Method 2 more frequently matched the total count of rooms from the 2013 AHS data and the tour of the home, the difference between the relative frequency of a match occurring for each method was very small (39% for Method 1 and 41% for Method 2).

While these analyses indicate that Method 2 tended to more accurately collect the count of bedrooms, dining rooms, and total rooms, it should be noted that known discrepancies in the data from prior administrations of the AHS were the motivation for the field test, and as such the 2013 AHS data is not the best measure of truth available for determining the most accurate set of unit questions.

Table 11. Comparison of Questionnaire Room Counts to 2013 AHS Data, Tour of the Home, & Public Records (When Applicable)

	M1	N	M2	N	Diff
Bedroom count from questionnaire matches tour of the home & public records	63%	79	65%	66	-2%
Bedroom count from questionnaire matches 2013 data, tour of the home, & public records	59%	79	65%	66	-6%
Dining room count from questionnaire matches 2013 data & tour of the home	53%	87	57%	74	-4%
Total room count from questionnaire matches 2013 data & tour of the home	39%	83	41%	73	-3%

Impact of Housing Unit Size on Discrepancies

The relatively low number of completed cases in which the housing unit was a single unit attached to one or more units, or a unit in a building with two or more apartments, limited meaningful analysis by housing unit size (see Table 19 in Appendix L for more complete results). This limitation is unfortunate given the evidence from analysis of prior administrations of the AHS that larger housing units tended to show more fluctuations in the count of rooms from one administration of the AHS to the next than did smaller housing units. The small sample sizes notwithstanding, data from comparisons to the tour of the home are presented in Table 12 below. The count of bedrooms from the questionnaire compared to that from the tour of the home more frequently matched for Method 2 than for Method 1 for both smaller units and larger units. The discrepancy between the performance of the two methods for bedrooms was quite large for smaller units in particular (77% for Method 1 compared to 87% for Method 2), and somewhat more modest for larger units (82% for Method 1 compared to 86% for Method 2). This finding differed from Table 9 discussed above, in which Method 2 performed better than Method 1 on the count of bedrooms when compared with administrative records for larger units, but performed worse for smaller units.

In terms of total rooms, Method 2 more frequently matched the count of rooms from the tour of the home than did Method 1 for both sizes of housing units, but the differences were relatively small (77% for Method 1 compared to 78% for Method 2 in smaller units; 68% for Method 1 compared to 72% for Method 2 in larger units).

Overall, Method 2 tended to match the count of bedrooms, dining rooms, and total rooms more frequently than did Method 1 for both smaller and large housing units when compared to the count of rooms in the tour of the home.

Table 12. Comparison of Questionnaire Room Counts by Housing Unit Size

	Multi-unit/Single Family Attached Usable Cases					Single Family Detached Usable Cases				
	M1	N	M2	N	Diff	M1	N	M2	N	Diff
Bedroom count from questionnaire matches tour of the home data	77%	26	87%	23	-10%	82%	57	86%	50	-4%
Dining room count from questionnaire matches tour of the home data	85%	27	91%	23	-6%	82%	60	92%	51	-10%
Total room count from questionnaire matches tour of the home data	77%	26	78%	23	-1%	68%	57	72%	50	-4%
Total Cases		27		23			62		51	

Impact of Remodeling on Discrepancies

Incidences of remodeling were minimal, with only two of the usable Method 1 cases reporting a renovation that might potentially affect the count of rooms in the home, while none of the usable Method 2 cases did so. As a result, analysis of remodeling as a factor that might correlate with room count discrepancies was not possible.

Impact of Split-level Housing Structure on Housing Unit Discrepancies

Given the floor-by-floor structure of the Method 2 survey questions, researchers were interested in potential the impact that split-level housing had on the performance of both methods. Out of all usable cases, only five incidences of split-level housing units were recorded. As the prevalence of split-level housing units captured by the questionnaire was so low, we were unable to determine the impact that split-level housing had on the performance of either method.

Impact of Tenure on Discrepancies

Home ownership tended to correlate with housing unit type (and by extension, unit size), such that owners were more likely to live in single-family detached housing units than renters, with 93% of owned housing units compared to only 40% of rented housing units being single-family detached housing. (See Table 20 in Appendix L for more complete results.)

Table 13 below shows the results of comparisons between the count of rooms in the questionnaire to the count of rooms in the tour of the home by housing tenure[16]. Method 2 matched the count of bedrooms from the questionnaire compared to that from the tour of the home more frequently than did Method 1 for both owned housing units and rented housing units. The discrepancy between the performance of the two methods was more pronounced for rented housing units (83% for Method 1 compared to 94% for Method 2), and less substantial for owned housing units (78% for Method 1 compared to 80% for Method 2).

For both dining rooms and the total count of rooms, Method 2 seemed to match more frequently than did Method 1 for owned housing units, while the opposite was true for rented housing units. In the case of total rooms, the difference between the two methods was relatively small for rented

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[16] In two usable cases, the respondent reported occupying the housing unit without payment of rent. Given the small cell size, these cases were excluded from the analysis by housing tenure.

housing units (80% of Method 1 cases compared to 79% for Method 2), but was slightly more pronounced for owned housing units (65% of Method 1 cases compared to 70% for Method 2).

Overall, Method 2 tended to match the count of bedrooms, dining rooms, and total rooms more frequently than did Method 1 for owned housing units, but the results were more mixed for rented housing units.

Table 13. Comparison of Questionnaire Room Counts by Tenure

	Owned Usable Cases					Rented Usable Cases				
	M1	**N**	**M2**	**N**	**Diff**	**M1**	**N**	**M2**	**N**	**Diff**
Bedroom count from questionnaire matches tour of the home data	78%	46	80%	40	-2%	83%	35	94%	33	-11%
Dining room count from questionnaire matches tour of the home data[17]	80%	49	95%	40	-15%	89%	36	88%	34	1%
Total room count from questionnaire matches tour of the home data	65%	46	70%	40	-5%	80%	35	79%	33	1%
Total Cases		51		40			36		34	

Impact of Changes in Housing Unit Composition on Discrepancies

Given the tendency that respondents have to report rooms according to their usage rather than their design, we were interested in whether changes in household composition had any impact on the data. The composition of households reported in 2014 was compared[18] to that in 2013 in order to examine the distribution of changes in household composition across methods. The results of this analysis (see Table 14 below, or Table 21 in Appendix L for more complete results) seem to indicate that Method 2 cases were somewhat more likely to report a change in household composition since the 2013 administration of the AHS than Method 1 cases (44% for Method 1 compared to 52% for Method 2). It should be noted that the demographic questions that collected a household roster were the first questions in both questionnaires and were identical across methods. As such, this difference is most likely a random characteristic of the sample rather than a result of which version of the questionnaire was administered at a given housing unit.

Table 14. Household Composition by Method

	Method 1	Method 2	Diff
Same household	56%	47%	9%
Partially different household	24%	31%	-7%
Completely different household	20%	21%	-1%

[17] For 'Owned Usable Cases,' result is statistically significant at $p < 0.1$

[18] This determination was made by reviewing a score generated by the SPEDIS command in SAS between each household member's name in 2013 and in 2014, and linking the most likely pair based on the minimum score for each person (a lower score meaning the names were more similar, and a score of 0 meaning they were identical). Two criteria were defined, and the linked pair would be considered a true match if one or both criteria was satisfied:(1) Either the SPEDIS score was less than or equal to 30; or (2) (i) The SPEDIS score was less than or equal to 60; and (ii) the gender of the persons matched between 2013 and 2014; and (iii) the age of the person in 2014 was at least the same as that in 2013 but not more than two years higher. If neither criterion was satisfied then the pair was not considered a true match.

When comparing the Method 1 cases to the 2013 data (see Table 15 below), households in which every member was the same more frequently matched the count of bedrooms and total rooms in the 2013 AHS than those in which one or more household members was different (98% for the same household compared to 82% for different households for bedrooms; 52% for the same household compared to 46% for different households for total rooms). This trend was reversed for dining rooms, with 52% of the same households compared to 72% of different households matching between administrations. However, there were some differences in how the separate dining room question was administered between the two administrations due to limitations in adapting a CAPI questionnaire onto paper.

These findings indicate that when the same questions are administered to the same housing units across different years, the composition of the household has an important influence on discrepancies in room counts. The same households show greater consistency across years in their reporting than do different households, which suggests that the same households are more likely to be using the rooms in the same way from one year to the next than is a different household.

Table 15. Comparison of Method 1 Questionnaire Room Counts to 2013 AHS Data by Household Composition

	Method 1				
	Same HH	N	Diff HH	N	Diff
Bedroom count from questionnaire matches 2013 AHS data	98%	50	82%	39	16%
Dining room count from questionnaire matches 2013 AHS data	52%	50	72%	39	-20%
Total room count from questionnaire matches 2013 AHS data	52%	50	46%	39	6%

Alternative Coding of Dens as Bedrooms

The number of bedrooms collected in the AHS is particularly important for measures of overcrowding. In housing units impacted by overcrowding, certain rooms such as dens may be repurposed as bedrooms. (See Table 22 in Appendix L for further analysis of qualifying dens coded as bedrooms.) Eighteen usable cases were identified in which one or more rooms listed as dens during the tour of the home could qualify as bedrooms using an expanded definition of bedrooms that includes dens containing doors and windows. For the purposes of this analysis, these dens were counted as bedrooms (see Table 16 below).

When qualifying dens were counted as bedrooms, the frequency of the count of bedrooms from the questionnaire matching the count from the tour of the homes was lower for both Method 1 and Method 2 than it was when dens were not counted as bedrooms. The frequency of matching was only 77% for Method 1 and 82% for Method 2 when qualifying dens were counted as bedrooms, compared to 81% for Method 1 and 86% for Method 2 when qualifying dens were not counted as bedrooms.

There are two contradictory hypotheses that explain the results above. One possibility is that respondents were referring to any dens used as bedrooms as "dens" when answering both versions of the questionnaire, and as a result this alternative coding of dens reduced the frequency of matching. Another possibility is that respondents were referring to any bedrooms used as dens as "dens" when answering both versions of the questionnaire, which also would have reduced the

frequency of matching. The former hypothesis implies that respondents reported rooms based on their design rather than their usage, while the latter hypothesis implies that respondents reported rooms based on their usage rather than their design. Unfortunately, the data is inconclusive as to which hypothesis accounts for the trends evident in the analysis (or whether both do to a certain extent). Overall, any alternative coding of qualifying dens as bedrooms seems to render the data less accurate.

Table 16. Comparison of Questionnaire Bedroom Counts to Tour of the Home Counts with Alternative Coding of Dens

	Qualifying Dens Counted As Bedrooms					Qualifying Dens Not Counted as Bedrooms				
	M1	N	M2	N	Diff	M1	N	M2	N	Diff
Bedroom count from questionnaire matches tour of the home[19]	77%	83	82%	73	-5%	81%	83	86%	73	-6%

Behavior coding analysis

The results of the behavior coding (see Table 17) measure the incidence of problematic behaviors, and as such, lower percentages indicate better performance of a given method. Green highlighting indicates which of the two methods resulted in fewer observed fewer problematic behaviors.

Table 17. Summary of Behavior Coding Results

	M1	N	M2	N
FR Requests R Slow Down	1%	89	3%	74
Negative Affect	1%	89	3%	74
Major Changes	61%	89	51%	74
R Requests Clarification[20]	23%	35	31%	36
Uncodeable Answers[21]	23%	35	22%	36

FR Requests that R Slow Down

Requests to slow down were of particular concern for Method 2, as previous implementation of a floor-by-floor method resulted in some complaints from field representatives that the method was too unwieldy. Between questions 14a and 17 (the unit questions that are unique to Method 2 rather than those shared by both methods), there was two interviews in which a field representative requested that a respondent slow down. Between questions 14 and 28 in Method 1 (the unit questions that are unique to Method 1 rather than those that are shared by both methods), there was one interview in which a field representative requested that the respondent slow down. This differences are not statistically significant, and may indicate that neither method encourages respondents to answer at a rate faster than the field representatives can comfortably record, but it should be noted that this finding is specific to conducting the survey on paper, and may not apply when the survey is conducted in CAPI.

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[19] Results were not statistically significant using McNemar's Test.
[20] Analysis limited to cases without major changes.
[21] Analysis limited to cases without major changes.

Negative Affect

Based on some anecdotal reports from the previous implementation of the floor-by-floor method, behavior coders were instructed to note any displays of frustration with the questionnaire format for either method, or apologetic behavior to the respondents about the format of the questionnaire for either method. For Method 1, there was one interview out of 89 (1%) in which a field representative displayed negative affect at the relevant questions, while for Method 2, there were two interviews out of 74 (3%). Overall, displays of negative affect occurred infrequently and are not a source of concern, based on the behavior coding data.

Major Changes

Behavior coders categorized major changes to the question text as involving added text, omitted text, replaced text, or incorrect fills. For Method 1, there were 54 interviews out of 89 (61%) in which a field representative made a major change to the question text for at least one question from questions 14-28 (excluding incorrect fills). For Method 2, there were 38 out of 74 interviews (51%) in which a field representative made a major change to the question text for at least one relevant question (excluding incorrect fills). Further analysis of the types of changes made in both methods follows below under "Findings specific to Method 1" and "Findings Specific to Method 2." It should be noted that small number of interviewers may amplify any interviewer effects in this data and results should be interpreted with caution.

Requests for Clarification[22]

In order to capture how understandable the questionnaire was for respondents, behavior coders noted whether respondents asked for clarification at their first turn of the conversation, or at any point during the entire exchange. Respondents requested clarification in eight interviews out of 35 (23%) for Method 1 cases and 11 out of 36 for Method 2 cases (31%) in which the question was administered without making a major change.

In Method 1, respondents requested clarification regarding how to count separate dining rooms, living rooms, kitchens, "Florida rooms," "comfort rooms," "sun rooms," "foyers," garages, and other finished rooms.

In Method 2, respondents requested clarification regarding how to count porches (screened in or otherwise), closets, dining rooms, entryways, laundry rooms, and bathrooms. Additionally, five respondents expressed some hesitation when question 14a was initially read to them regarding whether they should answer about all room types or only certain room types (i.e. just bedrooms?) and whether they should list every room or just provide a total number.

Uncodeable Answers[23]

For the relevant Method 1 questions, there were eight interviews out of 35 interviews (23%) in which the field representative read the questions exactly as worded but the respondent was unable

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[22] This analysis excludes questions where the field representative made a major change to the question text.

[23] This analysis excludes questions where the field representative made a major change to the question text.

to give a final codeable answer. For the relevant Method 2 questions, there were eight interviews out of 36 (22%) in which the respondent was unable to give a final codeable answer. These results are fairly equivalent between methods and do not raise particular concern for implementing either method, although the sample sizes are small.

Average Duration of Unit Questions

Method 2 took an average of 32 seconds longer to administer than Method 1, with Method 2 taking 3 minutes and 21 seconds on average while Method 1 took 2 minutes and 49 seconds. These results are specific to administering the questionnaire on paper, as both methods required field representatives to turn pages and follow skip patterns. In CAPI, we anticipate that both methods would take less time to administer than they did on paper.

Findings Specific to Method 1

Question 18 asks respondents how many separate dining rooms they have, and provides a definition for separate dining room if the respondent reported having a separate dining room. Out of 89 interviews, a major change was made at question 18 12 times (13%), and of those, eight were cases when the optional dining room definition was read when the respondent had not reported having a separate dining room (9% of total interviews). This may indicate that respondents need guidance on the AHS's separate dining room definition and that this should be given to all respondents rather than only administered at a field representative's discretion.

Question 21 asked if there were other rooms besides the ones that the respondent had reported at questions 14 through 19. There were 17 cases (19%) in which a major change was made at this question. Many of these changes emphasized that the question was asking about rooms in addition to those rooms the respondent had already reported about by adding phrases such as, "besides the ones listed" or "that we just talked about" or "that you haven't notified me about." The incidence of such changes might be reduced if the question was rephrased to, "Besides the rooms you already told me about, are there any OTHER rooms in this home?"

At Question 28, field representatives read back the tally of rooms to the respondent and verified whether the count of rooms was correct. There were 30 cases (34%) with a major change at this question. Most of these changes involved the field representative replacing "Are there any other rooms" with some other form of a verification, most commonly "Is that correct?" Given the number of these changes, if Method 1 is utilized in the 2015 AHS, we recommend changing the wording to, "I have listed [tally of each room type] in your home. Is this correct?"

Findings Specific to Method 2

Question 14a collects the room inventory. Excluding incorrect fills, there were 14 cases out of 74 (19%) where a major wording change occurred. These changes included added text such as "everything but hallways and closets," "including the attic," or "So just start at one end and name the rooms you go through." These changes also included cases of omitted text, with the first sentence being the most commonly omitted ("The next few questions are about the number and kinds of rooms in your [house/apartment],"). Overall, the major changes made at this question

indicate that making the instruction clearer for the respondent would be beneficial. See suggestions in the Recommendations section of the report.

Question 14b verifies the respondent's room count, and provides a place for the respondent to add or remove rooms. A total of 27 interviews (36%) had a major change (excluding incorrect fills) at the first iteration of question 14b (the iteration that verifies the count of rooms on the top or only floor). Replacements or additions to the phrase, "Are there any other rooms on that floor?" were frequent, with the most common variation being "Is that correct?" In a few cases for multi-story housing units, the field representative specified that they were asking about rooms on a certain floor by mentioning phrases like "on the top floor." Similarly, in a few cases for single-story units, the field representative emphasized that they were asking about the entire housing unit rather than a specific floor by saying phrases like "in this apartment." Given the number of changes made to the question wording, the most common subset of which are discussed above, this question merits some revising to make it more usable for future field representatives. See suggestions in the Recommendations section of the report.

Question 15 is the same as question 14a, and only read for housing units with more than one floor. Seven interviews out of nine had a major change, excluding incorrect fills, at question 15. In general, field representatives were providing extra information about the intended floor such as "on this floor," or "on the second floor or the bottom floor," etc. Overall, this indicates that when field representatives administer question 15 in person, they tend to guide the respondent by mentioning that the next floor down is "this floor," "the bottom floor," or the "first floor" based on observational information they have. These changes do not indicate a problem with the question, and will probably occur naturally when the survey question is administered in person and the field representative can observe the number of floors in the home and where the respondent is located when answering the question.

When question 14b was administered a second time to respondents with more than one floor, there were six instances of the field representative making a major change (excluding incorrect fills) out of the nine times this question was administered. While the changes resembled those that were made the first time that question 14b was read, there were also some changes that indicated that the field representative was using his or her observations of the housing unit to customize the floor that was mentioned. Field representatives used phrases like "the second floor," "on this floor," "on the first floor," or "the ground floor." As with question 15, these changes are not problematic, and will probably occur whenever the question is administered in person and the field representative can observe the number of floors in the home and where the respondent is located when answering the question.

At Question 16, field representatives read the definition of a separate dining room to respondents who reported having a dining room, and asked the respondents if the dining room they mentioned qualified as a separate room. Fifty-one respondents were administered this question, with the field representatives making a major change (excluding incorrect fills) in six interviews (12%). Most of these changes were omissions of the last sentence, "Using this definition, does your dining room qualify as a separate dining room?" and one also omitted "extending at least six inches." Overall, this question seems relatively unproblematic and the results of the behavior coding do not seem to indicate that any changes are required.

Debriefing Data Analysis

To collect insights from field representatives and field supervisors regarding the relative merits of both room inventory methods, we engaged in three different debriefing efforts: (1) a field representative debriefing questionnaire, (2) a field supervisor debriefing questionnaire, and (3) a field representative focus group. These debriefing efforts captured field representatives' and field supervisors' feedback, particularly in regards to:

1) Which parts of the questionnaires were confusing or difficult for the interviewer, or for the respondents?
2) What were some of the challenges and benefits to each of the two questionnaire methods?
3) In which types of housing units was it harder to complete the AHS?
4) Were there particular rooms that were difficult to observe or categorize according to the AHS definition during the tour of the housing unit?

Field Representative Debriefing Questionnaire Results

Eight of the sixteen field representatives who were removed from the project due to poor performance completed and returned a debriefing questionnaire (see Appendix I). The field representatives reported finding both versions of the paper questionnaire challenging to use, citing problems following skip patterns and fills. They noted particular difficulty following the skip patterns for Method 2. While these challenges are noteworthy to the extent that they contributed to the number of unusable cases, they are irrelevant in the sense that the 2015 instrument will be an automated, CAPI instrument and these problems will not recur.

The field representatives also reported the need for additional time to conduct paired practice interviews during the two-and-a-half-day classroom training. While future administrations of the AHS will not involve tours of respondents' homes, devoting particular time to the unit questions during field representative training is still recommended given how often respondents seek guidance from field representatives regarding how to count certain rooms.

Field representatives expressed confusion regarding the AHS's definitions for certain rooms, especially for combination rooms in open floor plan homes (e.g. combination living room/dining rooms, kitchen/breakfast areas, etc.), and regarding rooms that were designed for one purpose but used for another (e.g. bedrooms used as offices). We recommend clear guidelines designed by HUD that address the criteria that a room must meet to qualify as a separate room. These guidelines[24] should provide instruction regarding counting rooms according to their design or their usage.

While the field representatives reported that there was no difference in difficulty between administering either version of the questionnaire, they noted a preference for Method 1 when asked

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[24] A revised version of the definitions of rooms that were available as help text during the 2013 administration of the AHS would be a good starting point for such guidelines. Field representatives were provided with these definitions as an informational booklet to carry with them on interviews, but some of these rooms could be more clearly defined.

which version of the questionnaire should be utilized in 2015. Based on the greater difficulty they reported experiencing with the skip patterns in Method 2, this preference is unsurprising.

Field Supervisor Debriefing Questionnaire Results

One of the two field supervisors completed and returned a debriefing questionnaire (see Appendix J). This field supervisor felt that both the experienced as well as the inexperienced field representatives had only a fair understanding of the survey, even after completing the training. This field supervisor suggested greater focus on the skip patterns and the interview method during in-person training on any future studies, which indicates that a longer training period would have been preferable.

The field supervisor also noted that dining rooms seemed to cause the most difficulty for field representatives, and that there were also often discrepancies between how respondents reported dining rooms and what field representatives observed.

The field supervisor reported that the field representatives asked questions regarding how to count certain rooms as well as regarding the skip patterns, and suggested that the skip patterns should be simplified, even if it required adding additional questions.

Focus Group Results

The four field representatives who worked for the duration of the field period discussed their difficulties with the skip patterns in the questionnaires, and suggested that future questionnaires be formatted differently so that commonly skipped questions were formatted to stand out differently from other questions (e.g. using skip boxes).

Field representatives discussed training received on the first day of their in-person training that was not applicable to the specific study and should be skipped in future studies. This training focused on topics like how to probe respondents, when field representatives were instructed during the study-specific training not to probe respondents. Field representatives suggested that training for future studies focus more on the specific study rather than on general training regarding interviewing. This change would leave time to more thoroughly train field representatives regarding unusual situations they might encounter, although the field representatives acknowledged that predicting some of the situations they encountered may have been challenging. Field representatives noted that respondents sometimes referred to rooms by one name during the questionnaire but another during the tour of the home (e.g. a "bedroom" and then a "den"). One field representative reported classifying rooms according to their usage during the tour of the home rather than according to their design.

Overall, they felt that most people understood the separate dining room definition and whether their rooms counted, but discussed certain cases when respondents had difficulty. One field representative noted that respondents tended to think about bedrooms in terms of the definition used by realtors that requires the presence of a closet. Field representatives mentioned that collecting the inventory of rooms in homes was challenging in larger homes or homes with many

additions. They discussed the difficulty in classifying sliding glass doors and French doors as doors or as windows during the tour of the home.

When comparing Method 1 to Method 2, field representatives mentioned that Method 1 prompted respondents for specific room types when Method 2 did not, but found that respondents did not seem to have difficulty with either method.

Recommendations

After careful analysis of the data collected during the field test, the behavior coding, and the various debriefing efforts, we recommend a slightly modified Method 2 for the 2015 American Housing Survey for multiple reasons.

Note again that statistical analysis of the data was not possible due to small sample sizes, so the analysis focused on overall trends, and some of the differences in performance between methods were small. When compared to the tour of the home, the public records, and the 2013 AHS data, the count of rooms collected in Method 2 more frequently matched those sources of data than Method 1 for bedrooms, dining rooms, and total rooms., Establishing a measure of truth was challenging for this field test, as the public records, the 2013 AHS data, and the tour of the home had well documented flaws. We chose to weigh comparisons to the tour of the home most heavily after considering the advantages and drawbacks of each source of data. Analysis involving only comparisons to the tour of the home yielded similar results for bedrooms, dining rooms, and total rooms, with Method 2 more frequently matching the tour of the home in all three cases.

Method 2's greater success in matching the count of rooms from the tour of the home is unsurprising, given that it was designed to reduce the cognitive burden on respondents. In the Method 1 questionnaire, respondents first had to provide the number of bedrooms, bathrooms, kitchens, dining rooms, and living rooms. Respondents were then asked an open-ended question regarding whether they had any other rooms without prompting regarding specific room types. As a result, respondents were essentially subtracting types of rooms from a mental floor plan one at a time in the order that the field representative asked about them, and then examining the rooms that remained to determine if any rooms had not been reported. By reporting rooms according to category rather than spatially, respondents may have lost track of which rooms had or had not yet been reported. This task is similar to the "partial list cuing phenomenon," in which a non-exhaustive list of specific items can hinder recall when respondents are subsequently presented with a non-specific "other" category minus other recall cues (Belson and Duncan, 1962). This type of task is cognitively difficult for respondents and seems to differ from how they naturally retrieve information on the rooms in their home (Von Thurn & Moore, 1996; Linde & Labov, 1975).

In contrast, Method 2 allowed respondents to narrate the rooms in their home in the order they remembered them without requiring respondents to subtract one category at a time and report on the remaining rooms. As such, it allowed respondents to report the information in a format similar to the way they retrieved it from their memory, which is thought to reduce cognitive burden and the likelihood that a certain type of room is overlooked. Additionally, the encouragement to visualize walking from room to room in their home may have assisted with recall (Smith, 1979).

In addition to comparing the performance of both questionnaires to different sources of data on the sampled housing units, both methods were scrutinized during behavior coding to determine if either method was easier for field representatives to administer or for respondents to answer. Respondents answering Method 2 did request clarification at a higher rate than those answering Method 1 (9% of Method 1 cases compared to 15% of Method 2 cases). However, the similar rates of uncodeable responses given by respondents in each method indicate that Method 2 respondents were no less able to answer the unit questions than Method 1 respondents were. Overall, the lack of requests that respondents slow down and the lack of displays of negative affect for both methods indicate that the two methods are functionally equivalent in terms of field representative and respondent difficulty.

The results of the debriefing indicated that while the majority of the field representatives in both the focus group and the debriefing questionnaire reported that there was no difference between the two methods in terms of administering them to respondents, field representatives had a preference for Method 1 over Method 2. Varying reasons for this preference were provided, but a theme that emerged from both the debriefing questionnaires as well as the focus group was the difficulty field representatives had when following the skip patterns on paper. The skip patterns for Method 2 were quite complex, but when the AHS is programmed in CAPI in 2015, this problem will be resolved.

Beyond the indications from different data sources that Method 2 provides a slightly more accurate count of rooms, collecting rooms in a floor-by-floor format has the additional benefit of providing data regarding the floor of the home in which a particular room is located. Data users can then choose to filter out rooms based on their location (e.g. basement bedrooms, etc.).

The analysis of the data from the field test, and particularly the behavior coding, inspired the following recommendations for modifications to the existing Method 2 questions:
- A question should be added prior to question 14a that collects the total number of floors in apartments, which will allow the text at question 14a to be optimized for the number of floors in the housing unit. (A question already exists that collects the total number of floors in single family housing, but in apartments, the respondents were instructed to provide an answer regarding the number of floors in the entire building. Several field representatives collected this information, and then asked the number of floors in the apartment itself in order to select the correct fill at question 14a, but by providing a specific question that collects this information, field representative burden is reduced and field representatives no longer need to depart from the script.)
- An interviewer instruction should be added to question 14a to assist those respondents who need help beginning the inventory of rooms in their home. We suggest, "[IF NEEDED: You can start with the number of bedrooms, and then tell me about any other rooms [IF MULTI-STORY UNIT READ: on that floor / IF SINGLE-STORY READ: in your home]."
- A definition for full and half bathrooms should be included on the screen for field representatives. During the field test, field representatives were given a sheet that had the AHS's definitions of rooms from the 2013 American Housing Survey (Appendix M), but field representatives were not always able to refer back to it when administering the survey. This led to some respondents reporting that their rooms were half bathrooms when they

were full bathrooms, or reporting what they called a "three quarters bathroom." The confusion seemed to center on whether a bathroom could qualify as a full bathroom if it only had a shower OR a tub instead of both. (Only one of those two is necessary to qualify as a full bathroom, as long as there is a toilet and sink.) Including the definition of these rooms on the CAPI screens would be beneficial to the interviewers and the respondents. The Residential Energy Consumption Survey uses these definitions in their questionnaire: "A full bathroom is one that has a sink with running water, a toilet, and either a bathtub or shower. A half-bathroom is one that has either a toilet or a bathtub or a shower," which are similar to the definitions in the AHS. We suggest that this help text be provided on-screen for field representatives.

- The AHS definition of a studio apartment should be provided on screen for field representatives, as well as an instruction regarding how to record rooms in a studio apartment, as respondents in small housing units appeared to have some difficulty answering Method 2. The current definition utilized by the AHS for a studio or efficiency apartment is "a housing unit consisting of only one room." As a result, we recommend a field representative instruction that says, "A 'studio' apartment is a housing unit consisting of only 1 room. If housing unit is a studio apartment, record 1 living room and any bathrooms[25]."

- Question 14b should be reworded, since the field representatives frequently rephrased this question. We recommend changing the wording to, "[IF MULTI-STORY UNIT READ: Before moving down to another floor,] I want to make sure I have recorded your answers correctly. I have listed [tally of each room type] [IF MULTI-STORY UNIT READ: on this floor/ IF SINGLE-STORY UNIT READ: in your home]. Is this correct?"

Finally, we recommend that guidance and training be provided to field representatives regarding the AHS's definitions for rooms. Adding an instruction for field representatives is an often over-utilized method of fixing a difficult question, but in this situation, the necessity of using field representatives to assist respondents with the response task dictates that clear guidance on the definition of various troublesome types of rooms should be provided for field representatives to refer to. In particular, such guidance is needed for how HUD prefers that pantries, porches (including screened in porches), sunrooms, entryways and foyers, sheds, garages (that may be used as living quarters), hallways, closets, and "areas" such as "breakfast areas" be categorized.

As some of these recommendations involve slight modifications to the wording of the questions that was tested in the field test, we recommend conducting cognitive testing on the revised wording in the CAPI environment to ensure that these changes are not problematic for respondents.

Conclusion

After completing the split ballot field test, it is apparent that the unit questions that collect the inventory of rooms in housing units are particularly burdensome for interviewers, as the definitions that the AHS has for rooms tend to differ from the definitions commonly held by respondents. While the AHS's definitions take into account notions like archways and fire egress, respondents tend to focus on how rooms are used or how a housing unit could be advertised if being sold.

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[25] Currently, if respondents report living in a studio apartment at a subsequent question, the inventory of rooms in their home is recorded as 1 living room plus any bathrooms they reported.

The improvements made to the unit questions in Method 2 are believed to assist respondents with recall problems they encounter when attempting the task of tallying the number of rooms of varying types in their household. These improvements notwithstanding, only utilizing the floor-by-floor method as opposed to the room-by-room method does not in itself resolve all known problems with this series of questions. Ideally, both the AHS and respondents would share the same definition for different types of rooms, but barring that, field representatives are required to assist respondents in determining how to answer the questions according to the AHS's requirements. As a result, this series of questions should be a focus of training for AHS field representatives, who in all likelihood will often be asked by respondents to help them determine how to count certain types of rooms.

Acknowledgements

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Appendix A: Summary of Final Dispositions for 1,000 Sampled Housing Units

Outcome Codes	Total
201 Completed	392
203 Partial interview (no follow-up)	13
213 Language Problem	2
214 Unable to locate address	2
216 Type A - No one home (unable to contact)	20
217 Type A - Temporarily absent	3
218 Type A - Respondent refusal	190
219 Type A - Other	1
226 Type B - Vacant, regular	45
233 Type B - Other	2
240 Type C - Demolished	0
248 Type C - Other	2
Field Period Ended Without Reaching Maximum Attempts	101
Cases Assigned but not Attempted by FRs	47
Questionnaires Unaccounted for[26]	8
Unassigned Cases	172
Total	**1000**

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[26] Eight questionnaires were reported missing by field personnel during the course of the study.

Appendix B: Method 1 Questionnaire

AHS-42(A) (7-1-2014)   Control No. _____

AHS Field Test – Method 1

<u>Demographic Questions</u>
[INTERVIEWER: IF RESPONDENT CONSENTED, TURN ON AUDIO RECORDER NOW.]
Let's get started. I'm going to ask you some questions about the people who live here.
[INTERVIEWER: ADMINISTER QUESTIONS VERTICALLY. ASK FOR ALL THE NAMES OF HH MEMBERS, THEN THE SEX OF ALL HH MEMBERS, THEN THE AGE OF ALL HH MEMBERS, ETC.]

	Mark owner or renter	1. What are the names of all the people who live or stay here? Start with yourself... Who else is living or staying here?	2. *[IF NEEDED]* [Are you/Is NAME] male or female?	3. What is [your/NAME's] age?	4. *IF NOT RESPONDENT:* **How is [NAME] related to you?** 1. Spouse (husband/wife) 2. Unmarried Partner 3. Child 4. Grandchild 5. Parent (mother/father) 6. Sibling (brother/sister) 7. Other Relative (Aunt, Cousin, Nephew, Mother-in-law, etc.) 8. Foster Child 9. Housemate/Roommate 10. Roomer/Boarder 11. Other Non-relative 12. DK 13. Ref
1	☐		☐ M ☐ F	☐ dk ☐ ref	
2	☐		☐ M ☐ F	☐ dk ☐ ref	
3	☐		☐ M ☐ F	☐ dk ☐ ref	
4	☐		☐ M ☐ F	☐ dk ☐ ref	
5	☐		☐ M ☐ F	☐ dk ☐ ref	
6	☐		☐ M ☐ F	☐ dk ☐ ref	
7	☐		☐ M ☐ F	☐ dk ☐ ref	
8	☐		☐ M ☐ F	☐ dk ☐ ref	
9	☐		☐ M ☐ F	☐ dk ☐ ref	
10	☐		☐ M ☐ F	☐ dk ☐ ref	

5. Were all of these people living in this [house/apartment] since May of 2013?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

6. Is this [house/apartment] –	
[INTERVIEWER: READ CATEGORIES UNTIL A YES IS RECEIVED.]	
1. ☐ Owned?	4. ☐ Dk
2. ☐ Rented?	5. ☐ Ref
3. ☐ Occupied without payment of rent?	

7. In whose name is this home [owned/rented/occupied]?
[INTERVIEWER: MARK BOX NEXT TO OWNERS'/RENTERS' NAME ON HOUSEHOLD ROSTER.]

1

8. What is your best estimate of the total income your household received from all sources in the past 12 months?	
1. ☐ Less than $25,000	4. ☐ More than $100,000
2. ☐ $25,000 – $49,999	5. ☐ Dk
3. ☐ $50,000 – $100,000	6. ☐ Ref

9. The next few questions are just about you. Are you Spanish, Hispanic, or Latino?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

10. Please choose one or more races that you consider yourself to be.	
1. ☐ White	5. ☐ Native Hawaiian or Other Pacific Islander
2. ☐ Black or African American	6. ☐ Other; specify _____
3. ☐ American Indian or Alaska Native	7. ☐ Dk
4. ☐ Asian	8. ☐ Ref

11. What is the highest level of school you have completed or the highest degree you have received?	
1. ☐ Less than high school completed	6. ☐ Professional degree (e.g., JD, LLB, MD, DDS, DVM)
2. ☐ High school diploma or equivalent	7. ☐ Doctorate (e.g., PhD, DSc, EdD)
3. ☐ Some college, vocational, or trade school (including 2-year degrees)	8. ☐ Dk
4. ☐ Bachelor's degree (e.g., BS, BA, AB)	9. ☐ Ref
5. ☐ Master's degree (e.g., MS, MA, MBA)	

Unit Questions

The next questions are about your] home.
[ASK FOR ALL UNITS EXCEPT APARTMENTS. APARTMENTS SKIP TO Q13]

12. Is this house built...	
[INTERVIEWER: READ CATEGORIES UNTIL A "YES" REPLY IS RECEIVED]	
1. ☐ With a basement?	4. ☐ In some other way? (Specify) _____
2. ☐ With a crawl space?	5. ☐ Dk
3. ☐ On a concrete slab?	6. ☐ Ref

13. How many stories are there in this [IF APARTMENT: building / IF NOT APARTMENT: home], [IF BASEMENT READ: including the basement and any finished attics / IF NO BASEMENT READ: including finished attics]?		
[INTERVIEWER: IF SPLIT LEVEL, COUNT GREATEST NUMBER OF STORIES ON TOP OF EACH OTHER.]		
_____	☐ Dk	☐ Ref

2

The next few questions are about the number and kinds of rooms in your [house / apartment]. [*IF MORE THAN ONE FLOOR READ: Thinking about all of the different floors*] …

GRID 1

14. How many bedrooms are there in your [house / apartment]?	15. How many full bathrooms?	16. How many half bathrooms?	17. How many kitchens?	18. How many SEPARATE dining rooms? [IF YES READ: A separate dining room is one that's separated from other rooms by archways or walls extending at least six inches. Is this what you mean by a separate dining room?]	19. How many living rooms?
_____	_____	_____	_____	_____	_____

20. [*INTERVIEWER: IF NO BEDROOMS/KITCHENS/ONE OR LESS LIVING ROOMS REPORTED, ASK:*] Is this a one room efficiency or studio apartment?	
1. ☐ Yes → *SKIP TO Q28*	3. ☐ Dk
2. ☐ No	4. ☐ Ref

21. [*IF NOT A STUDIO, ASK:*] Besides all of these rooms, are there any OTHER rooms in this home?	
1. ☐ Yes	3. ☐ Dk → *SKIP TO Q28*
2. ☐ No → *SKIP TO Q28*	4. ☐ Ref → *SKIP TO Q28*

21a. What are they?	
[*INTERVIEWER: DO NOT COUNT THE SAME ROOM MORE THAN ONCE. DO NOT COUNT GARAGES, HALLWAYS, CLOSETS, OR PORCHES AS ROOMS.*]	
1. ☐ Family rooms/Great rooms/TV rooms	5. ☐ Other Finished Rooms
2. ☐ Recreation rooms	6. ☐ Other Unfinished Rooms
3. ☐ Dens/Libraries	7. ☐ Dk
4. ☐ Laundry/Utility/Pantries	8. ☐ Ref

[*INTERVIEWER: FOR ANY ROOMS REPORTED AT Q21a, ASK RELEVANT QUESTION Q22-Q27. DO NOT COUNT THE SAME ROOM MORE THAN ONCE. DO NOT COUNT GARAGES, HALLWAYS, CLOSETS, OR PORCHES AS ROOMS.*]

GRID 2

How many…

22. Family rooms, great rooms, or TV rooms?	23. Recreation rooms?	24. Dens or libraries?	25. Laundry, utility, or pantry rooms?	26. Other FINISHED rooms?	27. Other UNFINISHED rooms?
_____	_____	_____	_____	_____	_____
☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref	☐ Dk ☐ Ref

3

28. I have listed [IF STUDIO READ: a one room efficiency or studio apartment, with] [INTERVIEWER: READ NUMBER OF ROOMS FROM GRID 1 and GRID 2]. Are there any other rooms [IF Q12 = 1 READ: in the basement or elsewhere in your home]?	
[IF NEEDED: Have I mis-recorded the number of any rooms?]	
1. ☐ Yes → What is inaccurate? → *MAKE CORRECTIONS IN GRID 1 AND GRID 2. THEN CONTINUE TO Q29*	3. ☐ Dk → *CONTINUE TO Q29*
2. ☐ No → *CONTINUE TO Q29*	4. ☐ Ref → *CONTINUE TO Q29*

STUDIO APARTMENTS: IF NO BATHROOM IS LISTED IN GRID 1, *ASK Q29. ELSE SKIP TO Q30.*
ALL OTHER UNITS: IF NO BEDROOM, KITCHEN, OR BATHROOM IS LISTED IN GRID 1, *ASK Q29.*
ELSE *SKIP TO Q30.*

29. I want to be sure that I have correctly recorded all of the rooms information. My notes state that there is not a [bedroom/bathroom/kitchen] in this home. Is that correct?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No – PROBE: Which do you have? Which do you not have? → *MAKE CORRECTIONS IN GRID 1. THEN CONTINUE TO Q30.*	4. ☐ Ref

30. How many rooms, if any, are used EXCLUSIVELY for business space?		
_____	☐ Dk	☐ Ref

31. How many rooms, if any, are used both as business space and for personal use?		
_____	☐ Dk	☐ Ref

IF Q31 > 0

31a. In addition to using [it/them] as business space, what else [is it/are they] used for?	
MARK ALL THAT APPLY.	
1. ☐ Bedroom/Guest Room	5. ☐ Other (Specify) _____
2. ☐ Dining Room	6. ☐ Dk
3. ☐ Kitchen	7. ☐ Ref
4. ☐ Living Room	

32. Does the [house / apartment] have a porch, deck, balcony, or patio?	
[IF NEEDED: Measuring at least 4 feet by 4 feet]	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

33. Is a garage or carport [either attached or detached] included with the [house / apartment]?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

[INTERVIEWER: TURN OFF AUDIO RECORDER NOW.]

4

Tour of the Home

Thank you for answering these questions about the rooms in your home. Because different people sometimes use different names to describe the same type of room, or use the same type of room for different purposes, I would like you to take me on a tour of the rooms in your home. *[IF APPLICABLE: Let's start on the top floor and work our way down.]*

	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R1	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R2	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

5

	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R3	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R4	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R5	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

6

	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R6	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R7	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R8	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

7

	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R9	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R10	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R11	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R12	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R13	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R14	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R15	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R16	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R17	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R18	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room
R19	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room
R20	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room

[INTERVIEWER: IS THIS HOUSE A SPLIT LEVEL?   □ Yes   □ No]

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I have a few final questions to ask you before I give you the $25 debit card to thank you for your time.

D1. Now that we've done the tour of your home, were there any rooms you realize that you didn't mention DURING THE INTERVIEW when I first asked you about the number of rooms in your home?	
1. ☐ Yes	3. ☐ Dk → SKIP TO D2
2. ☐ No → SKIP TO D2	4. ☐ Ref → SKIP TO D2
D1a. What room did you not mention previously?	
1. ☐ Bedroom	8. ☐ Recreation Room
2. ☐ Full Bathroom	9. ☐ Dens/Libraries
3. ☐ Half Bathroom	10. ☐ Laundry/Utility/Pantry
4. ☐ Kitchen	11. ☐ Other FINISHED Room
5. ☐ Dining Room	12. ☐ Other UNFINISHED Room
6. ☐ Living Room	13. ☐ Dk
7. ☐ Family Room/Great Room/ TV Room	14. ☐ Ref

D2. Were there any rooms you realize that you did mention IN THE INTERVIEW when I first asked you about the number of rooms in your home that you think should NOT have been included?	
1. ☐ Yes	3. ☐ Dk→ SKIP TO D3
2. ☐ No → SKIP TO D3	4. ☐ Ref→ SKIP TO D3
D2a. What room did you realize should NOT have been included?	
1. ☐ Bedroom	8. ☐ Recreation Room
2. ☐ Full Bathroom	9. ☐ Dens/Libraries
3. ☐ Half Bathroom	10. ☐ Laundry/Utility/Pantry
4. ☐ Kitchen	11. ☐ Other FINISHED Room
5. ☐ Dining Room	12. ☐ Other UNFINISHED Room
6. ☐ Living Room	13. ☐ Dk
7. ☐ Family Room/Great Room/ TV Room	14. ☐ Ref

D3. Have you done any remodeling or renovations in your home since May of 2013?	
[INTERVIEWER: DO NOT INCLUDE ANY EXTERIOR RENOVATIONS LIKE LANDSCAPING.]	
1. ☐ Yes	3. ☐ Dk → SKIP TO D4
2. ☐ No → SKIP TO D4	4. ☐ Ref → SKIP TO D4
D3a. IF YES: What kind of remodeling or renovations did you do? Did you...	
1. ☐ Build an addition onto your home	5. ☐ Something else _____
2. ☐ Tear down a wall separating two rooms	6. ☐ Dk
3. ☐ Convert a half bathroom into a full bathroom	7. ☐ Ref
4. ☐ Construct a wall separating one room into two rooms	

D4. You listed [Q14] bedrooms in your home. Have you always used those rooms as bedrooms?	
1. ☐ Yes → SKIP TO D5	3. ☐ Dk
2. ☐ No	4. ☐ Ref
D4a. How many of those bedrooms have you used for something else?	
_____	☐ Dk	☐ Ref

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D4b. What else have you used the [first/second/third/fourth] room for?			
First Room	**Second Room**	**Third Room**	**Fourth Room**
☐ Office	☐ Office	☐ Office	☐ Office
☐ Library	☐ Library	☐ Library	☐ Library
☐ Den/Study	☐ Den/Study	☐ Den/Study	☐ Den/Study
☐ Playroom/Gameroom	☐ Playroom/Gameroom	☐ Playroom/Gameroom	☐ Playroom/Gameroom
☐ Storage room	☐ Storage room	☐ Storage room	☐ Storage room
☐ Exercise room	☐ Exercise room	☐ Exercise room	☐ Exercise room
☐ Dressing room	☐ Dressing room	☐ Dressing room	☐ Dressing room
☐ Craft/Sewing room	☐ Craft/Sewing room	☐ Craft/Sewing room	☐ Craft/Sewing room
☐ Hobby room	☐ Hobby room	☐ Hobby room	☐ Hobby room
☐ Living room	☐ Living room	☐ Living room	☐ Living room
☐ Family room	☐ Family room	☐ Family room	☐ Family room
☐ Home theater	☐ Home theater	☐ Home theater	☐ Home theater
☐ Other _____	☐ Other _____	☐ Other _____	☐ Other _____
☐ Dk	☐ Dk	☐ Dk	☐ Dk
☐ Ref	☐ Ref	☐ Ref	☐ Ref

D5. If you were [selling/renting out] your home, how many bedrooms would you include in the listing for your home?		
_____	☐ Dk	☐ Ref

D6. Is there anything else you would like to tell us that you haven't gotten the chance to mention yet?

Thank you for participating in the American Housing Survey Field Test. As a token of our appreciation for your participation, we would like to give you a $25 debit card. Please sign this form stating that you received the $25 debit card. I WILL ALSO SIGN THE FORM CONFIRMING THAT I GAVE YOU THE CARD. [*INTERVIEWER HAND MONEY AND VOUCHER TO RESPONDENT*] Thank you for your time.

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Appendix C: Method 2 Questionnaire

AHS-42(B) (7-1-2014)   Control No. _____

AHS Field Test – Method 2

Demographic Questions
[INTERVIEWER: IF RESPONDENT CONSENTED, TURN ON AUDIO RECORDER NOW.]
Let's get started. I'm going to ask you some questions about the people who live here.
[INTERVIEWER: ADMINISTER QUESTIONS VERTICALLY. ASK FOR ALL THE NAMES OF HH MEMBERS, THEN THE SEX OF ALL HH MEMBERS, THEN THE AGE OF ALL HH MEMBERS, ETC.]

	Mark owner or renter	1. What are the names of all the people who live or stay here? Start with yourself… Who else is living or staying here?	2. *[IF NEEDED]* *[Are you/Is NAME] male or female?*	3. What is [your/NAME's] age?	4. *IF NOT RESPONDENT:* How is [NAME] related to you? 1. Spouse (husband/wife) 2. Unmarried Partner 3. Child 4. Grandchild 5. Parent (mother/father) 6. Sibling (brother/sister) 7. Other Relative (Aunt, Cousin, Nephew, Mother-in-law, etc.) 8. Foster Child 9. Housemate/Roommate 10. Roomer/Boarder 11. Other Non-relative 12. DK 13. Ref
1	☐		☐ M ☐ F	☐ dk ☐ ref	
2	☐		☐ M ☐ F	☐ dk ☐ ref	
3	☐		☐ M ☐ F	☐ dk ☐ ref	
4	☐		☐ M ☐ F	☐ dk ☐ ref	
5	☐		☐ M ☐ F	☐ dk ☐ ref	
6	☐		☐ M ☐ F	☐ dk ☐ ref	
7	☐		☐ M ☐ F	☐ dk ☐ ref	
8	☐		☐ M ☐ F	☐ dk ☐ ref	
9	☐		☐ M ☐ F	☐ dk ☐ ref	
10	☐		☐ M ☐ F	☐ dk ☐ ref	

5. Were all of these people living in this [house/apartment] since May of 2013?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

6. Is this [house/apartment] –	
[INTERVIEWER: READ CATEGORIES UNTIL A YES IS RECEIVED.]	
1. ☐ Owned?	4. ☐ Dk
2. ☐ Rented?	5. ☐ Ref
3. ☐ Occupied without payment of rent?	

7. In whose name is this home [owned/rented/occupied]?
[INTERVIEWER: MARK BOX NEXT TO OWNERS'/RENTERS' NAME ON HOUSEHOLD ROSTER.]

1

8. What is your best estimate of the total income your household received from all sources in the past 12 months?	
1. ☐ Less than $25,000	4. ☐ More than $100,000
2. ☐ $25,000 – $49,999	5. ☐ Dk
3. ☐ $50,000 – $100,000	6. ☐ Ref

9. The next few questions are just about you. Are you Spanish, Hispanic, or Latino?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

10. Please choose one or more races that you consider yourself to be.	
1. ☐ White	5. ☐ Native Hawaiian or Other Pacific Islander
2. ☐ Black or African American	6. ☐ Other; specify _____
3. ☐ American Indian or Alaska Native	7. ☐ Dk
4. ☐ Asian	8. ☐ Ref

11. What is the highest level of school you have completed or the highest degree you have received?	
1. ☐ Less than high school completed	6. ☐ Professional degree (e.g., JD, LLB, MD, DDS, DVM)
2. ☐ High school diploma or equivalent	7. ☐ Doctorate (e.g., PhD, DSc, EdD)
3. ☐ Some college, vocational, or trade school (including 2-year degrees)	8. ☐ Dk
4. ☐ Bachelor's degree (e.g., BS, BA, AB)	9. ☐ Ref
5. ☐ Master's degree (e.g., MS, MA, MBA)	

Unit Questions

The next questions are about your home.
[ASK FOR ALL UNITS EXCEPT APARTMENTS. APARTMENTS SKIP TO Q13.]

12. Is this house built...	
[INTERVIEWER: READ CATEGORIES UNTIL A "YES" REPLY IS RECEIVED]	
1. ☐ With a basement?	4. ☐ In some other way? (Specify) _____
2. ☐ With a crawl space?	5. ☐ Dk
3. ☐ On a concrete slab?	6. ☐ Ref

13. How many stories are there in this [*IF APARTMENT:* building / *IF NOT APARTMENT:* home], [*IF BASEMENT READ:* including the basement and any finished attics / *IF NO BASEMENT READ:* including finished attics]?		
[INTERVIEWER: IF SPLIT LEVEL, COUNT GREATEST NUMBER OF STORIES ON TOP OF EACH OTHER.]		
_____	☐ Dk	☐ Ref

IF HU IS A HOUSE AND Q13 > 1 OR DK OR RF, FOLLOW MULTI-FLOOR HOME INSTRUCTIONS OF Q14a. ELSE FOLLOW SINGLE FLOOR INSTRUCTIONS OF Q14a.

2

14a. The next few questions are about the number and kinds of rooms in your [house / apartment].
IF MULTI-FLOOR HOME: You reported that this [house / apartment] has [Q13] floors, so starting with the top floor, tell me all the rooms that are located on that floor. It may help if you try to picture yourself walking from room to room on that floor.
IF SINGLE-FLOOR HOME OR APARTMENT: Tell me all the rooms in your [house / apartment]. It may help if you try to picture yourself walking from room to room.
[INTERVIEWER: ASK FULL OR HALF BATHS, IF NECESSARY.]

Grid 1

Room Type	Top Floor	Floor __	Floor __	Floor __	Basement	Total
Bedroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Full bathroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Half Bathroom	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Kitchen	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Dining room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Living room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Family Room/Great Room/TV Room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Recreation Room	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Den/Office/Study	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Laundry/Utility/Pantry	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Other FINISHED room (specify)	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	
Other UNFINISHED room (specify)	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	□ Dk □ Ref	

3

14b. *[IF MORE THAN ONE FLOOR IN HOME READ: Before moving down to another floor,]* I want to make sure I have recorded your answers correctly. I have listed [READ TALLY OF EACH TYPE OF ROOM IN FLOOR X/BASEMENT]. Are there any other rooms on that floor?	
1. ☐ Yes *(FR ASK: "What are they?" "How many?" (CORRECT Floor X))*	3. ☐ Dk → *CONTINUE*
2. ☐ No → *CONTINUE*	4. ☐ Ref → *CONTINUE*

IF ONLY ONE FLOOR IN HOME, TALLY TOTAL NUMBER OF ROOMS AND SKIP TO Q16. IF MORE THAN ONE FLOOR IN HOME ASK:

15. What rooms are located on the next floor down? [IF NEEDED: Again, it may help if you picture yourself walking from room to room ON THAT FLOOR.]

INTERVIEWER INSTRUCTION:
  1. *RECORD ALL ROOMS ON NEXT FLOOR DOWN IN SECOND COLUMN OF TABLE.*
  2. *REPEAT QUESTIONS 14b AND 15 FOR EVERY FLOOR IN THE HOME.*
  3. *TALLY TOTAL NUMBER OF BEDROOMS AND DINING ROOMS FROM EACH FLOOR.*
  4. *CONTINUE TO Q16.*

IF DINING ROOM = 1 ASK:

16. You mentioned a dining room. We are interested in knowing whether or not that dining room is a SEPARATE room. For this survey, a separate dining room is separated from all other rooms by archways or walls extending at least six inches. Using this definition, does your dining room qualify as a separate dining room?	
1. ☐ Yes → *SKIP TO Q18*	3. ☐ Dk → *SKIP TO Q18*
2. ☐ No → *CORRECT DINING ROOM IN GRID1. THEN SKIP TO Q18*	4. ☐ Ref → *SKIP TO Q18*

IF DINING ROOM > 1 ASK:

17. You mentioned [TOTAL DINING ROOMS] dining rooms. We are interested in knowing whether or not those dining rooms are SEPARATE rooms. For this survey, a separate dining room is separated from all other rooms by archways or walls extending at least six inches. Using this definition, do all of your dining rooms qualify as separate dining rooms?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No → IF NEEDED: How many of them do not qualify as separate dining rooms? What floor [is that dining room/are those dining rooms] on that do not qualify as separate dining rooms? *CORRECT DINING ROOM IN GRID1. THEN CONTINUE TO Q18*	4. ☐ Ref

18. [INTERVIEWER: *IF NO BEDROOMS/KITCHENS/ONE OR LESS LIVING ROOMS REPORTED, ASK:]* Is this a one room efficiency or studio apartment?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No	4. ☐ Ref

STUDIO APARTMENTS: IF NO BATHROOM IS LISTED IN GRID 1, ASK Q19. ELSE SKIP TO Q20.
ALL OTHER UNITS: IF NO BEDROOM, KITCHEN, OR BATHROOM IS LISTED IN GRID 1, ASK Q19. ELSE SKIP TO Q20.

19. I want to be sure that I have correctly recorded all of the rooms information. My notes state that there is not a [bedroom/bathroom/kitchen] in this home. Is that correct?	
1. ☐ Yes	3. ☐ Dk
2. ☐ No – PROBE: Which do you have? Which do you not have? → *MAKE CORRECTIONS IN GRID 1. THEN CONTINUE TO Q20.*	4. ☐ Ref

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20. How many rooms, if any, are used EXCLUSIVELY for business space?		
_____	□ Dk	□ Ref

21. How many rooms, if any, are used both as business space and for personal use?		
_____	□ Dk	□ Ref

IF Q21 > 0

21a. In addition to using [it/them] as business space, what else [is it/are they] used for? MARK ALL THAT APPLY.	
1. □ Bedroom/Guest Room	5. □ Other (Specify) _____
2. □ Dining Room	6. □ Dk
3. □ Kitchen	7. □ Ref
4. □ Living Room	

22. Does the [house / apartment] have a porch, deck, balcony, or patio? [IF NEEDED: Measuring at least 4 feet by 4 feet]	
1. □ Yes	3. □ Dk
2. □ No	4. □ Ref

23. Is a garage or carport [either attached or detached] included with the [house / apartment]?	
1. □ Yes	3. □ Dk
2. □ No	4. □ Ref

[INTERVIEWER: TURN OFF AUDIO RECORDER NOW.]

5

Tour of the Home

Thank you for answering these questions about the rooms in your home. Because different people sometimes use different names to describe the same type of room, or use the same type of room for different purposes, I would like you to take me on a tour of the rooms in your home. *[IF APPLICABLE: Let's start on the top floor and work our way down.]*

	Respondent Room Type	**What floor is it located on?**	**HUD definition match**	**[If Not] HUD Alternative**
R1	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R2	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R3	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Not a room
R4	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Not a room
R5	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room ☐ Other UNFINISHED Room ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R6	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R7	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R8	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R9	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R10	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R11	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R12	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R13	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R14	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R15	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room
R16	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room
R17	□ Bedroom □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Ref	□ 1 □ 2 □ 3 □ 4 □ Basement	**HUD definition match** □ Yes □ No □ Couldn't Evaluate **Does it have an adequately sized window?** □ Yes □ No **Does it have a door?** □ Yes □ No	□ Bedroom (w/adequately sized window & door) □ Full Bathroom □ Half Bathroom □ Kitchen □ Separate Dining Room □ Living Room □ Family Room/Great Room/TV Room □ Recreation Room □ Den/Office/Study □ Laundry/Utility/Pantry □ Other FINISHED Room _____ □ Other UNFINISHED Room _____ □ Not a room

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	Respondent Room Type	What floor is it located on?	HUD definition match	[If Not] HUD Alternative
R18	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R19	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room
R20	☐ Bedroom ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Ref	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Basement	**HUD definition match** ☐ Yes ☐ No ☐ Couldn't Evaluate **Does it have an adequately sized window?** ☐ Yes ☐ No **Does it have a door?** ☐ Yes ☐ No	☐ Bedroom (w/adequately sized window & door) ☐ Full Bathroom ☐ Half Bathroom ☐ Kitchen ☐ Separate Dining Room ☐ Living Room ☐ Family Room/Great Room/TV Room ☐ Recreation Room ☐ Den/Office/Study ☐ Laundry/Utility/Pantry ☐ Other FINISHED Room _____ ☐ Other UNFINISHED Room _____ ☐ Not a room

[INTERVIEWER: IS THIS HOUSE A SPLIT LEVEL?   ☐ Yes   ☐ No]

12

<u>Debriefing Questions</u>

I have a few final questions to ask you before I give you the $25 debit card to thank you for your time.

D1. Now that we've done the tour of your home, were there any rooms you realize that you didn't mention DURING THE INTERVIEW when I first asked you about the number of rooms in your home?	
1. ☐ Yes	3. ☐ Dk → *SKIP TO D2*
2. ☐ No → *SKIP TO D2*	4. ☐ Ref → *SKIP TO D2*
D1a. What room did you not mention previously?	
1. ☐ Bedroom	8. ☐ Recreation Room
2. ☐ Full Bathroom	9. ☐ Dens/Libraries
3. ☐ Half Bathroom	10. ☐ Laundry/Utility/Pantry
4. ☐ Kitchen	11. ☐ Other FINISHED Room _____
5. ☐ Dining Room	12. ☐ Other UNFINISHED Room _____
6. ☐ Living Room	13. ☐ Dk
7. ☐ Family Room/Great Room/TV Room	14. ☐ Ref

D2. Were there any rooms you realize that you did mention IN THE INTERVIEW when I first asked you about the number of rooms in your home that you think should NOT have been included?	
1. ☐ Yes	3. ☐ Dk → *SKIP TO D3*
2. ☐ No → *SKIP TO D3*	4. ☐ Ref → *SKIP TO D3*
D2a. What room did you realize should NOT have been included?	
1. ☐ Bedroom	8. ☐ Recreation Room
2. ☐ Full Bathroom	9. ☐ Dens/Libraries
3. ☐ Half Bathroom	10. ☐ Laundry/Utility/Pantry
4. ☐ Kitchen	11. ☐ Other FINISHED Room _____
5. ☐ Dining Room	12. ☐ Other UNFINISHED Room _____
6. ☐ Living Room	13. ☐ Dk
7. ☐ Family Room/Great Room/TV Room	14. ☐ Ref

D3. Have you done any remodeling or renovations in your home since May of 2013?	
[INTERVIEWER: DO NOT INCLUDE ANY EXTERIOR RENOVATIONS LIKE LANDSCAPING.]	
1. ☐ Yes	3. ☐ Dk → *SKIP TO D4*
2. ☐ No → *SKIP TO D4*	4. ☐ Ref → *SKIP TO D4*
D3a. IF YES: What kind of remodeling or renovations did you do? Did you...	
1. ☐ Build an addition onto your home	5. ☐ Something else _____
2. ☐ Tear down a wall separating two rooms	6. ☐ Dk
3. ☐ Convert a half bathroom into a full bathroom	7. ☐ Ref
4. ☐ Construct a wall separating one room into two rooms	

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D4. You listed [ANSWER TO BEDROOM TOTAL IN GRID 1] bedrooms in your home. Have you always used those rooms as bedrooms?	
1. ☐ Yes → *SKIP TO D5*	3. ☐ Dk
2. ☐ No	4. ☐ Ref
D4a. How many of those bedrooms have you used for something else?	

	☐ Dk	☐ Ref
_____		

D4b. What else have you used the [first/second/third/fourth] room for?			
First Room	**Second Room**	**Third Room**	**Fourth Room**
☐ Office	☐ Office	☐ Office	☐ Office
☐ Library	☐ Library	☐ Library	☐ Library
☐ Den/Study	☐ Den/Study	☐ Den/Study	☐ Den/Study
☐ Playroom/Gameroom	☐ Playroom/Gameroom	☐ Playroom/Gameroom	☐ Playroom/Gameroom
☐ Storage room	☐ Storage room	☐ Storage room	☐ Storage room
☐ Exercise room	☐ Exercise room	☐ Exercise room	☐ Exercise room
☐ Dressing room	☐ Dressing room	☐ Dressing room	☐ Dressing room
☐ Craft/Sewing room	☐ Craft/Sewing room	☐ Craft/Sewing room	☐ Craft/Sewing room
☐ Hobby room	☐ Hobby room	☐ Hobby room	☐ Hobby room
☐ Living room	☐ Living room	☐ Living room	☐ Living room
☐ Family room	☐ Family room	☐ Family room	☐ Family room
☐ Home theater	☐ Home theater	☐ Home theater	☐ Home theater
☐ Other _____	☐ Other _____	☐ Other _____	☐ Other _____
☐ Dk	☐ Dk	☐ Dk	☐ Dk
☐ Ref	☐ Ref	☐ Ref	☐ Ref

D5. If you were [selling/renting out] your home, how many bedrooms would you include in the listing for your home?		
_____	☐ Dk	☐ Ref

D6. Is there anything else you would like to tell us that you haven't gotten the chance to mention yet?

Thank you for participating in the American Housing Survey Field Test. As a token of our appreciation for your participation, we would like to give you a $25 debit card. Please sign this form stating that you received the $25 debit card. I WILL ALSO SIGN THE FORM CONFIRMING THAT I GAVE YOU THE CARD. [INTERVIEWER HAND MONEY AND VOUCHER TO RESPONDENT] Thank you for your time.

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Appendix D: Control Card

CONTROL No. 1234	OMB No. 0607-0725: Expiration date 08/31/2016	FORM **AHS-41(CC)** (7-2-2014)	U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. CENSUS BUREAU

Introduction – Hello, I am _____ from the US Census Bureau. Here is my ID card. Did you receive the letter from our Director John Thompson? It explains the study we are conducting in Duval County. *[SHOW RESPONDENT LETTER]*

As part of this study, I would like to ask you some basic questions about the people and rooms in your home. Then I would like you to show me around the rooms in your home. It should take no more than 30 minutes. For quality assurance purposes, I'd like to record this interview. Once completed, I have a $25 debit card for you as a token of our appreciation. Can we get started? [IF YES] Will you please sign this consent form?

AMERICAN HOUSING SURVEY CONTROL CARD

Assurance of Confidentiality – Title 13, U.S.C., Section 9 requires that all information on this form be kept strictly confidential. This form is not to be shown to anyone under any circumstances. This form must be returned to your Census Bureau Regional Office along with its corresponding questionnaire after the data has been collected. Failure to abide by this law can result in a jail term, a fine, or both.

ADDRESS
910 Park Ave
Jacksonville, FL 12345

TELEPHONE NUMBER(S)
(111)-222-3333

NAME OF PREVIOUS RESPONDENT
John Smith

TYPE OF HOUSING UNIT
Single family, detached

CONTACT ATTEMPTS

	DATE	TIME	TYPE	INTERVIEW	NON-INTERVIEW	RELUCTANCE	STRATEGIES
1.			☐ PV ☐ T				
2.			☐ PV ☐ T				
3.			☐ PV ☐ T				
4.			☐ PV ☐ T				
5.			☐ PV ☐ T				
6.			☐ PV ☐ T				
7.			☐ PV ☐ T				

Notes:

I have reviewed the questionnaire for completeness. ☐ Yes ☐ No	I have given the debit card to the respondent. ☐ Yes ☐ No Card No.

FR's Name	FR's Code	Final Outcome of Case	Date of Interview / /

OUTCOME CODES

Interview		Non-interview		Reluctance (reason for non-interview)		Strategies	
INTERIM		**INTERIM**					
202	Partial – interview not completed (follow-up required)	P01	No Contact	R01	Not interested	S01	Advance letter given
204	Partial – tour needed (follow-up required)	P02	Contact but reluctant	R02	Too busy	S02	Scheduled appointment
206	Partial – other reason (follow-up required)	P03	Unable to reach (locked gate, buzzer)	R03	Interview takes too much time	S03	Left appointment card/ left voice message
				R04	Scheduling difficulties	S07	Waited for respondent
FINAL		**FINAL**		R06	Privacy concerns	S08	Checked with neighbors
201	Completed case – interview and tour completed	213	Language problem	R07	Local/State/Federal government concerns	S09	Contacted other family members
203	Partial interview (No follow-up)	214	Unable to locate address	R10	Hostile or threatens FR	S10	Contacted property manager/doorman
		216	Type A – No one home (unable to contact)	R11	Family issues (death, illness, block participation in survey)	S98	No Strategies
		217	Type A – Temporarily absent	R12	Gave that information last time	S99	Other – *Specify*
		218	Type A – Respondent refusal	R14	Too many interviews		
		219	Type A – Other – *Specify*	R98	No concerns		
		226	Type B – Vacant, regular	R99	Other – *Specify*		
		233	Type B – Other				
		240	Type C – Demolished				
		248	Type C – Other				

Notes:

United States™
Census
Bureau

Consent Form

American Housing Survey

Each year the Census Bureau conducts many different surveys. The Census Bureau routinely tests the questions used on these surveys in order to produce the best information possible.

_____[NAME] consents to take part in a study to improve the questions that will be used in the American Housing Survey. The interview consists of approximately 15 minutes of survey questions followed by a tour of the home. In order to have a complete record of all comments, the interview session will be audiorecorded. The Census Bureau plans to use the tapes to improve the questionnaire. Staff directly involved in the questionnaire design research project will have access to the recordings. Participation is voluntary and answers will remain strictly confidential.

We are conducting this follow-up study under the authority of Title 13 USC. Title 13, U.S.C., Section 9, requires us to keep all information about you and your household strictly confidential. The OMB control number for this study is 0607-0725. This valid approval number legally certifies this information collection.

I have agreed to participate in this Census Bureau questionnaire design study, and I give permission for my tapes to be used for the purposes stated above.

_____   _____
Participant's Signature   Researcher's Signature

_____   _____
Printed Name   Printed Name

_____   _____
Date   Date

Appendix F: Advance Letter

AHS-40(L)(Atlanta)
(6-2014)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001

OFFICE OF THE DIRECTOR

Dear Resident:

I am writing to ask for your help with an important study that the U.S. Census Bureau is conducting to help improve the quality of the American Housing Survey. The American Housing Survey provides vital information about the types of homes in the United States and the characteristics of these homes. We are contacting a small number of households in the Jacksonville, Florida metropolitan area to ask for help with this one-time only evaluation of the number and types of rooms in people's homes. As a token of our appreciation, we are offering a $25 debit card to those households who participate in our study. A Census Bureau interviewer will contact you to ask you questions about the rooms in your home. He or she will show you an official identification card to confirm employment with the Census Bureau.

The Census Bureau needs your help to collect accurate data in this special study so that policymakers can better assess current government programs and plan for the future. Because we are only reaching out to a very small number of households, your household's cooperation in this study will provide a distinct service to our country. Your participation is voluntary, but your household plays an essential role in shaping the future of the American Housing Survey.

We are conducting this follow-up study under the authority of Title 13 United States Code (U.S.C.). Title 13, U.S.C., Section 9, requires us to keep all information about you and your household strictly confidential. We will use this information for statistical purposes only. Each Census Bureau employee from the Director to the Census interviewer has taken an oath to abide by this law and is subject to a jail term, a fine, or both if he or she discloses any information that could identify you or your household.

We have included answers to the most frequently asked questions about this study on the reverse side of this letter. If you would like further information, please contact the Census Bureau by writing or calling the office below.

REGIONAL DIRECTOR
US CENSUS BUREAU
101 MARIETTA ST NW STE 3200
ATLANTA GA 30303-2711

Telephone: 1-800-424-6974
Email: atlanta.regional.office@census.gov.

Thank you for your participation.

Sincerely,

John H. Thompson
Director

Enclosure

census.gov

WHAT IS THE AMERICAN HOUSING SURVEY?

The American Housing Survey (AHS) provides up-to-date information on the size and composition of the housing inventory. As the population increases, so does the demand for housing. There is a great need for information about the types of homes in which people are now living and the characteristics of these homes. Information from the survey helps to measure the changes in our housing supply resulting from losses and new construction. It measures the structural makeup of the housing and characteristics of the occupants. The information also helps to evaluate the effects of proposals on tax reform and assistance programs.

WHY ARE YOU CONTACTING ME AGAIN? I ALREADY PARTICIPATED.

Although we pride ourselves on the high quality data we collect in our survey programs, there is always room for improvement. With each passing year, there are new and improved ways to conduct the important work we undertake here at the Census Bureau. In this case, we have been asked by our sponsoring agency, the Department of Housing and Urban Development (HUD), to explore some different ways to ask some of the survey questions. The Census interviewer will be conducting only a small section of the AHS questionnaire and asking to take a brief inventory of the rooms in your household. We anticipate that this short interview should only take 30 minutes. You may decline to answer any or all questions, but each item not answered lessens the quality of the final results.

IS THIS SURVEY AUTHORIZED BY LAW? WHAT PROTECTION DO I HAVE?

HUD sponsors the survey under the authority of Title 12, United States Code (U.S.C.), Section 1701z–1, 1701z–2(g), and 1701z–10a. The U.S. Census Bureau performs the work under the authority of Title 13, United States Code, Section 8. All information that individuals give to the Census Bureau is held in the strictest confidence by law (Title 13, U.S.C., Section 9). An agency cannot conduct, sponsor, or require a response to a collection of information unless the collection displays a currently valid Office of Management and Budget (OMB) approval number. The OMB approval number for this survey is 0607–0725 and the expiration date is August 31, 2016. If you have any comments or suggestions about this survey, please send them to the Associate Director for Administration, Paperwork Reduction Project 0607–0725, Bureau of the Census, 4600 Silver Hill Road, Washington, DC 20233–1500 or Paperwork@census.gov.

I THOUGHT THAT THE CENSUS BUREAU OPERATED ONLY EVERY TEN YEARS WHEN IT COUNTED PEOPLE. WHAT IS THE CENSUS BUREAU DOING NOW?

Besides the decennial census conducted every ten years, we collect many different kinds of statistics through other censuses and surveys. We conduct other censuses at regular intervals, including the Economic Census and the Census of Governments. In addition, we conduct various surveys to collect data on a monthly basis in order to provide current information on unemployment rates, retail and wholesale trade, various manufacturing activities, new housing construction, and a number of other topics. Also, we conduct annual surveys on business, manufacturing, governments, family income, health, and education. You may also encounter the Census Bureau conducting collections on behalf of other agencies.

Appendix G: Refusal Conversion Letter

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001

August 3, 2011   06010894021 F04 01

XXXX XXXXX
xx Xxxxx Drive
Huntsville, AL 35802

Dear Mr. XXXXX:

A U.S. Census Bureau Field Representative recently contacted you and asked you to participate in a follow-up survey for *the American Housing Survey*. The Field Representative who contacted you informed me that you did not wish to participate due to the "room tour" module of the survey. I understand your reluctance and hope that further explanation of this component will enlist your cooperation.

This address was contacted in 2013 and the respondents were gracious enough to complete the survey. If that was you, thank you for your assistance. We would appreciate your continued cooperation for this study. The primary purpose of this test is to determine how best to present certain critical questions on the form so that they can provide a consistent and ongoing series of information on the size and composition of our Nation's housing. One important component of the survey is the room tour. The Department of Housing and Urban Development (HUD) has deemed this component so critical that they have agreed to give a $25 debit card to all households that participate. The actual tour of the dwelling can be done at your convenience and is needed to ensure we capture the most accurate data possible. All information will be held in strict confidence and will be used only by persons engaged in and for the purpose of the survey.

Participation in this survey is voluntary and there are no penalties for refusing to answer any particular question. However, in allowing this room tour you will be making a valuable contribution to the overall state of the Nation's housing. In the future, when you see or hear housing statistics, you will know that you helped in the preparation of these figures. I trust that we can rely on you to help. I have asked our representative to call on you again within the next few weeks.   If you have any questions about this survey you may call me at 1-800-424-6974 x53929. We will be pleased to talk with you.

Sincerely,

Crystal Boyett
Program Manager

United States Census Bureau

Appendix H: Voucher Form

Standard Form 1034 September 1973 Treasury FRM 2000	PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL		VOUCHER NO.
U.S. DEPARTMENT, BUREAU OR ESTABLISHMENT AND LOCATION	DATE VOUCHER PREPARED	SCHEDULE NO.	
U.S. Department of Commerce Bureau of the Census Washington, DC 20233-9100	CONTRACT NUMBER AND DATE REQ. NUMBER AND DATE	PAID BY	

PLEASE PRINT NAME & ADDRESS BELOW:	DATE INVOICE RECEIVED
PAYEE'S NAME AND ADDRESS	DISCOUNT TERMS
	PAYEE'S ACCOUNT NUMBER
SHIPPED FROM TO WEIGHT	GOVERNMENT B/L NUMBER

NUMBER AND DATE OF ORDER	DATE OF DELIVERY OR SERVICE	ARTICLES OR SERVICES *(Enter description, item number of contract or Federal supply schedule, and other information deemed necessary)*	QUANTITY	UNIT PRICE		AMOUNT
				COST	PER	
		For participating in field test to improve the U.S. Census. Center for Survey Measurement Received by:_____ Date:				$25.00

(Use continuation sheet(s) if necessary)   (Payee must NOT use the space below)
TOTAL

PAYMENT: ☐ COMPLETE ☐ PARTIAL ☐ FINAL ☐ PROGRESS ☐ ADVANCE	APPROVED FOR $25.00	EXCHANGE RATE = $1.00	DIFFERENCES	
	BY:			
	TITLE:		Amount verified correct for	$25.00
			(Signature or initials)	

Pursuant to authority vested in me, I certify that this voucher is correct and proper for payment

_____   _____   _____
(Date)   (Authorized Certifying Officer)   (Title)

ACCOUNTING CLASSIFICATION

Project/Task: 0959000; Organizational Code: 11-09-0098-00-00-00-00; Obj. Class: 25-20-04-00

CHECK NUMBER ON TREASURER OF THE UNITED STATES	CHECK NUMBER ON (Name of Bank)
CASH DATE	PAYEE
PER	TITLE

Appendix I: Field Representative Debriefing Questionnaire
American Housing Survey Field Test Debriefing – Field Representatives – Questionnaire

Now that the American Housing Survey (AHS) Field Test is over, the Census Bureau would like to get your feedback on what did or did not work so we can make improvements in the future. Your answers to this questionnaire will not impact your performance evaluations, and will not be shared with your supervisors. Your answers will only be used to improve the AHS questionnaire. Please complete the questionnaire and mail it to:

US Census Bureau
4600 Silver Hill Road
Suitland, MD 20746
Attn: Jasmine Luck
Room 5K022D

Thank you for your feedback!

1) Upon completing your AHS Field Test training, how well did you understand the purpose of the AHS Field Test?
   o I *completely* understood the purpose of the AHS Field Test
   o I *somewhat* understood the purpose of the AHS Field Test
   o I *did NOT* understand the purpose of the AHS Field Test

2) Upon completing your AHS Field Test training, how well did you understand what was expected of you as a field representative (FR) working on the AHS Field Test?
   o I *completely* understood what the expectations were of me
   o I *somewhat* understood what the expectations were of me
   o I *did NOT* understand what the expectations were of me

3) How helpful were the different parts of your AHS Field Test training in preparing you to administer the two questionnaires and do the tour of the home? *Please mark your answer in the appropriate column for each type of training.*

	Did **NOT** help prepare you **AT ALL**	Helped to prepare you **SOMEWHAT**	Helped to prepare you **A LOT**
a. Self-study			
b. In person training			

c. Observations with Headquarters (HQ)/Regional Office(RO) staff			

4) For a self-study in a future study, what should we keep the same and what should we do differently?

_____
_____
_____

5) For in person training in a future study, what should we keep the same and what should we do differently?

_____
_____
_____

6) For observations with HQ and Regional Office staff in a future study, what should we keep the same and what should we do differently? If you weren't observed on this study, please check here: Not observed □

_____
_____
_____

7) How would you evaluate respondents' understanding of the questions in each questionnaire?

Questionnaire 1:
- o Good
- o Fair
- o Poor

Questionnaire 2:
- o Good
- o Fair
- o Poor

8) How often did respondents ask for clarifications on any questions in each questionnaire?

Questionnaire 1:
o   Never
o   Almost never
o   Now and then
o   Often
o   Very often

Questionnaire 2:
o   Never
o   Almost never
o   Now and then
o   Often
o   Very often

9) When you were asking respondents the survey questions (before the tour of the home), did you ever help the respondent decide whether a room should be counted, or how it should be counted?
o   No
o   Yes
    If Yes, Describe:

_____
_____
_____

10) How difficult was it to follow the skip instructions in each questionnaire?

Questionnaire 1:
o   Extremely difficult
o   Very difficult
o   Moderately difficult
o   Somewhat difficult
o   Not at all difficult

Questionnaire 2:
o   Extremely difficult
o   Very difficult
o   Moderately difficult
o   Somewhat difficult
o   Not at all difficult

11) Were you always able to follow the skip patterns in the questionnaires? If not, please describe the circumstances when you did not follow the skip patterns.

_____
_____
_____

12) How often were respondents reluctant to answer any questions in each questionnaire?

Questionnaire 1:
- o Never
- o Almost never
- o Now and then
- o Often
- o Very often

Questionnaire 2:
- o Never
- o Almost never
- o Now and then
- o Often
- o Very often

13) Were there any questions you found awkward or difficult to ask in either questionnaire?
- o No
- o Yes

If Yes, Specify:

_____
_____
_____

14) Which rooms did you have difficulty counting **on the tour of the home**? Select all that apply.
- □ None
- □ Bedroom
- □ Bathroom
- □ Dining room
- □ Kitchen
- □ Living room
- □ Family room/great room/TV room
- □ Recreation room
- □ Den/library
- □ Laundry/utility/pantry

Please explain any boxes you checked:

_____
_____
_____

15) Which room counting method do you think is more difficult **for respondents to answer**?
   o   Questionnaire 1 (Room-by-room method)
   o   Questionnaire 2 (Floor-by-floor method)
   o   There was no difference in the difficulty of the two methods

16) Why do you think this method posed difficulties for respondents?

   _____
   _____
   _____

17) Which room counting method did you find more difficult to **ask as an interviewer**?
   o   Questionnaire 1 (Room-by-room method)
   o   Questionnaire 2 (Floor-by-floor method)
   o   There was no difference in the difficulty of the two methods

18) Why did you find this method more difficult?

   _____
   _____
   _____
   _____
   _____

19) Which room counting method would you prefer be used in the 2015 American Housing Survey?
   o   Questionnaire 1 (Room-by-room method)
   o   Questionnaire 2 (Floor-by-floor method)
   o   No preference

20) What is your FR code? (*Your answers to this questionnaire will not be shared with your supervisors and will not impact your performance evaluations. This information will be used for timekeeping purposes to account for the time you spent completing this questionnaire.*)

   _____

21) How could the questions in the American Housing Survey Field Test be improved?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

22) Please describe any difficulties you experienced while conducting the tour of the home.

_____
_____
_____
_____
_____
_____
_____
_____
_____

23) Was there anything the Census Bureau could have done to make your job easier?

_____
_____
_____
_____
_____
_____
_____
_____

24) If you have any additional comments, please write them below. If you run out of space, you can attach an additional page.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

American Housing Survey Field Test Debriefing – Field Supervisors Questionnaire

Now that the American Housing Survey (AHS) Field Test is over, the Census Bureau would like to get your feedback on what did or did not work so we can make improvements in the future. Your answers will only be used to improve the AHS questionnaire. Please complete the questionnaire and mail it to:

US Census Bureau
4600 Silver Hill Road
Suitland, MD 20746
Attn: Jasmine Luck
Room 5K022D

Thank you for your feedback!

1) After attending the AHS Field Test training, how well did you understand the purpose of the AHS Field Test?
   o I *completely* understood the purpose of the AHS Field Test
   o I *somewhat* understood the purpose of the AHS Field Test
   o I *did NOT* understand the purpose of the AHS Field Test

2) After attending the AHS Field Test training, how well did you understand what was expected of you as a field supervisor (FS) working on the AHS Field Test?
   o I *completely* understood what was expected of me
   o I *somewhat* understood what was expected of me
   o I *did NOT* understand what was expected of me

3) After completing the training, how would you evaluate the **experienced** field representatives' (FRs') understanding of the survey?
   o Good
   o Fair
   o Poor

4) After completing the training, how would you evaluate the **inexperienced** FRs' understanding of the survey?
   o Good
   o Fair
   o Poor

5) For in person training in a future study, what should we keep the same and what should we do differently?

_____
_____
_____

6) During data collection, some FRs were reassigned to other surveys because of the number of unusable cases they were generating. In your opinion, why did some FRs have more usable cases than other FRs? Please be as specific as possible.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

7) To your knowledge, did the FRs with more usable cases perform better on any other surveys they may have been working on than those FRs with more *unusable* cases? In other words, was there a correlation between FR performance on the AHS Field Test and their performance on other surveys?

_____
_____
_____
_____
_____
_____
_____

8) When FRs were confused about how to administer the questionnaire in certain housing units, they may have asked you as their FS for guidance on what to do. Which rooms did FRs seem to have difficulty counting **on the tour of the home**? Select all that apply.
   □ None
   □ Bedroom
   □ Bathroom
   □ Dining room
   □ Kitchen
   □ Living room
   □ Family room/great room/TV room
   □ Recreation room
   □ Den/library
   □ Laundry/utility/pantry
   Please explain any boxes you checked:

_____
_____
_____
_____

9) Aside from confusion regarding skip patterns or how to count certain rooms on the tour of the home, what other questions did FRs ask you?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

10) How could the questions in the American Housing Survey Field Test be improved?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

11) Which room counting method do you think is more difficult for interviewers to administer, the room-by-room method or the floor-by-floor method?
   o Room-by-room method (Method 1)
   o Floor-by-floor method (Method 2)
   o There was no difference in the difficulty of the two methods → skip to question 13

12) Why do you think this method posed difficulties for interviewers?

   _____
   _____
   _____
   _____
   _____

13) Which room counting method would you prefer be used in the 2015 American Housing Survey, the room-by-room method or the floor-by-floor method?
   o Room-by-room method (Method 1)
   o Floor-by-floor method (Method 2)
   o No preference

14) How easy or difficult was it to manage the sample caseload in this survey?
   o Very difficult
   o Somewhat difficult
   o Somewhat easy
   o Very easy

15) Was there anything the Census Bureau could have done to make your job easier?

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

16) If you have any additional comments, please write them below:

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

_____
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_____

Appendix K: Behavior Coding Training Manual (Excerpt)

7. Coding

Each question has a set of behaviors for both the interviewer and the respondent. Here is an example question from Method 1.

Figure 10

The first line has the question text and an answer box for recording the respondent's answer, if it's given. The first set of dropdowns has to do with Interviewer Behavior. The second set of dropdowns has to do with the behavior of the respondent. The last box is for any notes for that particular question.

7.1 Question Answer

The question text for the questions we will be coding will be provided, and will have a text box or drop down in order to input answers (As shown in Figure 11). If a question has answer choices, then select one of the choices. If it is a fill in the blank type question, fill in the answer that R gave, as you perceive it. If a question was skipped when it should have been (See Section 9 for the questionnaires in order to see how the skips should work), then choose or write in Skipped Appropriately (SA). Choose or write in Intentionally Blank (IB) if a question was not skipped appropriately, so the respondent was unable to give their answer. If you are unable to tell what the respondent's answer is, you can chose to write in IB, or choose to write in what the FR potentially answered.

7.2 First Level Interviewer Behavior

Coding interviewer behavior is very important for determining if interviewers are reading questions correctly. If interviewers change the wording on a particular question, it usually indicates that the question is worded poorly. (See code explanations on the next page for more information).

REMEMBER: The basic rule of coding the first exchange is that you code all behaviors that occur before the other person says anything at all. Since the interviewer begins the interaction by asking a question, they can only have one speaking turn before the respondent, and all of what they say in that first turn should be represented here. You should choose a code that best describes what the interviewer says before the respondent replies.

FR First level interaction		
ER	Exact reading or slight change	No notes
MC	Major change	Select a 'Major Change Type' code in the next dropdown and in the "Major Change Notes" record how they administered the question
AV	Appropriate verification	No notes
IV	Inappropriate verification	No notes
SQ	Skips question that should be asked	No notes
AQ	Asks question that should be skipped	No notes
IN	Inaudible or Other	No notes
IB	Intentionally blank	No notes

Exact Reading or Slight Change (ER)
- When the interviewer reads the question exactly as written, or reads the question with slight word changes THAT DO NOT ALTER THE MEANING OF THE QUESTION
- The interviewer adds transitional words or contractions (weren't, can't etc.)
- The interviewer stumbles and re-reads the question correctly as worded
- The interviewer is interrupted by the respondent and finishes the question exactly as worded anyways
- Notes are not required to accompany this code

Major Change (MC)
- When the interviewer asks the question with major changes to the wording THAT CAN ALTER THE INTENDED MEANING OF THE QUESTION or if the interviewer omits key words and phrases (dates, introductions, etc.)
- The interviewer paraphrases a question or the interviewer does not finish reading a question, or does not go back to finish reading the question when interrupted by the respondent
- The interviewer does not read all of the answer categories as instructed
- The interviewer adds information to either the question or the answer categories (regardless of whether the information is correct)
- An MCT (Major Change Type) code must be selected in the 'Mjor change type' dropdown when this code is used, and the wording that the FR used to ask the question needs to be recorded in "Major Change Notes" box

Appropriate Verification (AV)
- The interviewer correctly verifies information that was previously provided by the respondent
- This code does not indicate that the information the interviewer verified was correct, but instead shows that the interviewer's process and wording for the verification was correct
- Notes are not required to accompany this code

Inappropriate Verification (IV)
- If an interviewer verifies information that they were never told (i.e., assuming an entire household is the same race, or assuming the sex of a respondent) then use this code
- When an interviewer verifies info that is incorrect and the respondent must correct them, use this code
- Notes are not required to accompany this code

Skips question that should be asked (SQ)
- The interviewer does not follow the skip pattern correctly and skips a question that should have been asked
- Notes are not required to accompany this code

FR asks question that should be skipped (AQ)
- The interviewer does not follow the skip pattern correctly and asks a question that should have been skipped
- Notes are not required to accompany this code

Inaudible (IN)
- When it is nearly impossible to determine what is being said by the interviewer
- If audio-recording problems have affected your ability to understand the interaction
- No notes are required to accompany this code

Intentionally blank (IB)
- If a question is skipped appropriately, then the FR First level interaction code should be IB for intentionally left blank.

Major change type		
AT	FR adds text	Type EXACTLY what the interviewer ADDED
OT	FR omits text	Type EXACTLY what the interviewer OMITTED
IF	Incorrect fill	Type EXACTLY what the interviewer said AS THE FILL
RT	FR replaces text	Type EXACTLY what the interviewer SHOULD HAVE SAID and what that text was REPLACED WITH
WM	FR administered wrong method	No notes
SM	FR switched method	Note where the method switch happened/what room types were brought up during the method switch
IB	Intentionally blank	Write/select 'IB'

FR adds text (AT)
- FR adds phrases not in the original question text
- Type out EXACTLY what the interviewer added in the "Behavior coding notes" textbox

FR omits text (OT)
- FR omits text with content that was in the original question
- Type out EXACTLY what the interviewer omitted in the "Behavior coding notes" textbox

Incorrect fill (IF)
- If the FR reads a fill incorrectly (i.e. reads the wrong fill text), use this code
- Type out EXACTLY what the interviewer said as the fill in the "Behavior coding notes" textbox

FR replaces text (RT)
- If FR replaces the question text with different text, use this code.
- Type out EXACTLY what text the interviewer replaced, and what they said in the "Behavior coding notes" textbox

FR administered wrong method (WM)
- If an interviewer administers the wrong method, i.e. administers Method 1 for Method 2 and probes for every room type, then select this code

FR switched method (SM)
- If an interviewer switches methods at any point while collecting the rooms information, i.e. administers Method 2 correctly until they probe for additional room types, then select this code
- Note when FR makes this switch.

Intentionally blank (IB)
- Select this code if there were no major changes made while administering the question, or if the question was not administered.
- In the 'major change notes' dropdown, write in or select "IB"

7.3 Global Interviewer Behavior

These codes are behaviors expressed by the interviewer that aren't necessarily at the first or last level. If any of these behaviors take place during a question, then mark yes

FR Negative affect		
Y	Yes	No notes
N	No	No notes
IB	Intentionally blank	No notes

Yes (Y)
- Use this code if the FR displayed negative affect. Negative affect would entail an FR expressing verbal frustration with a question or apologizing for the content or format of a question to the R

No (N)
- Use this code if the FR did not display negative affect.

Intentionally blank (IB)
- Use this code if the question was skipped

FR Miscount		
ER	FR recorded a room that R did not mention	Type the room that was miscounted in the "Behavior Coding Notes" box
MR	FR missed a room that R mentioned	Type the room that was miscounted in the "Behavior Coding Notes" box
B	Both	Type the rooms that were miscounted in the "Behavior Coding Notes" box
N	Neither	No notes
IB	Intentionally blank	No notes

FR recorded a room that R did not mention (ER)
- Use this code if the FR miscounted the number of rooms by recording a room that the R did not mention.
- Type the room that was miscounted in the "Behavior Coding Notes" box

FR missed a room that R mentioned (MR)
- Use this code if the FR miscounted the number of rooms by not recording a room that the R did mention.
- Type the room that was miscounted in the "Behavior Coding Notes" box

Both (B)
- Use this code if the FR miscounted the number of rooms by both recording a room that the R did not mention as well as not recording a room that the R did mention.
- Type the rooms that were miscounted in the "Behavior Coding Notes" box

Neither (N)
- Use this code if the FR did not miscount in either direction
- No notes required

Intentionally blank (IB)
- Use this code if the question was skipped
- No notes required

Slow Down		
Y	Yes	No notes

N	No	No notes
IB	Intentionally blank	No notes

Yes (Y)
- Use this code if the FR asked the R to slow down at any point during their interaction for this question

No (N)
- Use this code if the FR did not ask the R slow down at any point during their interaction for this question

Intentionally blank (IB)
- Use this code if the question was skipped.

Probing		
NP	Neutral probe	No notes
NN	Non-neutral probe	No notes
B	Both	No notes
NE	Neither	No notes
IB	Intentionally skipped	No notes

Neutral probe (NP)
  • Use this code if the FR uses an appropriate probe at any point during their interaction for this question to encourage the respondent to provide a codeable response. By "appropriate," we mean a probe that does not "lead" the respondent to provide a particular answer.
  • For example, if the FR asks the respondent if their dining room qualifies as a separate dining room and the respondent says, "There's an archway that sticks out six inches," and the FR said, "So would you yes or no?" You would mark "yes," neutral probe, because the FR used a probe to encourage the respondent to provide a codeable response without inappropriately suggesting the answer to the question.

Non-neutral probe (NN)
  • Use this code if the FR uses an inappropriate probe at any point during their interaction for this question to encourage the respondent to provide a codeable response. By "inappropriate," we mean a probe that "leads" the respondent to provide a particular answer.
  • For example, if the FR asks the respondent if their dining room qualifies as a separate dining room, and the respondent says, "I don't know," you would mark "yes" to non-neutral probe if the FR then said, "So would you say yes?" In this case, the FR was "Leading" the respondent by suggesting an answer rather than remaining neutral while probing.

Both (B)
  • Use this code if the FR uses both a neutral and a non-neutral probe at any point during their interaction with the respondent for this question.

Neither (NE)
  • Use this code if the FR uses neither a neutral nor a non-neutral probe at any point during their interaction with the respondent for this question.

Intentionally blank (IB)
  • Use this code if the question is skipped.

7.4 Respondent First Response Behavior

REMEMBER: for this project, we are coding the respondent's FIRST and FINAL behavior. The basic rule for coding the respondent's first behavior is that you want to choose a code that best represents what the respondent's initial answer is.

Sometimes the respondent may give an answer that is not a response option, and the interviewer will have to probe the respondent to give another answer before they can move onto the next question – in this circumstance you only code what the respondent said before the interviewer began speaking again.

R First level interaction		
CA	Codeable Answer	No notes
UA	Un-codeable Answer	No notes
CR	Clarification or reread requested	No notes
DK	Don't Know	No notes
RF	Refusal	No notes
IN	Inaudible	No notes
IB	Intentionally blank	No notes

Codeable Answer (CA)
- A codeable answer is one that matches one of the pre-coded response categories, even when the respondent provides much more information than is necessary to answer the question this code still applies as long as at some point in their turn to speak they choose an answer that is in the response categories
- When an interviewer verifies prior information and the respondent agrees with the verification, that is also a codeable answer
- Even if an interviewer misreads a question, the respondents response can be coded as codeable
- No notes are required to accompany this code

Un-codeable Answer (UA)
- If a respondents answer does not fit into the pre-coded answer categories, use this code
- If a respondent gives multiple answers and only one answer can be entered, then this code can also be used
- When a respondent gives an answer that cannot fit into a pre-coded response category, such as answering 'yes' or 'no' to a question that requires a definite answer
- If a respondent gives an un-codeable answer, and the interviewer probes them to give a codeable answer, still use this code to show that the first answer the respondent gave was un-codeable (the fact that a codeable answer was eventually given by the respondent will be recorded in Final Outcome)
- If it seems the respondent is answering the question for the wrong time period, use this code (i.e. A respondent answers "Not right now" for a question referring to April 2010)

Clarification or Reread Requested (CR)
- Whenever the respondent answers the question with a question, use this code
- If the respondent asks the interviewer to re-read the question, or asks for clarification about what the question means, use this code

Don't Know (DK)
- Whenever a respondent answers 'I don't know' use this code
- No notes are required to accompany this code

Refusal (RF)
- Whenever the respondent refuses to answer a question, use this code
- If the respondent cannot and does not provide an answer because they think the question does not apply to them
- No notes are required to accompany this code

Inaudible (IN)
- When it is nearly impossible to determine what is being said by the respondent
- If audio-recording problems have affected your ability to understand the interaction
- No notes are required to accompany this code

Intentionally blank
- Use this code if the question is skipped

Interruption		
Y	Yes	Type the last words the FR read before the R interrupted
N	No	No Notes
IB	Intentionally blank	No notes

Yes (Y)
- If a respondent interrupts the interviewer while they are asking a question, code "Interruption" as "yes"
- If this code is selected, please write out the last word(s) that the interviewer said BEFORE the respondent broke in and interrupted in the box titles "Behavior Coding Notes"

No (N)
- Use this code if the R does not interrupt the FR when the FR is initially reading the question

Intentionally blank (IB)
- Use this code if the question is not skipped

7.5 Global Respondent Behavior

R Negative Affect		
Y	Yes	No Notes
N	No	No Notes
IB	Intentionally blank	No notes

Yes (Y)
- Use this code if the R displayed negative affect. Negative affect would entail an R expressing verbal frustrating with a question

No (N)
- Use this code if the R did not display negative affect.

Intentionally blank (IB)
- Use this code if the question is not skipped

R Miscount		
AR	R added a new room not previously mentioned	Type the room that was miscounted in the "Behavior Coding Notes" box

RR	R removed a room previously mentioned	Type the room that was miscounted in the "Behavior Coding Notes" box
B	Both	Type the rooms that were miscounted in the "Behavior Coding Notes" box
N	Neither	No notes
IB	Intentionally blank	No notes

R added a room not previously mentioned (AR)
- Use this code if the R added a room that was not previously mentioned when the FR was verifying the count of rooms
- Type the room that was miscounted in the "Behavior Coding Notes" box

R removed a room previously mentioned (RR)
- Use this code if the R removed a room that was previously mentioned when the FR was verifying the count of
- Type the room that was miscounted in the "Behavior Coding Notes" box

Both (B)
- Use this code if the R added a room not previously mentioned and removed a room that was previously mentioned when the FR was verifying the count of rooms
- Type the rooms that were miscounted in the "Behavior Coding Notes" box

Neither (N)
- Use this code if the R neither adds nor removes a room at any point during their interaction with the FR for this question.

Intentionally blank (IB)
- Use this code if the question is skipped.

R Clarification		
Y	Yes	No Notes
N	No	No Notes
IB	Intentionally blank	No notes

Yes (Y)
- Use this code if the R asked for clarification on the question, certain terms, or asked the FR to repeat the question at any point during the interaction at this question OTHER than the respondent's first level response

No (N)
- Use this code if the R did not asked for clarification on the question, certain terms, or ask the FR to repeat the question at any point during the interaction at this question

Intentionally blank (IB)
- Use this code if the question is skipped.

7.6 Respondent Final Response Behavior

R Final Behavior		
CA	Codeable Answer	No notes
UA	Un-codeable Answer	No notes
DK	Don't Know	No notes
RF	Refusal	No notes

| IN | Inaudible or Other | No notes |
| IB | Intentionally blank | No notes |

Codeable Answer (CA)
- A codeable answer is one that matches one of the pre-coded response categories, even when the respondent provides much more information than is necessary to answer the question this code still applies as long as at some point in their turn to speak they choose an answer that is in the response categories
- When an interviewer verifies prior information and the respondent agrees with the verification, that is also a codeable answer
- Even if an interviewer misreads a question, the respondents response can be coded as codeable
- No notes are required to accompany this code

Un-codeable Answer (UA)
- If a respondents answer does not fit into the pre-coded answer categories, use this code
- If a respondent gives multiple answers and only one answer can be entered, then this code can also be used
- When a respondent gives an answer that cannot fit into a pre-coded response category, such as answering 'yes' or 'no' to a question that requires a definite answer
- If a respondent gives an un-codeable answer, and the interviewer probes them to give a codeable answer, still use this code to show that the first answer the respondent gave was un-codeable (the fact that a codeable answer was eventually given by the respondent will be recorded in Final Outcome)
- If it seems the respondent is answering the question for the wrong time period, use this code (i.e. A respondent answers "Not right now" for a question referring to April 2010)

Don't Know (DK)
- Whenever a respondent answers 'I don't know' use this code
- No notes are required to accompany this code

Refusal (RF)
- Whenever the respondent refuses to answer a question, use this code
- If the respondent cannot and does not provide an answer because they think the question does not apply to them
- No notes are required to accompany this code

Inaudible (IN)
- When it is nearly impossible to determine what is being said by the respondent
- If audio-recording problems have affected your ability to understand the interaction
- No notes are required to accompany this code

Intentionally blank (IB)
- Use this code if the question is skipped.

If it any point in coding these questions, you find that you are unsure of applying a certain code, then use the Microsoft Excel document "Behavior Coding Problems Spreadsheet." It is used by all behavior coders on this project in order to ask for help and come to a consensus on certain issues, so someone may have already asked and resolved a question that you have. If you don't see your question there, add it.

Appendix L: Data Summary
Table 18. Data Matches by Usability[27]

		Usable						Unusable						Overall					
		M1	N	M2	N	Diff	Sig	M1	N	M2	N	Diff	Sig	M1	N	M2	N	Diff	Sig
Bedrooms	Questionnaire matches public records	79%	85	75%	67	4%		65%	75	77%	93	-12%	+	73%	160	76%	160	-4%	
	Questionnaire matches 2013 AHS data	91%	89	92%	74	-1%		91%	81	82%	107	9%	+	91%	170	86%	181	5%	
	Questionnaire matches tour of the home data	81%	83	86%	73	-6%		84%	74	85%	98	-1%		82%	157	85%	171	-3%	
	Questionnaire matches debriefing (for sale) question	99%	85	93%	74	6%	+	92%	77	93%	106	-1%		96%	162	93%	180	2%	
	Tour of the home data matches debriefing (for sale) question	80%	81	82%	73	-2%		79%	72	87%	98	-8%		80%	153	85%	171	-5%	
	Questionnaire matches AHS 13 data & tour of the home data	73%	83	79%	73	-6%		77%	74	72%	98	5%		75%	157	75%	171	0%	
	Questionnaire matches public records & tour of the home data	63%	79	65%	66	-2%		54%	68	65%	84	-11%	+	59%	147	65%	150	-6%	
	Questionnaire matches 2013 data, tour of the home data, & public records	59%	79	65%	66	-6%		53%	68	61%	84	-8%	+	56%	147	63%	150	-6%	
	Tour of the home matches public records	65%	79	67%	66	-2%		60%	68	69%	84	-9%		63%	147	68%	150	-5%	
Dining Rooms	Questionnaire matches tour of the home data	83%	87	92%	74	-9%		92%	79	89%	106	4%		87%	166	90%	180	-3%	
	Tour of the home data matches 2013 AHS data	62%	87	64%	74	-1%		71%	79	59%	106	11%		66%	166	61%	180	5%	
	Questionnaire matches 2013 AHS data	61%	89	58%	74	3%		75%	81	60%	107	16%	**	68%	170	59%	181	9%	
	Questionnaire matches 2013 data & tour of the home data	53%	87	57%	74	-4%		70%	79	54%	106	16%	**	61%	166	55%	180	6%	
Total Rooms	Questionnaire matches AHS 2013 data	49%	89	47%	74	2%		62%	81	50%	107	12%		55%	170	49%	181	7%	
	Questionnaire matches tour of the home data	71%	83	74%	73	-3%		77%	73	68%	98	8%		74%	156	71%	171	3%	
	2013 AHS data matches tour of the home data	49%	83	55%	73	-5%		55%	73	45%	98	10%		52%	156	49%	171	3%	
	Questionnaire matches AHS 2013 data & tour of the home data	39%	83	41%	73	-3%		51%	73	38%	98	13%		44%	156	39%	171	5%	
	Total Cases		89		74				81		107				197		208		

* p<.01, **p < .05, +p<.1

Table 19. Data Matches by Unit Type

		Multi unit/Single Family Attached Usable Cases						Single Family Detached Usable Cases					
		M1	N	M2	N	Diff	Sig	M1	N	M2	N	Diff	Sig
Bedrooms	Questionnaire matches public records	70%	23	44%	18	25%		82%	62	86%	49	-3%	
	Questionnaire matches 2013 AHS data	89%	27	91%	23	-2%		92%	62	92%	51	0%	
	Questionnaire matches tour of the home data	77%	26	87%	23	-10%		82%	57	86%	50	-4%	
	Questionnaire matches debriefing (for sale) question	100%	26	96%	23	4%		98%	59	92%	51	6%	
	Tour of the home data matches debriefing (for sale) question	80%	25	83%	23	-3%		80%	56	82%	50	-2%	
	Questionnaire matches AHS 13 data & tour of the home data	65%	26	78%	23	-13%		77%	57	80%	50	-3%	
	Questionnaire matches public records & tour of the home data	50%	22	39%	18	11%		68%	57	75%	48	-7%	
	Questionnaire matches 2013 data, tour of the home data, & public records	45%	22	39%	18	7%		65%	57	75%	48	-10%	
	Tour of the home matches public records	50%	22	44%	18	6%		70%	57	75%	48	-5%	
Dining Rooms	Questionnaire matches tour of the home data	85%	27	91%	23	-6%		82%	60	92%	51	-10%	
	Tour of the home data matches 2013 AHS data	70%	27	52%	23	18%		58%	60	69%	51	-10%	
	Questionnaire matches 2013 AHS data	56%	27	43%	23	12%		63%	62	65%	51	-2%	
	Questionnaire matches 2013 data & tour of the home data	56%	27	43%	23	12%		52%	60	63%	51	-11%	
Total Rooms	Questionnaire matches AHS 2013 data	48%	27	39%	23	9%		50%	62	51%	51	-1%	
	Questionnaire matches tour of the home data	77%	26	78%	23	-1%		68%	57	72%	50	-4%	
	2013 AHS data matches tour of the home data	50%	26	52%	23	-2%		49%	57	56%	50	-7%	
	Questionnaire matches AHS 13 data & tour of the home data	42%	26	35%	23	8%		37%	57	44%	50	-7%	
	Total Cases		27		23				62		51		

* p<.01, **p < .05, +p<.1

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[27] Note that there were 54 cases (27 Method 1 and 27 Method 2 completes or partials) for which the tape was blank or for which there was no tape. These 54 cases could not be evaluated for usability, and as such are excluded from the analysis above, including the "overall" analysis.

Table 20. Data Matches by Tenure

		Owned Usable Cases						Rented Usable Cases					
		M1	N	M2	N	Diff	Sig	M1	N	M2	N	Diff	Sig
Bedrooms	Questionnaire matches public records	80%	51	82%	39	-2%		76%	33	64%	28	11%	
	Questionnaire matches 2013 AHS data	92%	51	88%	40	5%		89%	36	97%	34	-8%	
	Questionnaire matches tour of the home data	78%	46	80%	40	-2%		83%	35	94%	33	-11%	
	Questionnaire matches debriefing (for sale) question	100%	48	90%	40	10%	**	97%	35	97%	34	0%	
	Tour of the home data matches debriefing (for sale) question	78%	45	75%	40	3%		82%	34	91%	33	-9%	
	Questionnaire matches AHS 13 data & tour of the home data	74%	46	70%	40	4%		71%	35	91%	33	-19%	+
	Questionnaire matches public records & tour of the home data	65%	46	67%	39	-1%		59%	32	63%	27	-4%	
	Questionnaire matches 2013 data, tour of the home data, & public records	63%	46	67%	39	-4%		53%	32	63%	27	-10%	
	Tour of the home matches public records	67%	46	67%	39	1%		59%	32	67%	27	-7%	
Dining Rooms	Questionnaire matches tour of the home data	80%	49	95%	40	-15%	+	89%	36	88%	34	1%	
	Tour of the home data matches 2013 AHS data	57%	49	60%	40	-3%		69%	36	68%	34	2%	
	Questionnaire matches 2013 AHS data	65%	51	60%	40	5%		58%	36	56%	34	2%	
	Questionnaire matches 2013 data & tour of the home data	51%	49	58%	40	-6%		58%	36	56%	34	2%	
Total Rooms	Questionnaire matches AHS 2013 data	49%	51	40%	40	9%		53%	36	56%	34	-3%	
	Questionnaire matches tour of the home data	65%	46	70%	40	-5%		80%	35	79%	33	1%	
	2013 AHS data matches tour of the home data	50%	46	48%	40	3%		49%	35	64%	33	-15%	
	Questionnaire matches AHS 13 data & tour of the home data	37%	46	35%	40	2%		43%	35	48%	33	-6%	
Total Cases			51		40				36		34		

* p<.01, **p < .05, +p<.1

Table 21. Data Matches by Household Composition

		Method 1						Method 2					
		Same HH	N	Diff HH	N	Diff	Sig	Same HH	N	Diff HH	N	Diff	Sig
Bedrooms	Questionnaire matches 2013 AHS data	98%	50	82%	39	16%		91%	35	92%	39	-1%	
Dining Rooms	Questionnaire matches 2013 AHS data	52%	50	72%	39	-20%		60%	35	56%	39	4%	
Total Rooms	Questionnaire matches 2013 AHS data	52%	50	46%	39	6%		46%	35	49%	39	-3%	
Total Cases			50		39				35		39		

* p<.01, **p < .05, +p<.1

Table 22. Data Matches with Qualifying Dens Counted as Bedrooms

	Qualifying Dens Counted as Bedrooms						Qualifying Dens Not Counted as Bedrooms					
Count of bedrooms in questionnaire matches tour of the home	M1	N	M2	N	Diff	Sig	M1	N	M2	N	Diff	Sig
Non-usable cases	78%	74	80%	98	-1%		84%	74	85%	98	-1%	
Usable cases	77%	83	82%	73	-5%		81%	83	86%	73	-6%	
Overall cases	78%	157	81%	171	-3%		82%	157	85%	171	-3%	
Multi unit/single family attached housing units˘	77%	26	78%	23	-1%		77%	26	87%	23	-10%	
Single family detached housing units˘	77%	57	84%	50	-7%		82%	57	86%	50	-4%	
Owned housing units˘	74%	46	75%	40	-1%		78%	46	80%	40	-2%	
Rented housing units˘	80%	35	91%	33	-11%		83%	35	94%	33	-11%	

˘usable cases

* p<.01, **p < .05, +p<.1

Appendix M: Room Definitions

Bedrooms
Include rooms that are:
- Reserved only for sleeping, even if used infrequently (i.e., guest room used only by visitors).
- Used mainly for sleeping.

- Meant to be bedrooms even though may not be used for that purpose (i.e., room built as a bedroom but now used mainly for storage, watching TV, sewing, etc.).
- Probe: How many bedrooms would your residence be advertised as having if it were for sale or rent?

Exclude rooms that are:
- Built and used ONLY for other purposes (i.e., storage, watching TV, sewing, computer, etc.)
- Built and used mainly for other purposes (i.e., room with a sleep sofa but used mainly for watching TV, sewing, computer, etc.)

Dining Rooms
A SEPARATE dining room must be in an area separated from an adjoining room by archways or walls that-
- Are built-in
- Extend at least 6 inches from an intersecting wall.

Note that if these two criteria are met, the wall does NOT have to run floor to ceiling (i.e. bookcases would count if built-in.)

Full Bathrooms
A full bathroom is one that has a sink with running water, a toilet, and either a bathtub or shower. All of the facilities must be in the same room or built to be used together (i.e. a master bath suite in which the toilet is in a separate closed off area) to be a full bathroom. How many full bathrooms do you have in your home? [Include bathrooms in finished attics or finished basements.]

Half Bathrooms
A half-bathroom is one that has either a toilet or a bathtub or a shower. How many half bathrooms do you have? [Include bathrooms in finished attics or finished basements.]

Business space
A room used for business space is a room, or area within a room, regularly used for earning income, i.e., for a business owner, contract worker, self-employed person, commercial use (such as paid day care, making crafts for sale, catering, investment brokerage, etc.) or regularly scheduled work for a regular job. Exclude office areas set up for personal household use.

Basement
A basement is an enclosed space, at least partially underground, in which persons can walk upright under all or part of the building. Consider a floor to be a basement if at least half of the area is below ground level, either from floor to ceiling or from back to front of the area. "HOUSE" refers to living space only, i.e., basement does not need to be under garage/carport to count as "ALL".
The basement can be finished and intended for living by the household, or the basement can be unfinished and may be only four walls containing the furnace or other equipment. The basement is under all the building if it is under the entire main structure, excluding garages, carports and porches.

Crawl Space
A house is built with a crawl space if there is a space between the ground and the first floor of the house, but it is not high enough for a person to walk upright. It may be enclosed or exposed to the elements.

Concrete Slab
A house is built on a concrete slab if it is built on cement that has been poured on the ground.

House Foundations - Other
This category is for a house built on stilts or pilings (for example, beach houses), and any other situation not covered by the choices "basement," "crawl space," or "concrete slab."

Garages and carports
For this question, the garage or carport must be on the same property but DOES NOT have to be attached to the house. The space can be assigned or available on a first-come, first-park basis.

Porches, balconies, decks, patios
The porch, deck, balcony, or patio must be attached to the unit--not simply to the building. Exclude porches, etc., that are not attached to the sample unit or are free standing. Porches may be enclosed or open. The porch, deck, balcony, or patio must measure at least four feet by four feet.