

## THE MYTH OF THE MAN UNDER THE BED

Leslie A. Brownrigg and Peter Wobus  
U.S. Bureau of the Census, Washington, DC 20233-3600

**KEY WORDS:** Undercount, minority men, complex household, single person household

This paper summarizes patterns of omissions and erroneous enumerations in the census coverage resulting from two mechanisms of coverage error affecting the whole household or affecting individuals within household. (See Brownrigg and Wobus 1993.)

Demographic analysis profiles the population not included in the census: The net undercount of males is greater than for females (3.48 million males; 1.20 million females in 1990). The net undercount rate for Blacks is greater than for non-Blacks. The net undercount is high for certain sex/race/age groups such as Black males of ages 25-54 (Ahmed 1991; Robinson et. al 1991:18). Black males are the race/sex group with the highest net undercounts in the 1950, 1960, 1970, 1980 decennial censuses. Adult Black men experienced higher net undercounts than Black females, or non-Black males or females in the past 5 censuses (Robinson 1988). The 1990 PES estimated that males of Hispanic origin (of any race) had a slightly higher net undercount than Black men, and American Indians men experienced net undercoverage almost as high as Black men. (Hogan 1991, 1992; Robinson et al 1991). The profile of the undercounted from demographic analysis and the PES imply that more minority adult men are omitted than are erroneously enumerated.

Hypotheses to explain why adult minority men are differentially undercounted have focused on why they might be omitted. The hypothesis we call the "myth of the man under the bed" holds that millions of minority men "missing" from census and survey coverage do not want to be found, that the men are intentionally not revealed by respondents for ulterior reasons, and so are omitted within households. Possible reasons for why respondents might deliberate conceal the "man under the bed" have been elaborated (Pritzker and Rothwell 1967; Hainer, Hines, Martin and Shapiro 1988; Shapiro, Diffendal and Cantor 1993; cf. Fetterman 1981).

We chose to analyze a population of coverage errors to find out how people were missed in what household context by their demographic characteristics, mindful that there are two principal components of population census coverage error—omission and erroneous enumeration, people left off versus people tacked on. (See Diffendal 1985; Boone 1987; Griffin and Moriarity 1992.)

We analyzed the interplay of omission and erroneous enumeration by characteristics of individuals and households, ranking ratios, testing probabilities and applying the CAT MOD technique of log linear analysis. The population was drawn from the ethnographic sample. The ethnographic sample consists of records from the 1990 Census and from Alternative Enumerations of the population and housing conducted in 29 sample areas coded by the enumeration status of each record. The ethnographic sample was purposefully situated in low income, predominantly minority neighborhoods that fit the "hard-to-enumerate" profile (Bruce 1987; Alho et al 1992 and see Denton and Massey 1988), and where undercounts were expected but did not always occur (Brownrigg and de la Puente 1992a). Social and cultural local factors impacting the census at each site are described in a series of separate coverage reports and analyses (Brownrigg and de la Puente 1992a, 1992b among others).

We selected records of persons from the Alternative Enumerations which were verified as omitted from the census count and those census records identified as erroneously enumerated in the ethnographic sample. We classified the mechanisms through which the coverage error had occurred: whether affecting the whole household or affecting individuals within household which were partially enumerated. (See Brownrigg and de la Puente 1992.)

In the Ethnographic Sample, as in the Post Enumeration Survey (Childers 1992), more people were omitted by the mechanism of missing whole households than were omitted within households. More erroneous enumerations occurred through the whole household miss, and omissions led erroneous enumerations, thus producing most of the net

undercount through errors involving the whole household.

Records of persons were partitioned into six race/ethnic groups: Non-Hispanics by 5 races and Hispanics of any race.

Comparing proportions omitted through whole household misses versus within households within each race/ethnic group, differential patterns emerged. Non-Hispanic Blacks experienced the highest proportion of the omitted population missed in whole household misses in the ethnographic sample: 77.94 percent. For Whites, 70 percent of omissions were of whole households; for other races, 68 percent; for American Indians, 63 percent and for Asians, 51 percent. Among omitted Hispanics of any race 57 percent were missed in whole households rather than within households. Charts 1 illustrates patterns of omissions for six race/ethnic groups by the mechanism of the miss: whole household versus within household.

Globally, more erroneous enumerations affected whole households than were produced within household. Selecting only those erroneous enumerations that did not involve housing units located outside sample areas, the whole household mechanism of incorrect inclusions remains important for all race/ethnic groups. Non-Hispanic Whites emerge as most likely to be erroneously enumerated ("overcounted") by duplicating or incorrectly including a whole household: 92.78 percent of the non-Hispanic Whites erroneously included in the census were in whole households compared to 80 percent of the Hispanics and 73 percent of the Blacks.

These patterns in the ethnographic sample concur with findings nationwide. Dan Childers (1993) estimated from the Housing Unit Coverage Study and the Post Enumeration Survey data that an estimated 31.9 percent of the people who did not move between the Census Day and the PES were missed within while "45.0 percent were (missed) in whole households where the housing unit (address) matched, and 23.1 percent were in whole households where the housing unit was omitted" (:2). This is equivalent to a total of 68.1 percent "whole household" errors.

Rates of the proportion in each enumeration status by the whole household or within household mechanism are similar for females and males. However, the rate of gross omission is higher for males, resulting in

their undercount.

Errors by the whole households Why does coverage error affecting the whole household contribute to the net undercount of males more than to the undercount of females? One answer lies in household size and composition. Ranking of household types subject to omission corresponds to household size. The leading type of household omitted when a whole household is missed is the single person household containing one person. Next follows the married couple household where only two people are present. Next the single parent household which consists of two or more persons. Next, the nuclear family household with children which, by definition, consists of 3 more persons. Persons in roommate households which by definition contain at least 2 housemates, have a nearly equal chance of being omitted within household as through whole household misses.

This ranking supports the common sense: the census is more likely to fail to enumerate whole households in which there are fewer persons available to contact than to miss entirely households where more people reside. A similar ranking of the household types for erroneous enumeration is the opposite. The multigenerational household (with 3 or more persons) through the mechanism of missing individuals within these households is the leading source of erroneous enumerations among household types. This observation suggests a theory: the smaller the household, the more likely all persons in the whole household are to be missed. The larger the household, the more likely it is to produce some erroneous enumerations.

One reason why so many of the men in the predominantly minority sample areas were missed is that they were living alone: they were the only person at home. Ten percent of all the households omitted were single person households and 60 percent of those had male householders. Persons in single person households were 8 times more likely to be omitted from the census than to be correctly enumerated. Selecting omitted adults age 18 or older, partitioned by sex and into the 6 race/ethnic categories, records of whole household omissions were classified by single person household versus all other household sizes and types. Black (non-Hispanic) adults were compared by gender to find that 32 percent of the Black men but 20.56 of the adult Black women omitted in whole household

misses were living in single person households rather than in a multiperson households, and, about 40% more Black adult men than Black women so omitted were living in single person households.

As of 1992, an estimated 9.6 million men age 15 or older were living alone and 14.4 million women (US Census Bureau 1992 P20-468, Table 7, page 46-47); 2.9 million of the men living alone are Black, 444 thousand are Hispanic. More men lived alone beginning in younger age (25-29) groups, the same age groups found to be differentially undercounted. (By contrast, women living alone were concentrated in older age groups, 45 to 85+).

The proportion of single person households (that is, one person, living alone) of all households rose from less than 5 percent in the early 70's to about 26 percent of all households in the United States by the time of the last census (Lugaila 1992). This suggests that the net undercount may have increased between 1980 and 1990 through the mechanism of missing the single person households because of the steady rise in the numbers and proportions of single person households.

For adult Hispanics, the influence of missing single person households on the net undercount is less pronounced. In the ethnographic sample, a lower proportion of adult Hispanic men in single person households (about 15 percent) were omitted in whole household misses than were omitted in multiperson households compared to either Black adult men or Black women.

Chart 2 shows proportions omitted for each relationship through the whole household versus the within household misses using only the population omitted from the census in ethnographic sample areas. The highest rates of omission are for "P1" (the first person listed, in whose name the housing unit is owned or leased) and for people who have a close social relationship to the P1 as P1's spouse, child, brother or sister, house mate or room mate or unmarried partner. This is consistent with the higher rates of omission through the whole household miss mechanism (compared to within household misses). If a whole household is missed, logically, the P1 and all others living there are missed (Jones and Blass 1975).

Contrasts between relationship type among adults subject to coverage error within household single out

different 4 "tenuous" relationships to the householder which experience similar patterns of coverage error slanted more towards omission than erroneous enumeration : roommate, boarder, non-relatives or brother or sister. Proportionately more persons who are not in close, primary relationships to P1 were missed within household than were omitted when whole households were left out of the census. Minor grandchildren, step children (if considered separately from P1's sons or daughters), parents, grandparents, other relatives, boarders/roomers and other types of non-relatives all have higher rates of omission within household compared to omissions in whole households.

People omitted from the census within households where others were enumerated are less likely to be a wife or husband, unmarried partner, minor child of the householder, sister or brother, or roommate, than they are to be a boarder or roomer, mother or father, grandmother or grandfather, some other relative or a non-relative. The P1 or "householder" is almost as likely to be omitted as erroneously enumerated within household, however 2.7 of the householder's spouse (husband or wife) were omitted within household for every erroneously included spouse. The only other type of relationship beside the "householder" (P1) with nearly equal odds of being either erroneously enumerated or omitted within households are minor grandchildren. Minor grandchildren are also only relationship category slightly more prone to erroneous inclusion than omission.

#### Boarders, other relatives and non-relatives

Previous analysis of Hispanics in the ethnographic sample documented the high rates of gross omission and net undercount of Hispanic males who are boarders, roommates, "other non-relatives" or other relatives (de la Puente 1992). Boarders, roomers, other relatives and other non-relatives are relationship categories which experience higher within household coverage error than whole household coverage error. Within households, people in these relationships are more likely to be omitted than erroneously included. Boarders were estimated with a 0.5038 probability of errors. Boarders, other relatives and other non-relatives are found in different types of households attached to all male roommates, married couples, intact nuclear families, single mother families and three generation households; these relationships are not significantly associated with any definable type of household. In the ethnographic sample, persons in one of these relationships was more often an Hispanic

male than of any other sex/race/ethnic group.

In multigenerational households, where there are (by definition) as least 3 persons (one of each of 3 generations present) the rate of omission is higher within household than the rate of omission affecting everyone in these larger households. Looking at those coverage errors which occurred through the "within household" mechanism, we found that the leading type of household where both omissions and errors occurred were those with 3 generations present. The presence of either a grandparent or grandchild identifies the multigenerational household because the concept of "generation" is based on kinship relationships, rather than age cohorts.

#### Conclusions:

In the myth, the missing man is "hiding under the bed" of his partner. Analysis of the ethnographic sample finds the "minority man" most likely to be omitted from the census is the householder. He is more likely to be omitted when his whole household is missed. One reason why more adult Black men were missed when whole households were omitted is that many live alone. For Hispanic men, it is more difficult to point to one type of household where coverage errors occur. Immigrant Hispanic men live together or are attached as boarders, roomers, other relatives, or other non-relatives to many kinds of households and families.

In contrast to the one person household that produces omissions, (through the whole household mechanism), the leading type of household producing within household error is conclusively the larger, more complex three generational household. Households with three or more generations present produce significantly more coverage errors of both omissions and erroneous enumerations than any other type of household, and produce significantly more omissions than erroneously enumerations in the census records of the ethnographic sample. Households where representatives of three generations of one family are present are more common among several minority race/ethnic communities, either through traditions or economic necessity. (For Black mothers, see Hogan, Hao and Parish 1990:803).

Complex households can be usefully defined as those with 3 or more related generations present.

These results suggest three recommendations to address the differential undercount.

- 1) Develop methods which will reduce the rates at which housing units and whole households are missed.
- 2) Reach people, especially minority males, who are living alone or as boarders in the households of others.
- 3) Educate members of the larger, "complex" multigenerational households to include everyone who counts the household as their home.

It is important to abandon the myth of the man under the bed in order to move forward and improve coverage.

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CHART 1

### Whole and Within Household Proportion Missed

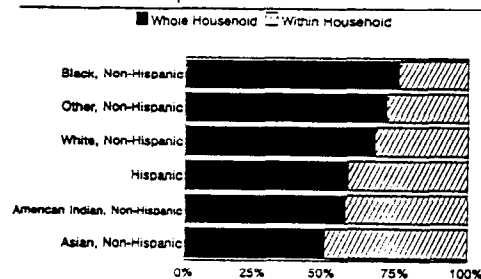


CHART 2

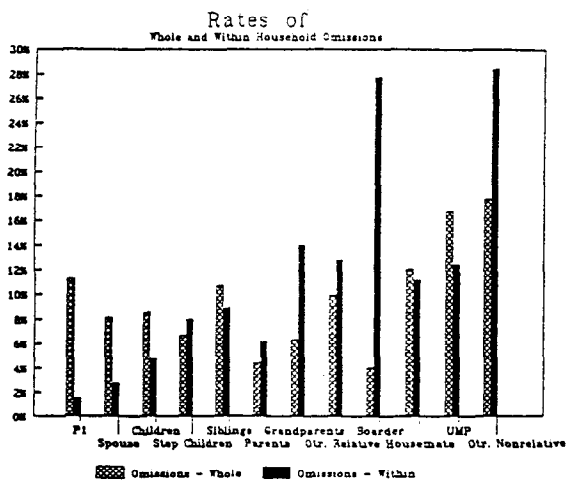


Table 1 Omissions for Relationship/Age Group by Within and Whole Household Misses, in the Ethnographic Sample

	Within Household	Whole Household	Total	N
P1	11.8	88.2	100	383
Spouse/UMP	29.5	70.5	100	166
P1 minor child	37.4	62.6	100	433
Adult parent	44.4	55.6	100	9
Adult sibling	47.1	52.9	100	34
Adult roommate	48.9	51.1	100	45
Unknown	53.0	47	100	115
Other adult relative	60.0	40	100	75
Other minor	62.5	37.5	100	56
Adult non-relative	74.2	25.8	100	97
Minor grandchild	75.5	24.5	100	49
			T =	1462

Chi Square 245.936 Probability 0.0000

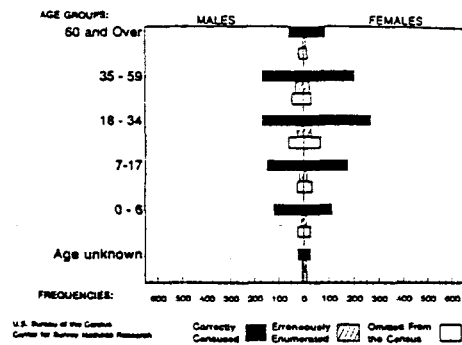
Frequency of records not classified for this analysis: 0

Table 2 Census Omissions Within Households for Race/Ethnic Group by Sex Ranked by Proportions Male in the Ethnographic Sample

RACE/ETHNIC GROUP	Males	Females	Total	N
Hispanic (any race)	67.67%	32.33%	100%	232
Non-Hispanics:				
White	64.10%	35.90%	100	39
Unknown race	60.94%	39.06%	100	20
Black	58.62%	41.38%	100	87
Asian	51.67%	48.33%	100	60
American Indian	51.35%	48.65%	100	37
			ST =	475

Chi Square: 10.423/ Probability: 0.064 /Frequency of additional records of persons omitted within household which are uncoded on either race/ethnic or sex or both: ST = 73; Total omissions within household = 548

Black Non Hispanics Age-Sex Populations Correctly Censused, Erroneously Enumerated and Omitted from the Census



Hispanics Age-Sex Populations Correctly Censused, Erroneously Enumerated and Omitted from the Census

