

USING UNOBTRUSIVE OBSERVATION TO ASSESS STREET ENUMERATION IN THE 1990 CENSUS

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Introduction

On the night of March 20-21, 1990, the Bureau of the Census conducted a special two-phase "Shelter and Street-Night" (S-Night) operation in which enumerators counted people in emergency shelters, street locations, and other places not intended for habitation, for the purpose of including homeless people in the census (see Taeuber and Siegel, 1991, for a description of S-Night). Street enumeration took place from 2 to 4 a.m., March 21. For the street phase, enumerators were to interview all people visible and awake, who were not in uniform or engaged in obvious money-making activities, in preidentified nighttime street sites and all-night places of commerce. No screening question was asked to determine if a person had a usual home, or was homeless. Sleeping persons were not to be wakened for an interview, but they were to be counted and their age, race, and sex estimated by observation. The sites--city parks, areas under bridges, bus and train stations, hospital emergency rooms, and other locations where homeless people were thought to stay at night--had been identified prior to the census by local governmental units, police, groups working with homeless persons, and Census Bureau district office personnel.

The 1990 census was the first census in which the Census Bureau attempted systematically to include street homeless people in the census, and the S-Night procedures were developed especially for that purpose. Therefore, the Census Bureau sponsored an assessment to determine how well enumeration procedures were implemented and followed by enumerators at street sites, and to identify external factors that influenced the street enumeration. The method of the assessment, which relies upon reports of unobtrusive observers, has never before been used by the Census Bureau as a method to assess census operations. Since both street enumeration and the method used to assess it are new (street enumeration procedures were implemented for the first time in the 1988 census dress rehearsal in St. Louis), both sources of data must be carefully and critically examined in order to assess the S-Night street enumeration, and the quality of counts resulting from it.

Researchers in 5 cities placed teams of 60 in-place-observers (120 in New York) at a sample of street sites which had been designated for S-Night enumeration. The cities of Chicago, Los Angeles, New Orleans, New York and Phoenix were chosen purposively to represent different regions and weather conditions, and to include the 2 cities believed to have the largest homeless populations (New York and Los Angeles). Researchers were given standard instructions for selecting a systematic random sample of all pre-identified commerce and street sites in their study areas, using records prepared by the local Census Bureau district office to make enumerator assignments to the sites. In all cities but New Orleans, the study area

represents only part of a city, so the assessment results cannot be generalized beyond the specific areas covered.²

Based on guidelines provided by the Census Bureau, observers were trained in census enumeration procedures and how to conduct themselves on site. The observers were instructed to stay in the open to enable census enumerators to see and enumerate them. For the most part, they were dressed like homeless people. They were to observe whether enumerators came to the sites, and if so, when they arrived, how long they stayed, and how they conducted the enumeration. Observers also were to report whether they were interviewed or believed they were counted by observation. Observers recorded their observations on questionnaires which were filled out immediately after the street phase was finished. Each observer also filled out an Individual Census Report form "as you believe the enumerator filled it out for you." District office personnel matched these dummy forms against the census forms to remove census forms for observers who were enumerated.

In order to ensure that census and observer results refer to the same sites, Census Bureau staff matched geographic information from the official census lists of street and commerce sites in the 5 study areas against geographic descriptions of sites from researchers' lists and observer questionnaires. Since a key assessment variable is whether or not census enumerators were observed at the site, it was essential to determine that observers were stationed at the sites the Census Bureau intended to enumerate. Ultimately, 16 out of 156 observer sites could not be matched to the census. In 3 cases, observers went to wrong addresses, and most of the others could not be matched because site descriptions in the census sources were vague, without specific addresses or site descriptions. The 16 unmatched sites are excluded from analysis, leaving 140 sites. (For more details about matching see Martin 1992.)

Official Census Results for Matched Sites

Official census counts were returned for 130 of the 140 sample sites, with a total of 1,803 people counted, as shown in Table 1. Ten sites, all in Los Angeles or Phoenix, were eliminated at some stage in the census process and final counts were not processed through the official census count. Five of these sites had nonzero population counts recorded on the master address list, which implies they were enumerated and the results were processed before being deleted. The effect of deleting these sites was to reduce by 22 percent the count for the Los Angeles sample sites; the effect in Phoenix was negligible. The 10 deleted sites are excluded from the rest of the analysis.

As shown in Table 1, the number of people counted in the sample sites varies from 23 in the Chicago study area to 1,318 in New York. Part of this variability occurs because the New York study area covers 4 Census Bureau District Office areas, while each of the other study areas covers just one district. In addition, there are unknown variations among the areas in the size of the street population which potentially might be enumerated, and variations in how the street enumeration was carried out may have affected the

counts. This paper is concerned in particular with the possible influence of enumerator behavior on the counts. The paper uses unobtrusive observers' reports to address the question of how consistently and completely census enumerators carried out the enumeration at street sites in the 5 study areas.

We begin with basic information on whether observers saw census enumerators at the sites, based on their answers to the questionnaires filled out immediately after S-Night. If any of the observers at a site saw an enumerator, or if enumerators were seen before or after the scheduled enumeration period of 2-4 a.m., or were seen near a site but not in it, these reports were counted as positive reports of enumerator presence. For 2 of the 130 sites, enumerator presence could not be ascertained, leaving a total of 128 sites on which the remainder of the paper is based.

Table 2, column (1), shows that the proportion of sites where observers reported they saw census enumerators varied greatly among study areas, from 100 percent in New Orleans down to 31 percent in Chicago. These results must be interpreted cautiously, however, because the observer reports are subject to error. Therefore, it is relevant to consider the consistency of observer reports and census outcomes. Table 3 presents the cross-classification of observer reports and census outcomes for 128 sample sites. These data show that census outcomes and observer reports are mostly but not wholly consistent. If we compute percentages based on column totals, we find that 66 percent (55 of 83) of sites where enumerators were observed return a positive count, compared to 36 percent (16 of 45) of sites where enumerators were not seen. Computing percentages based on row totals, we find that enumerators were seen in 77 percent (55 of 71) of sites with positive census counts. However, two findings in Table 3 are troubling. First, in 45 sites representing 35 percent of the total, observers saw no enumerators. If the observer reports are accurate, this would imply a failure to enumerate over a third of the sites in these study areas. Second, at 16 of these 45 sites, positive census counts nevertheless were returned. These 16 anomalies were concentrated in particular districts, with 10 occurring in South Manhattan, and a disproportionate number in Chicago. If the observers failed to observe census enumerators who did come, then obviously it would be a mistake to rely upon their reports to assess street enumeration.

A variety of factors could influence observer reliability, including:

- * timing of observation and enumeration. If observers arrived late or left early, or if census enumerators enumerated the site sometime other than 2-4 a.m., observers could miss enumerators.

- * curbstoning or fabrication of results by either enumerators or observers would reduce the consistency of observer and census data.

- * the quality of the observer questionnaire data is not high.

- * visual obstructions, or problems identifying site locations or boundaries, may have reduced the reliability of observation.

- * difficulty identifying census enumerators.

Most of the observational difficulties would lead to underreports of enumerator presence. On the other hand, curbstoning by census enumerators could lead to census

counts for street sites which were not actually enumerated.

There was no check on either the observers' or the enumerators' work, so we cannot address the issue of curbstoning except to say we found no evidence that it happened. However, Census Bureau staff did investigate the 10 discrepant S. Manhattan sites by visiting and photographing them (Schwede, 1991). It appears that the size and complexity of some sites, ambiguous site locations, and some timing problems explain these discrepancies. The evidence suggests these 10 sites were enumerated, but that enumerators and observers were present at slightly different places or times, resulting in discrepancies between observer and census results. When the results for the South Manhattan District Office are excluded³ from data in Table 3, census and observer results are more consistent. Enumerators were observed in almost 90 percent of sites which had positive census counts. Census counts of 0 were returned in 82 percent of sites where no enumerators were observed.

We did not investigate the other 6 anomalous sites. However, if we assume that all the anomalous sites were enumerated, the evidence still suggests that substantial numbers of sites may have been missed in Phoenix, Los Angeles, and Chicago. Column (1) of Table 2 presents the proportion of sites in each study area where enumerators were seen. In column (2), we add in the sites where positive census counts were returned, on the assumption that those sites were enumerated but the observer missed seeing the enumerator. Based on results in column (2), one would conclude that enumerators' coverage of sites in New Orleans and New York study areas was quite complete. But the evidence in column (2) suggests that, no matter what we assume about the anomalous sites, the proportion of street sites enumerated in the other 3 study areas was much lower, ranging from 52 percent in the Los Angeles study area to 67 percent in the Phoenix study area. Missed sites only affect the counts if there were people there who should have been enumerated. As discussed below, observers' estimates of the number of people present in the sample sites suggest that missed sites reduced the census counts in Los Angeles and Chicago sample sites, but not in Phoenix.

Next we address the question of how enumerators who were observed at the sample sites conducted the enumeration.

Enumerator Behavior

Enumerators were instructed to enumerate everyone visible at the site, except for people in uniform or engaged in obvious money-making activities. They were not to waken sleeping respondents to interview them, but rather to estimate age, and record race and sex based on observation. If a person seemed dangerous, or was mentally incapable of being interviewed, enumeration by observation also was permitted.

Every observer should have been interviewed. Observers were instructed to remain in sight and allow themselves to be interviewed by enumerators.

It appears that enumerators were selective in whom they chose to enumerate, and that they did not uniformly carry out the enumeration according to standard procedure. We have 2 sources of evidence about enumerator selectivity: observers' reports of whether they personally were enumerated, and their observations of whom enumerators approached at the sites.

Table 4 shows that the proportion of observers

interviewed varies enormously, ranging from two-thirds in New Orleans down to only 7 percent in the Chicago study area. (Table 4 is based on reports of all observers in matched processed sites, excluding the 16 sites where enumerators were not seen but census counts were positive.) When we add in the 6 to 29 percent of observers in each study area who believed they were counted, or thought they might have been, the proportion of observers in each study area who reported they were certainly or probably enumerated is:

| | |
|-------------|-----|
| New Orleans | 84% |
| New York | 66% |
| Phoenix | 55% |
| Los Angeles | 39% |
| Chicago | 25% |

Several sources of error that influence observer reports have been discussed. However, even granting that some observers might have been counted who believed they were not, these rates are very low in some study areas and show extreme variability among areas. In part, the variability occurs because numbers of sites apparently were missed in Phoenix, Los Angeles, and Chicago, as discussed above. In addition, selective interviewing and enumeration by observation contributed to variability in interview rates. Table 5 presents observers' reports of whom census enumerators approached to interview, based only on those observers who saw enumerators. These reports are of unknown reliability, since there are high rates of missing data, mostly from observers who said they couldn't tell whom enumerators approached. The proportion of observers who report that census enumerators approached everyone visible in the street varies from 12 percent in New York to almost half in Phoenix⁴. Overall, 19 percent of observers report that enumerators approached only people who appeared homeless, with no statistically significant variation among study areas. In all 5 study areas (but especially Chicago and New York), observers commonly reported that enumerators neither approached everyone, nor did they approach only homeless-appearing individuals. In some areas (especially in New York; see Hopper, 1991a) census enumerators apparently conducted the enumeration predominantly or entirely by observation, regardless of whether the people in the site were awake and capable of being interviewed. Enumeration by observation would not necessarily result in counting errors, although data on age, race, and sex obtained this way are not as accurate as data obtained by personal interview, and marital status and Hispanic origin were not obtained for cases enumerated by observation.

These results suggest low, and variable, compliance with the standard S-Night procedure of enumerating all visible persons. Enumerators who complied with the procedure of enumerating all visible persons would obtain more complete counts of sites than enumerators who enumerated only homeless-appearing people or who were otherwise selective. Therefore, if observer reports are reliable, variations in who was selected for enumeration imply that the completeness of the counts varies among sites within study areas, and among study areas.

The lack of consistency in who was approached for an interview may reflect a weakness of S-Night training. However, the problem of enumerators ignoring the instruction to enumerate all visible persons was documented in previous tests (see e.g., Siegel, 1989), so

the procedure was emphasized in training in 1990. As noted, almost a fifth of observers report that enumerators only approached people who appeared homeless. It has been suggested that the publicity surrounding S-Night as a "count of the homeless" seemed contradictory with a procedure of enumerating everyone, leading enumerators to ignore the procedure and improvise their own ways of "counting the homeless." Training may not improve compliance by enumerators who reject the procedure because it appears inconsistent with their understanding of the task.

Comparison of Census and Observer Counts

The final question we pose is the possible effects on the counts of the variations in how street enumeration was carried out. We cannot draw a definite conclusion, but we can compare census counts with observer estimates for the sample sites. Each observer was asked to estimate the lowest number of people present in the site between 2 and 4 a.m., and the highest number present. There were multiple observers at many sites, and individual observers often recorded ranges for either the lowest or highest number present. For each of the 2 estimates, I selected the lowest and the highest observer number per site, and summed them separately over all sites, to form ranges for the estimated lowest and highest number of people present in the sample sites. (As an example, if one observer at a site reported 4 and 10 as the lowest and highest number of people, respectively, while another reported 9 as both the lowest and highest number, then for that site the range of low estimates is 4-9, and the range of high estimates is 9-10.)

The observers' reports of numbers of people at the sites must be treated with caution, since the summed estimates of their low and high numbers cover considerable ranges. Possibly, some observers were selective in whom they counted, as some enumerators appear to have been, which would introduce variability in the observer estimates. Variability in observer estimates also partly reflects the way the sums were formed as well as error in the data. In some sites, different observers, although technically reporting on the same site, may have had different vantage points and different areas they were reporting about.

Table 6 presents these ranges of low and high number of people present, compared with the census counts for the 5 study areas. In all study areas except New York, census counts are within the range of observer estimates of the low number of people present, for sites where enumerators were seen. This finding probably reflects enumerator selectivity, as discussed above. In addition, observers reported their low and high estimates over the entire 2 hour period; enumerators would not necessarily have been present at the time when the greatest number of people was present.

New York produces census counts higher than the highest observer counts. In some New York sites, lack of comparability between sites as defined by the census and by observers implies that the two sets of counts refer to different entities. An example is a large transportation terminal where the census counted 653 people. Observers were stationed at specific areas within the terminal, and their counts refer to those areas. A comparison of the high observer count (100) for the site with the census count of 653 is misleading, because the former refers to a particular part of the site and the latter to the entire terminal. When observer counts are adjusted to sum across all parts of the site, observer estimates are closer to census counts.

Similarly adjusted figures may be calculated to take account of similar situations in New Orleans and Chicago, where observers' counts refer to subparts of larger census sites and hence should be summed.⁵ In addition, early enumeration, which was reported more commonly in New York than anywhere else, may have yielded higher census counts there than would have been obtained if all sites were enumerated between 2 and 4 a.m. However, we have no systematic evidence on the extent of early enumeration in New York or elsewhere so cannot assess its possible effect on the counts.

Observers reports indicate that the number of people in sites where no enumerators were observed was substantial relative to the total census count, for some study areas. Although there are official census returns for some of these sites, the census counts may have been affected by missed sites in the Los Angeles and Chicago study areas. (But note the high variability in Los Angeles observers' estimates.)

Limitations of the Assessment

The assessment provides only limited data about the adequacy of S-Night street enumeration. The assessment was not designed to estimate how completely the homeless population was counted in the 1990 Census. As yet, no methods have been developed to accurately measure census coverage of this population. In addition, it is not valid to generalize the results from the 8 district offices in the assessment to other places or the nation as a whole. Thus, this assessment study cannot support conclusions about the rate of census coverage of the homeless population in these cities or in the country, nor can it support conclusions about how well or poorly S-Night street enumeration was conducted in places not included in the assessment. In addition, there is very little information to evaluate several important aspects of the operation.

Adequacy of street site selection. Street sites to be enumerated were compiled by district offices with assistance from cities and other agencies, advocate groups, etc. The criteria used and the adequacy of the compilations of street sites appear to vary from place to place. The assessment reports note that a number of sites on the census lists appear to be daytime rather than nighttime congregating sites, and raise other questions about the selection of sites. However, the quality and completeness of the list of street sites are unknown.

Who was counted. S-Night enumeration was intended to include homeless people who otherwise would not have been counted in the census. However, it is unknown how many of the people who were counted on S-Night had a usual home elsewhere and were eligible for enumeration there.

Duplication with other operations. S-Night was conducted about 2 weeks before Census Day, April 1. It is unknown how many people who were counted in the streets on S-Night also were counted as part of regular household enumeration or as part of another census operation.

Summary and Conclusions

Consistency of observer reports and census results. Although they provide useful information, observer reports about the census enumeration process are fallible. The observational method used in the assessment yielded valuable information about the street enumeration process.

Several of the operational problems uncovered were not anticipated, and might not have identified, without the information provided by the observers. However, it is clear that this method is absolutely dependent on accurate and consistent information about site locations, if reliance is to be placed on observer reports about what happened (or what failed to happen) in a street site scheduled for enumeration. In large and complex sites, the method is vulnerable to observational and definitional difficulties which can affect the reliability of observer reports (see Hopper, 1991b, on this point).

Adherence to procedures. Observer reports suggest that enumerators in the 5 study areas did not consistently follow standard procedures for conducting street enumeration. The most serious problem is indicated by the evidence suggesting that enumerators may have missed half the street sites in Chicago and Los Angeles study areas, and a third in Phoenix. Adverse effects on the count are indicated only in Chicago and Los Angeles. The number of people who should have been enumerated is unknown, due to inter-observer variability and variability in the numbers of people present in the sites between 2 and 4 a.m.

In sites which were enumerated, observer reports indicate that enumerators often did not conduct interviews even when it was possible to do so. Enumeration by observation appears to have been common, especially in New York. However, there is no evidence that people were missed because of it, and census counts are high relative to observer estimates in New York.

Many enumerators in all 5 study areas appear to have interviewed selectively. Almost 20 percent of observers report that enumerators only approached people who appeared homeless, with no significant variation among study areas. Enumerator selectivity is potentially a large source of variability in the size of the street counts from site to site and city to city. Although enumerator selectivity may have contributed to lower counts, comparison of observer and census counts cannot support this conclusion in any definitive way since observers' estimates refer to the entire 2-4 a.m. period, not to the time enumerators were present.

Limitations of S-Night data from street enumeration. As emphasized above, the observer data cannot support estimates of coverage of the homeless population. Despite all the caveats noted above, this assessment does support several conclusions about the limitations of the S-Night street data. It appears clear that street enumeration was not carried out in a comparable, standardized way in the district offices represented in the assessment. In New Orleans, street enumeration went relatively well, according to observer reports. At the other extreme, street enumeration in Chicago appears to have been seriously flawed. Departures from standard procedure appear to have occurred to varying degrees in all 5 study areas, and the variations in how S-Night was carried out affected the counts obtained. Most departures from S-Night procedures (e.g., missed sites, enumerator selectivity) would result in undercounts, although some departures from procedure (e.g., early enumeration) could produce overcounts, relative to the standard procedure. Variations in how S-Night was carried out imply that street counts are not comparable from place to place, and should not be used to make comparisons of the absolute or relative size of the homeless population in different places.

Notes

1. This paper reports the results of research undertaken by Census Bureau staff. The views expressed are the author's and do not necessarily reflect those of the Census Bureau. The S-Night Assessment project was managed by Pamela Campanelli and Matt Salo, who, assisted by Laurel Schwede, did an admirable job of planning and implementing the project and designing all procedures within a very short time period. The assessment method was originally proposed by Kim Hopper, and data were collected and assessment reports prepared under direction of Kim Hopper (New York), James Wright and Joel Devine (New Orleans), Kathryn Edin (Chicago), Michael Cousineau (Los Angeles), and Louisa Stark (Phoenix). Paul Siegel, Florence Abramson, Annetta Clark, Diane Barrett, Robert Fay, Robert Groves, Laurel Schwede, Paula Schneider, Nampeo McKenney, Laurie Moyer, Nancy Mathiowetz, and Robert Tortora contributed useful comments on an earlier draft.

2. The study areas covered Manhattan south of 110th St. on the westside and 96th St. on the eastside; part of central Chicago (including the loop); central Los Angeles (including Skid Row area); most of Phoenix excluding the westernmost portion; and Orleans Parish.

3. Numbers comparable to Table 3 for the South Manhattan District Office are:

| | Enumerators observed | Not observed |
|----------------|-------------------------|-----------------|
| + census count | 12 | 10 |
| 0 census count | 1 | 2 |

4. The difference among study areas in the proportion who say everyone was approached is significant ($X^2 = 18.4$, $df = 4$, $p < .01$; calculation does not take account of clustering in the data).

5. Summing figures across observers at subparts of sites to adjust for more inclusive census site definitions yields the following revised observer estimates for sites where enumerators were seen:

| | Observer low | Observer high |
|-------------|--------------|---------------|
| New Orleans | 81-155 | 178-303 |
| New York | 564-911 | 751-1160 |
| Chicago | 13-24 | 47-55 |

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TABLE 2
Alternative Estimates of the Proportion of Sites Visited by Enumerators, by Study Area

| Study Area | (1) Percent of sites where enumerators were seen | | (2) Percent of sites where enumerators were seen OR + census counts | | Total Sites |
|-------------|---|------------|--|------------|-------------|
| | % of total | N of sites | % of total | N of sites | |
| New Orleans | 100% | 18 | 100% | 18 | 18 |
| New York | 72% | 38 | 91% | 48 | 53 |
| Phoenix | 57% | 12 | 67% | 14 | 21 |
| Los Angeles | 48% | 11 | 52% | 12 | 23 |
| Chicago | 31% | 4 | 54% | 7 | 13 |
| Total | 65% | 83 | 77% | 99 | 128 |

TABLE 1
Total Population Counted at Matched, Census-Defined Sites, by Study Area

| | New Orleans | New York | Phoenix | Los Angeles | Chicago | Total |
|--------------------------|-------------|----------|----------|-------------|---------|------------|
| Census count | 109 | 1,318 | 135 | 218 | 23 | 1,803 |
| Number of sites | (18) | (54) | (21) | (23) | (14) | (130) |
| Site deleted from census | | | 2 (4) | 47 (6) | | 49 (10) |
| Matched sites | 18 | 54 | 25 | 29 | 14 | 140 |

TABLE 3
Census Outcomes for Sites Where Observers Did and Did Not Observe Enumerators

| Census Outcome | Were Enumerators Observed? | | Total N of Sites |
|-------------------------------------|----------------------------|----|------------------|
| | Yes | No | |
| Positive Official Count for site | 55 | 16 | 71 |
| Zero Official count for site | 28 | 29 | 57 |
| Total N of Matched, processed sites | 83 | 45 | 128 |

TABLE 4
Percent of Observers Who Report Being Interviewed or Counted, by Study Area

| | New Orleans | New York | Phoenix | Los Angeles | Chicago |
|-------------------------|-------------|----------|---------|-------------|---------|
| Interviewed | 67% | 37% | 44% | 33% | 7% |
| Not Interviewed | | | | | |
| Counted | 10 | 17 | 8 | 2 | 0 |
| Maybe counted | 7 | 12 | 3 | 4 | 18 |
| Not counted | 10 | 20 | 10 | 13 | 25 |
| Did not see enumerators | 5 | 14 | 36 | 48 | 50 |
| Total | 100 | 100 | 100 | 100 | 100 |
| N of observers | 58 | 104 | 39 | 46 | 28 |

Results based on answers to the questions, "Were you interviewed by an enumerator?" (Yes, No), and "Do you think you were counted by an enumerator without being interviewed?" (Yes, Maybe, No). Percents may not sum to 100 due to rounding error.

TABLE 5
Observer Reports of Whom Enumerators Approached, by Study Area

| Enumerators approached-- | New Orleans | New York | Phoenix | Los Angeles | Chicago |
|---|-------------|----------|---------|-------------|---------|
| Everyone visible on the street | 35% | 12% | 48% | 14% | 23% |
| Only those who appeared homeless | 15 | 17 | 22 | 32 | 15 |
| Neither everyone, nor homeless-appearing only | 15 | 42 | 13 | 23 | 46 |
| Couldn't tell who approached; missing data | 35 | 28 | 17 | 32 | 15 |
| Total | 100 | 100 | 100 | 100 | 100 |
| N of Observers | 52 | 88 | 23 | 22 | 13 |

Results based on questions, "Did the enumerators approach: Everyone visible on the street (except those in uniform or those engaged in money-making activities other than panhandling?"; "...Only those who appeared homeless?" (Yes, No, Couldn't tell). Results include reports of all observers at matched, processed sites who saw enumerators. Percents may not sum to 100 due to rounding error.

TABLE 6
Official Census Counts Compared with Observer Reports of Low and High Numbers of People at Sites

| | Enumerators were seen | | | | Enumerators were not seen | | | |
|-------------|-----------------------|---------|---------|------------|---------------------------|--------|---------|------------|
| | Census Count | Low | High | N of Sites | Census Count | Low | High | N of Sites |
| New Orleans | 109 | 34-123 | 78-248 | 18 | -- | -- | -- | 0 |
| New York | 1240 | 256-441 | 455-732 | 38 | 69 | 68-102 | 124-160 | 15 |
| Phoenix | 104 | 90-144 | 122-170 | 12 | 31 | 13-19 | 21-45 | 9 |
| Los Angeles | 217 | 139-258 | 171-337 | 11 | 1 | 32-212 | 67-238 | 12 |
| Chicago | 11 | 9-23 | 32-43 | 4 | 12 | 33-37 | 104-109 | 9 |

Low and high observer reports are based on responses to the question, "The following questions refer to the total number of different people at your site eligible to be enumerated by the census, that is, all persons except those who were in uniform and those involved in money-making activities, other than panhandling. If you do not know the exact number, please fill in your best estimate in the "Approximate Number" column.

Exact Number Approx. Number

a) If the number of people in the site changed:

1. What was the lowest number there between 2 and 4 a.m.?
2. What was the highest number there between 2 and 4 a.m.?"

_____ _____
_____ _____

For calculation of ranges of low and high observer estimates, see text. Preference was given for exact rather than approximate numbers when both were given; responses are eliminated for a few observers who gave low numbers greater than their high numbers. If a high number was missing, the low number was substituted; and if a low number was missing, the high number was used. Figures given are totals across sites, with no adjustment for missing observer data (N=2 sites).