

EVALUATING RACIAL AND ETHNIC REPORTING IN THE 1990 CENSUS

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INTRODUCTION

Scope

This paper is a one in a series of reports evaluating the quality of data on race and ethnicity (Hispanic origin and ancestry) collected in the decennial censuses. It analyzes the consistency in the reporting of race and ethnic information in the 1990 census. Consistency in reporting is a prime indicator of the quality of the race and ethnic data.

The evaluation of race and Hispanic origin data has become very important because of the data's increased usage for implementing legislation and programs and funding allocations. The evaluations are also important in light of issues arising about the adequacy of the racial and ethnic classifications used by the federal government, which are outlined in Federal Statistical Policy Directive No. 15.

We evaluated the quality of the data by using the 1990 Census Content Reinterview Study (CRS) to examine: 1) the consistency of the responses to the race, Hispanic origin, and ancestry questions in the 1990 census with responses to similar questions in the 1990 census reinterview for identical persons; and 2) the characteristics of nonrespondents to the Hispanic origin item in the census. Where pertinent, we compared the results of the 1990 CRS with results from the 1980 CRS.

Using the 1990 Public Use Microdata Sample (PUMS), we also analyzed the consistency of data for race, Hispanic origin, and ancestry, with related items such as birthplace and language spoken in the home.

Organization

The paper begins with a brief overview of the race and ethnic questions asked in the 1990 census. The first major section contains an overview of the Content Reinterview Study (CRS) and an evaluation of each question--race, Hispanic origin and ancestry. The second section examines responses to the three questions using the 1990 Public Use Microdata Files (PUMS). Finally,

we discuss issues raised by the evaluation results.

RACE AND ETHNIC QUESTIONS

The 1990 census questions on race, Hispanic origin, and ancestry were included in the Content Reinterview Survey (CRS) with the addition of more probing questions. An extensive research and testing program prior to the 1990 census resulted in a number of changes to each question to improve the reporting in the 1990 census.

The 1990 census race question was asked of all persons, see below. The race concept used in the census reflects self-identification on the part of the respondent; each person was asked to report the one race with which he/she most closely identified. The 1990 question, like previous censuses, included a number of socio-cultural or national origin groups. Three categories--"Indian (Amer.)", "Other API," and "Other race"--required write-ins.

1990 Race Question (Included on Both Short and Long Forms)

4. Race
Fill ONE circle for the race that the person considers himself/herself to be.

If Indian (Amer.), print the name of the enrolled or principal tribe. →

If Other Asian or Pacific Islander (API), print one group, for example: Hmong, Filipin, Laotian, Thai, Tongan, Pakistani, Cambodian, and so on. →

If Other race, print race. →

Write

- Black or Negro
- Indian (Amer.) (Print the name of the enrolled or principal tribe.)
- Eskimo
- Aleut

Asian or Pacific Islander (API)

- Chinese
- Japanese
- Filipino
- Asian Indian
- Hawaiian
- Samoan
- Korean
- Guamanian
- Vietnamese
- Other API

Other race (Print race)

The two primary ethnic identifiers in the census are the Hispanic origin and ancestry questions. Hispanic origin was asked of all persons, while the ancestry question was asked of a sample of the population. The Spanish/Hispanic question was based on self-identification. This question listed a "No, (not Spanish/Hispanic)" category and four specific Hispanic categories. Persons who reported as "other Spanish/Hispanic" were asked to write-in their group, see below.

Hispanic Question for the 1990 Census (Included on Both Short and Long Forms)

<p>7. Is this person of Spanish/Hispanic origin? <small>Put ONE circle for each person</small></p> <p style="text-align: center;">If Yes, other Spanish/Hispanic, print one group. →</p>	<ul style="list-style-type: none"> <input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Am., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic (Print one group, for example: Argentinian, Columbian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.) → <div style="border: 1px solid black; width: 100px; height: 20px; margin-top: 10px;"></div>
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The ancestry question was open-ended and required persons to write in their responses (see below). Ancestry allowed multiple responses, unlike race and Hispanic origin, which asked respondents to select one category. The ancestry question included several aids, including a list of 22 examples, to help respondents understand and answer the question.

Ancestry Question for 1990 (Included on Long Form)

<p>13. What is this person's ancestry or ethnic origin? <small>(See instruction guide for further information.)</small></p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-top: 5px;"></div> <p><small>(For example: German, Italian, Afro-Amer., Croatian, Cape Verdean, Dominican, Ecuadoran, Haitian, Cajun, French Canadian, Jamaican, Korean, Lebanese, Mexican, Nigerian, Irish, Polish, Slovak, Taiwanese, Thai, Ukrainian, etc.)</small></p>

EVALUATIONS BASED ON CRS Overview of CRS

The CRS allows one to compare the responses to the race and ethnic questions in the census with those in the reinterview for identical persons. Differences between the census and reinterview indicate the extent to which respondents had difficulty answering the questions. The reinterview data were considered the standard of comparison for census responses. Since the race and ethnic concepts are based on self-perception, it is difficult to determine the "true" race or ethnicity when the census and reinterview responses differ. However, the probing questions and the use of experienced interviewers in the reinterview suggest the CRS may better approximate the respondent's self-perception of his

or her identity.

Two summary measures of response error were used. The index of inconsistency describes the amount of inconsistency (gross error) associated with the information, and the net difference rate describes the amount of bias (net error). A general rule of thumb is that an index of inconsistency below 20 indicates good consistency; 20 to 49 indicates moderate consistency with some response problems; and 50 or greater, poor consistency.

The net difference rate is the difference between the census and the reinterview proportions of persons reporting in the race or Hispanic origin category. A positive value of the net difference rate is interpreted as overreporting in the census; and a negative value as underreporting in the census.

Race--Comparisons of Census and CRS Responses

Analysis of CRS-Census Distributions

The percent of consistent response is the percent of the reinterview responses identical to the census responses, see Table 1. Overall, the pattern of consistent responses from the 1990 CRS is similar to that for 1980.

A high degree of identical responses (90 percent or above) was found in 1990 for the White, Black, and Asian and Pacific Islander categories (Table 1). The 63 percent for the American Indian, Eskimo, and Aleut category for the 1990 is relatively low, but represents a slight improvement over the 1980 level (58 percent). Changes to the 1990 race question, such as the instructions on the reporting of tribe, probably contributed to this modest improvement. (We will hereafter use "American Indian" to refer to the American Indian, Eskimo, and Aleut population and use API interchangeably with Asian and Pacific Islander.)

In 1990, as in 1980, most of the race inconsistency or mismatches among American Indians involved persons who identified as White in either the CRS or the census. However, there was an increase in the proportion who identified as Black in 1990 as compared to 1980. Reporting in the American Indian category has been a persistent problem, (Snipp 1968, and Passel and Berman 1986). McKenney and Cresce (1992) have noted

that the quality of the data for this population is especially important since it is relatively small in size, and several governmental programs use census data to allocate funds to tribal and Alaska Native village governments and organizations.

The 1990 CRS percent consistent was only 38 percent for the "Other race" category, a level very close to the 36 percent for 1980. Of the 479 persons classified as "Other race" in the 1990 reinterview, about 50 percent had reported as White in the census, 8 percent as Black, and 4 percent as API, see Table 1. The continued inconsistent reporting in the "Other race" category is of increasing concern given the growth in the number of persons reporting in the "Other race" category--from 7 million in 1980 to 10 million in 1990.

Summary Measures of Response Errors

The index of inconsistency for race (16) indicated overall consistent reporting in the race item, see Table 2. Similarly, there was good consistency (indices below 20) for the White, Black, and Asian and Pacific Islander categories. Among detailed API groups, however, the consistency of reporting was good (below 20) for the Chinese, Filipinos, Japanese, Asian Indians, and Koreans, but reporting was relatively poor (49) for the "Other API" category. The index for the American Indian category was in the moderate range (36), and that for "Other race" in the poor range (69), reflecting the problems discussed above.

It is important to emphasize that a special automated operation, involving professional review and coding, and computer editing of write-in responses, substantially reduced the extent of inconsistent responses for the 1990 race data. (See Cresce, Lapham, and Rolark (1992) and McKenney and Cresce (1992) for a discussion of this operation.

Overall, the net difference rates showed no apparent bias in the reporting in the Black, American Indian, and API categories (see Table 2). The observed underreporting for Whites (-0.6) and overreporting in the "Other race" category (+0.6) reflects the movement of persons between the two categories.

Summary Measures--Selected Characteristics

We found that Hispanic origin, nativity, language spoken, and ability to speak English were associated with response problems for race.

Hispanic persons frequently reported their race in the reinterview differently from the census. According to net difference rates, many more Hispanics reported as "Other race" in the census (+15) than in the reinterview, but fewer reported as White or Black (-12 and -3, respectively) in the census than in the reinterview (see Table 3). There was a slight underreporting of Hispanic persons in the overall API category, however, our detailed analysis showed overreporting in the "Other API" category.

Both native and foreign born Hispanics (indices of 82 and 91, respectively) have difficulty with reporting consistently in the race item. Cognitive research sponsored by the Census Bureau found that some Hispanics, particularly the foreign born, found the race question confusing, and therefore reported in the American Indian and "Other API" categories, see Figure 1.

We found that foreign born persons had higher inconsistent indices for the race item than the native born (40 and 13, respectively, see Figure 2). The index was also relatively high (47) for persons who spoke a language other than English at home, both for those who spoke English well (42) and those who did not (62).

Hispanics (54) as well as non-Hispanics (35) and native born persons (37) had relatively high inconsistent indices for reporting in the American Indian category (see Figures 1 and 2). Research by McKenney and Cresce (1992) indicates that some foreign born Hispanic parents reported themselves in the "Other race" or White category, but reported their children in the American Indian category. Similarly, some foreign born Asian Indian parents reported themselves as Asian Indian but their children as American Indian. In both situations, the parents may have been trying to indicate that their children were native born, that is American.

Poor consistent reporting for the "Other race" category was evident for Hispanic (91) and non-Hispanic (97), and native (64) and foreign born (86) respondents. However, about 96 percent of

the 10 million "Other race" persons were Hispanic origin persons, see Figures 1 and 2.

Summary

Overall, we found data of high quality for the race item, but significant problems were noted for the American Indian and "Other race" categories. There was considerable switching between each of these categories and the White category. Hispanics, whether foreign born or native, had difficulty with reporting in all the race categories. Non-Hispanics and the native born had difficulty with the categories--American Indian and "Other race". Poor consistent reporting in the "Other race" category was widespread. In addition, net difference rates showed that Hispanics overreported in the "Other race," and underreported in specific racial categories.

Hispanic Origin--Comparison of Census and CRS Responses

Analysis of CRS-Census Distributions

In the 1990 CRS, about 89 percent of the persons who reported as Hispanic in the reinterview also did so in the census, see Table 4. The 11 percent who did not report as Hispanic in the census slightly outnumbered the 8 percent who reported as Hispanic in the census but as non-Hispanic in the reinterview.

Most of the switching between Hispanic and non-Hispanic occurred among persons reporting in the Other Hispanic and Mexican categories, a pattern also observed in the 1980 CRS. In the 1980 census some non-Hispanics misreported in the Mexican and Other Hispanic categories. The 1990 evaluations suggested this form of misreporting had declined, but would not account for all of the switching between the Hispanic and non-Hispanic categories.

The percent consistent response was relatively high (above 82 percent) for each specific Hispanic origin group except Other Hispanic, see Table 4. Only 63 percent of Other Hispanics in the reinterview reported as such in the 1990 census, an improvement over the 1980 figure (55 percent). The 1990 census, added a write-in line and examples to improve the reporting in the Other Hispanic category. Although this change

contributed to the modest improvement in 1990, the results indicate that reporting for the other Hispanic category is still problematic.

Summary Measures of Response Errors

Our analysis showed overall good consistency in reporting for the Hispanic origin item as a whole and as Hispanic or non-Hispanic, see Table 5 and Figure 3. Similarly, low indices (below 20) were observed for all specific Hispanic categories except Other Hispanics, (36).

The movement in and out of the other Hispanic category suggest that both Hispanics and non-Hispanics had difficulty in understanding and reporting in this category. Hispanics with mixed ethnicity or persons of mixed Hispanic and non-Hispanic ethnicity may have been unsure of how to answer. Also, previous research from the 1980 Census suggested some non-Hispanic persons misunderstand the category to mean "Other than Spanish/Hispanic" or do not understand the term "Spanish" or "Hispanic".

According to the net difference rates, the Hispanic population was slightly underreported in the census, (see Table 5). Among the specific Hispanic groups, the only bias noted was a slight underreporting for the Mexican origin category (-0.2) in the census.

Summary Measures--Selected Characteristics

We analyzed responses to the Hispanic origin item by a number of characteristics. This further analysis showed somewhat less consistent reporting among the native born, persons 65 years old and over, and English only speakers, although indices for even these characteristics were in the low or low moderate range of inconsistency. Asians and Pacific Islanders had more difficulty in reporting consistently in the Hispanic item than other racial groups.

Our further analysis of the Other Hispanic category showed that the inconsistent reporting in the category occurred regardless of race, relationship to householder, educational attainment, language spoken, or ability to speak English. However, the inconsistency was higher for some

groups, such as the native born (54) and English only speakers (59).

Characteristics of Nonrespondents to Hispanic Origin in the Census

The Hispanic origin item has had a persistently high level of nonresponse in censuses. Previous research suggested that non-Hispanics were disproportionately less likely not to answer the Hispanic question. The CRS data indicate little difference between nonrespondents and respondents in their reinterview response to the Hispanic origin item; 6 percent of the persons who did not answer the Hispanic-origin question in the census reported as Hispanic in the reinterview compared to 7 percent for those who answered, see Table 6.

Further analysis indicated that the nonrespondents were somewhat less likely than the respondents to be White, but somewhat more likely to be Black, 65 years and over, and with lower educational attainment. Census Bureau research suggest that some Hispanic persons who identified as Hispanic in the reinterview had written in a Hispanic type entry in the race item in the census, but left the Hispanic origin blank in the census.

Summary

In summary, overall the consistency of the data on Hispanic origin was good. However, we found several significant problems of inconsistent reporting with the Other Hispanic category. The native born persons and English only speakers had the most difficulty with this category. There was a small degree of underreporting in the Mexican category in the census. Finally, persons who did not respond to the census Hispanic origin item were as likely to be Hispanic as were those who responded.

Ancestry

For the ancestry item in the census, we coded and tabulated up to two responses. For this paper, we matched only on the first ancestry response in the census and the reinterview for 28 selected ancestry groups. This is a strict measurement, resulting in relatively high indices for some groups.

Summary of Response Errors

In general, the majority of persons provided a first response in the CRS similar to the first response given in the census. Overall, the index of inconsistency for the ancestry item was 41, denoting moderate inconsistency, see Table 7.

With the exception of "American", the six most frequently reported ancestries--German, Irish, English, Afro-American, and Italian have indices ranging from 15 (good) to 45 (moderate inconsistency). The index from American was in the poor range. Italian, Mexican, Filipino, and Portuguese had relatively low indices, indicating consistent reporting. These findings from the 1990 CRS are generally consistent with previous studies by Farley (1990) and Lieberman and Water (1988).

In addition to American, several groups including American Dutch, Scotch Irish, Scottish, French-Canadian, had poor consistency in ancestry reporting. A part of the explanation for the inconsistency may be that some persons do not know their ancestry or ethnic origin and therefore, report one of the examples provided in the instructions for ancestry (McKenney and Cresce, 1992, and Cresce, Lapham, and Rolark, 1992). Another possible explanation may be due to the level of ethnic flux, identified by Lieberman and Waters (1988). As was noted by Waters (1990), some persons of European ancestry may have multiple ancestries and are choosing them based on various perceptions.

Summary

In Summary, our analysis, using a strict measurement, indicated moderate overall inconsistency in the reporting of ancestry. However, the data showed good reporting for some ancestries, but rather poor for other groups. Further research will provide more insight of reporting in this item.

EVALUATION FROM PUMS

We also used the PUMS to compare the consistency of responses from the race and Hispanic origin items with responses on ancestry, place of birth, and language spoken in the home.

Consistency of Race, Place of Birth, and First Ancestry

For most race groups, the data on race were consistent with those for ancestry, place of birth, and language spoken. The responses for a few groups such as Asian Indians, Guamanians, and Aleuts show some apparent inconsistencies. For example, about 19 percent of persons reporting Asian Indian in the race item reported their first ancestry as American Indian, and most of these gave place of birth and language responses consistent with the Asian Indian race classification. Furthermore, some persons who reported as Guamanian on the race item, reported Guatemalan for ancestry.

Only 81 percent of persons who reported Aleut in the race item reported the U.S. as their place of birth; about 15 percent reported such diverse places as Thailand, Mexico, and the Middle East, and a similar diversity in their ancestry responses. The second ancestry, birthplace, and language responses suggest that persons from several different areas of the world may have erroneously reported their race as Aleut.

Consistency of Hispanic Origin, Place of Birth, and First Ancestry

Our comparisons of Hispanic origin reporting with ancestry, place of birth, and language showed overwhelming consistency for most Hispanic origin groups. The figures for Puerto Ricans and Cubans illustrate this consistency. The only exception to this pattern involved the Other Hispanic category.

Summary

For both race and Hispanic origin, the analysis showed substantial consistency when comparing race or Hispanic origin with other related ethnicity items. Several apparent inconsistencies noted warrant further investigation.

ISSUES RAISED BY EVALUATIONS OF RACE AND ETHNIC ITEMS

Our evaluation of the race and ethnic data presented in this paper indicate that broad generalizations about the quality of the race and ethnic data camouflage important complexities.

However, this analysis does suggest that improvements made to the 1990 questions based on previous research along with extensive outreach and public education, all contributed to the improved data in 1990.

Overall the quality of the data, as measured by its consistency with the CRS was good. But there were significant problems, some persistent and others new for American Indian and Other race in the race item, and for Other Hispanic in the Hispanic origin item. These problems are of concern because of the uses of these data for redistricting, implementing programs, and allocating funds. Often we find that problems of reporting are concentrated in geographical areas and can have a disproportionate effect on data for small geographical areas.

The level of inconsistent reporting in the "Other race" and Other API categories may reflect reporting problems among populations that have grown rapidly through immigration during the past two decades and changing self-perceptions. The measures of consistency also provided evidence of reporting problems for some ancestry groups. Part of the difficulty may be related to question structure (that is, use of examples), ethnic flux, the result of high rates of intermarriage and of geographic and social mobility among certain groups, or the complexity of the concept.

An international conference on "The Measurement of Ethnicity", cosponsored by Statistics Canada and the U.S. Bureau of the Census focused on a broad array of current and future theoretical and practical issues, such as the ethnic flux, the effect of immigration, mobility, and other social and political factors on ethnicity, and the concepts of race and ethnicity. (Statistics Canada and U.S. Bureau of the Census, 1993). One of the major themes emerging from the conference was the need for the statistical agencies of the six countries represented at the conference to continue research on new approaches, methodologies, and concepts. Such research is needed to ensure data of high quality and to identify racial and ethnic concepts that are appropriate for the changing racial and ethnic populations of our nation.

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Table 1. Response to Race Question in the 1990 Census by Response in the Content Reinterview Survey (CRS)

CRS Classification	Census					
	Total	White	Black	American Indian, Eskimo, and Aleut	Asian and Pacific Islander	Other race
Total.....	23,844	20,357	2,245	109	504	629
White.....	20,497	20,002	34	33	21	407
Black.....	2,241	51	2,159	3	3	25
American Indian, Eskimo, and Aleut..	113	33	7	71	0	2
Asian and Pacific Islander.....	514	33	6	0	463	12
Other race.....	479	238	39	2	17	183
Percent Distribution by the Census Response						
Total.....	100.0	85.4	9.4	0.5	2.1	2.6
White.....	100.0	97.6	0.2	0.2	0.1	2.0
Black.....	100.0	2.3	96.3	0.1	0.1	1.1
American Indian, Eskimo, and Aleut..	100.0	29.2	6.2	62.8	-	1.8
Asian and Pacific Islander.....	100.0	6.4	1.2	-	90.1	2.3
Other race.....	100.0	49.7	8.1	0.4	3.5	38.2
Percent Distribution by the CRS Response						
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
White.....	86.0	98.3	1.5	30.3	4.2	64.7
Black.....	9.4	0.3	96.2	2.8	0.6	4.0
American Indian, Eskimo, and Aleut..	0.5	0.2	0.3	65.1	-	0.3
Asian and Pacific Islander.....	2.2	0.2	0.3	-	91.9	1.9
Other race.....	2.0	1.2	1.7	1.8	3.4	29.1

NOTE: Diagonal cells represent matched racial responses, i.e., the responses were the same for identified persons in both the CRS and the 1990 census.

Table 4. Response to Hispanic Origin Question in the 1990 Census by Response in the Content Reinterview Survey (CRS)

CRS Classification	Census					
	Total Hispanic	Mexican	Puerto Rican	Other Cuban	Hispanic	Not Hispanic
Total.....	23,771	1,516	890	182	68	376
Total Hispanic.....	1,580	1,400	860	175	62	303
Mexican.....	934	871	826	1	0	44
Puerto Rican.....	180	169	0	165	0	4
Cuban.....	69	63	1	0	57	5
Other Hispanic.....	397	297	33	9	5	250
Not Hispanic.....	22,191	116	30	7	6	73
Percent Distribution by 1990 Census Response						
Total.....	100.0	6.4	3.7	0.8	0.3	1.6
Total Hispanic.....	100.0	88.6	54.4	11.1	3.9	19.2
Mexican.....	100.0	93.3	88.4	0.1	-	4.7
Puerto Rican.....	100.0	93.9	-	91.7	-	2.2
Cuban.....	100.0	91.3	1.4	-	82.6	7.2
Other Hispanic.....	100.0	74.8	8.3	2.3	1.3	63.0
Not Hispanic.....	100.0	0.5	0.1	-	-	0.3
Percent Distribution by CRS Response						
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Total Hispanic.....	6.6	92.3	96.6	96.2	91.2	80.6
Mexican.....	3.9	57.5	92.8	0.5	-	11.7
Puerto Rican.....	0.8	11.1	-	90.7	-	1.1
Cuban.....	0.3	4.2	0.1	-	83.8	1.3
Other Hispanic.....	1.7	19.6	3.7	4.9	7.4	66.5
Not Hispanic.....	93.4	7.7	3.4	3.8	8.8	19.4

NOTE: Diagonal cells represent matched origin responses, i.e., the responses were the same for identified persons in both the CRS and the 1990 Census.

Table 2. Summary Measures and Response Errors for Race: 1990 CRS

Race Groups	Census	Index of CRS Inconsistency	90 Percent Confidence Interval	Net Difference Rate	90 Percent Confidence Interval
Total.....	23,844	23,844	15.8 15.0 to 16.7	0.0	0.0 to 0.0
White.....	20,357	20,497	14.5 13.7 to 15.4	-0.6	-0.8 to -0.4
Black.....	2,245	2,241	4.1 3.6 to 4.7	0.0	-0.1 to 0.1
American Indian, Eskimo, and Aleut..	109	113	36.2 30.1 to 43.5	0.0	-0.1 to 0.0
Asian and Pacific Islander.....	504	514	9.2 7.8 to 11.0	0.0	-0.1 to 0.0
Other race.....	629	479	68.5 64.5 to 72.8	0.6	0.4 to 0.8

Table 3. Summary Measures--Race by Hispanic Origin: 1990 CRS

Race	Index of Inconsistency				Net Difference Rate			
	Hispanic	90 Percent Confidence Interval	Non-Hispanic	90 Percent Confidence Interval	Hispanic	90 Percent Confidence Interval	Non-Hispanic	90 Percent Confidence Interval
Total.....	85.3	81.5 to 89.4	5.4	4.9 to 6.0	0.0	0.0 to 0.0	0.0	0.0 to 0.0
White.....	87.3	83.2 to 91.8	4.0	3.6 to 4.5	-11.6	-14.3 to -8.9	0.2	0.1 to 0.3
Black.....	76.3	62.7 to 92.8	2.5	2.1 to 2.9	-2.8	-3.7 to -1.9	0.2	0.1 to 0.3
American Indian, Eskimo, and Aleut..	54.1	29.3 to 99.7	34.8	28.6 to 42.4	-0.2	-0.5 to 0.1	0.0	-0.1 to 0.1
Asian and Pacific Islander.....	33.3	24.2 to 46.0	7.3	5.9 to 8.9	-0.8	-1.3 to -0.2	0.0	-0.1 to 0.1
Other race.....	90.8	86.4 to 95.6	96.7	82.7 to 112.9	15.4	12.7 to 18.1	-0.4	-0.5 to -0.3

Table 5. Summary Measures of Response Errors for Hispanic Origin: 1990 CRS

Hispanic Origin	Index of Inconsistency	90 Percent Confidence Interval	Net Difference Rate	90 Percent Confidence Interval
Total.....	13.5	12.4 to 14.6	0.0	0.0 to 0.0
Not Hispanic.....	10.2	9.3 to 11.3	0.3	0.1 to 0.4
Hispanic.....	10.2	9.3 to 11.3	-0.3	-0.4 to -0.1
Mexican.....	9.8	8.6 to 11.1	-0.2	-0.3 to -0.1
Puerto Rican.....	8.9	6.7 to 11.9	0.0	0.0 to 0.0
Cuban.....	16.8	12.0 to 23.7	0.0	0.0 to 0.0
Other Hispanic...	35.9	32.5 to 39.7	-0.1	-0.2 to 0.0

Table 6. Hispanic Origin Reported in the CRS by Persons Who Did and Did Not Respond to the Hispanic Origin Item in the 1990 Census

CRS Response to Hispanic origin	Did Not Answer Hispanic Item in Census		Did Answer Hispanic Item in Census	
	Number	Percent	Number	Percent
Total.....	912	100.0	24,047	100.0
Not Hispanic.....	853	93.5	22,296	92.7
Hispanic origin.....	55	6.0	1,683	7.0
Mexican.....	24	2.6	1,015	4.2
Puerto Rican.....	5	0.5	182	0.8
Cuban.....	2	0.2	74	0.3
Other Hispanic.....	24	2.6	412	1.7
No answer.....	4	0.4	68	0.3

Table 7. Summary Measures and Response Errors for Selected Ancestry Groups: 1990 CRS

Ancestry	Census	CRS	Index of Inconsistency	90 Percent Confidence Interval
Total.....	15,183	15,183	40.7	40.0 to 41.5
German.....	3,516	3,343	33.1	31.9 to 34.4
Irish.....	1,599	1,718	45.3	43.3 to 47.4
English.....	1,556	1,476	48.0	45.9 to 50.2
Afro American.....	1,318	1,133	14.8	13.5 to 16.2
Italian.....	792	813	18.9	17.1 to 20.8
American.....	826	681	79.2	75.4 to 83.2
Mexican.....	524	520	16.1	14.1 to 18.3
French.....	424	520	51.1	47.4 to 55.2
Polish.....	475	459	24.5	22.0 to 27.4
American Dutch....	271	274	66.7	61.1 to 72.8
Dutch.....	268	284	48.0	43.3 to 53.1
Scottish Irish.....	380	145	76.7	70.6 to 83.3
Scottish.....	257	565	65.0	60.5 to 69.9
Swedish.....	202	217	37.5	32.9 to 42.8
Norwegian.....	241	260	31.5	27.6 to 35.9
Russian.....	136	150	40.2	34.5 to 46.9
French Canadian...	115	55	70.9	61.0 to 82.4
Welsh.....	79	73	55.5	46.4 to 66.5
Spanish.....	16	29	77.9	59.0 to 102.8
Puerto Rican.....	88	81	23.2	17.8 to 30.2
Slovak.....	90	57	44.4	36.2 to 54.5
White.....	117	28	87.8	75.9 to 101.6
Danish.....	77	70	40.3	32.6 to 49.9
Hungarian.....	98	108	22.5	17.6 to 28.6
Chinese.....	63	80	23.2	17.4 to 30.8
Filipino.....	74	72	16.5	11.8 to 23.1
Czech.....	67	95	48.4	40.2 to 58.3
Portuguese.....	53	55	14.9	9.9 to 22.4
Other ancestry....	1,461	1,822	48.3	46.2 to 50.4

Figure 1. Index of Inconsistency for Race by Hispanic Origin: 1990

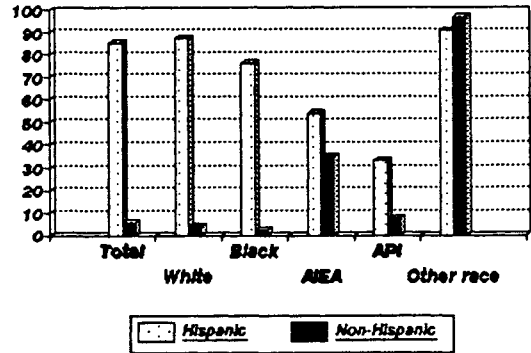


Figure 2. Index of Inconsistency for Race by Nativity: 1990

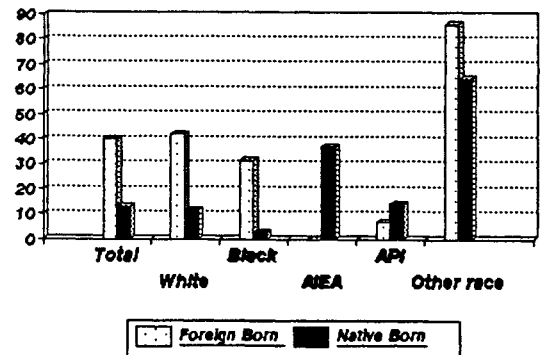
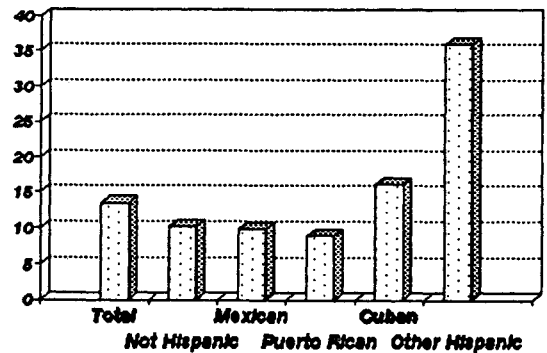


Figure 3. Index of Inconsistency for Hispanic Origin by Type: 1990



Note: AIEA refers to American Indian, Eskimo, and Aleut. API refers to Asian and Pacific Islander.