Trends in the U.S. Multiracial Population from 1990–2000

An ESRI® White Paper • November 2005

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(This paper was presented at the Southern Demographic Association Annual Meeting in Miami, Florida, on October 13, 2001, by Sangita Vashi, Data Development, ESRI.)

Summary This paper presents a probabilistic approach to estimate the multiracial population in 1990. Assuming that the probability of reporting more than one race varies by race and geographic area (as shown by Census 2000 data), one can estimate the number of likely multiple race reporters from 1990 Census data. The same approach is adopted for the population by Hispanic origin and race. This approach affords not only a correspondence between the two censuses but also the opportunity to measure change in both single- and multirace populations.

Background

From the great wave of European immigration in the mid-19th century to the rapid growth of Asian immigrants in the 20th century, the United States continues to boast the highest immigration rates in the world. U.S. immigration laws not only govern the level of immigration but also control the diversity of the nation's foreign-born population. The 1924 Johnson-Reed Immigration Act admits foreign nationals that are underrepresented in the resident U.S. population, hence promoting a diverse American population. Balancing the population of each nationality and race in America represents only one dimension of diversification. Today, diversity is truly a two-dimensional concept; the second dimension captures high rates of interracial marriage stemming from racially heterogeneous communities and, in turn, increases the proportion of multiple-race children in future generations.

The collection of race and ethnicity data has evolved over the 210-year history of data collection in the U.S. Census in response to trends in immigration to accommodate social and political requirements in race reporting. For example, Asian Indians were classified as Hindus in the 1920 to 1940 censuses, as White from 1950 to 1970, and as Asian and Pacific Islanders since 1980. No amount of research can ensure that the census race question is designed to meet current trends. By 1990, evidence of an increasing multiracial population had already mounted. The Census Bureau reported 7.5 percent annual growth in interracial couples between 1960 and 1990 (U.S. Bureau of the Census, 1998). In 1990, more than two million children were reported as belonging to a different race from one or both of their parents (U.S. Bureau of the Census, 1998). Legislative influence and the technological challenge of offering a multiple race option in the census delayed the modification of the race question from the five mutually exclusive categories (White, Black, American Indian, Asian and Pacific Islander, and Other Races). Technological advances coupled with increasing pressure from individuals and agencies caused a review of the Office of Management and Budget (OMB) Race and Ethnic Standards for Federal Statistics and Administrative Reporting that resulted in the implementation of new multiracial classifications in Census 2000 (U.S. Office of Management and Budget, 1999).

Census questions, terms, and definitions have changed over time to improve the quality of data collected in the census and its ability to reflect the rapid and ongoing change in the racial makeup of the United States as well as meet the demands of political and social stakeholders. In the early days of the census, it was common practice for enumerators to complete the census race question for the individual, judging the person's race solely on external appearance. Beginning in 1960, individuals filled out the census race question. Self-identification had a minimal impact on the reported race distribution between the 1950 and 1960 censuses (Hirschman, Alba, and Farley 2000). The continued restriction imposed on the individual to report only one race is likely to have minimized disturbance to the time series from 1950 to 1960; however, self-identification did lead to an increase in the Other Races population. Before 1960, enumerators assigned the population to one main race. After 1990, the Census Bureau released modified race counts, in other words, assigning population of Other Races back to one of the four race groups to remain consistent with OMB's classification of race into four main race groups. For

decades, the Census Bureau has been modifying data in some form to meet alternative classification standards.

Though change has characterized race reporting in the census, few changes have caused as much consternation as the introduction of the multiple race option in Census 2000. This severely curtails the comparability of Census 2000 race data with that of the 1990 Census. Any analysis of racial trends in the United States between 1990 and 2000 must rely on an effective bridging method.

Proposed bridging methods focus on estimating Census 2000 race in the neat, single-race categories of the 1990 Census. Although the multiracial population has not been formally counted in previous censuses, it has been a key feature in the shaping of the U.S. population today. If we are to understand the development of the nation's multiracial population in the years to come, we need to quantify the growth in the last decade. This is the goal of the proposed model to estimate the multiracial population in 1990.

Options for Bridging Race in the 1990 and 2000 Censuses

OMB's recommendations for bridging focus on comparing 1990 race to 2000 race in 1990 race classification standards. Its simplest suggestion compares only the 2000 single-race reporters to the 1990 Census's single-race categories. Because multiracial reporters are not included, this process underestimates the change for each race population. Likewise, a comparison of 2000 single plus multiracial groups with 1990 single races overestimates the change by race because multiracial reporters are counted with each race reported.

A more advanced and widely discussed approach determines a singular assignment, which identifies *one* race group to which multiple race combinations are allocated. This idea is appealing because multiracial individuals would have selected one race with which they most closely identify without the opportunity to report multiple races. Because the basis of race reporting is self-identification, the issue here is to establish a dominant race in any multiracial combination. OMB presents four possible choices. Three of the four options rely on a predetermined set of rules to assign multiracial population back to traditional single races. Assuming that a multiracial individual is influenced by the majority race in an area, the first option assigns all multiracial people to the largest single race population in the area. In most areas, this is the White race. The second alternative assigns the multiracial population to the largest race other than White, in other words, the dominant "minority" race group. The third choice allocates the multiracial population to the component race group that has the smallest representation in the single-race population count. Finally, a plurality method is recommended to reassign the multiracial population from survey results. OMB employed the National Health Interview Survey (NHIS) to ask the "main" race of a respondent with a follow-up question to determine multiple race information from which to develop a correspondence between single-race and multiple-race responses. The predominant single race selected by multiracial respondents is accepted as the race to which all the multiracial population is allocated.

Another approach is a deterministic, equal fractional assignment, which apportions population equally to the component races of the multiracial group. This approach overestimates growth for less populous race groups, highlighting the fact that a multiracial individual not having the opportunity to report multiple races makes a *determined* selection under cultural and social influences of the neighborhood in which he or she resides. Modification of this method is a deterministic, unequal fractional assignment. OMB employs empirical results from NHIS to apportion multiracial population, whereas Allen and Turner (Allen and Turner 2001, Population Association of America) estimate fractions based on the 1990 Ancestry response (Public Use Microdata Sample Files).

The same NHIS correspondence used in the plurality approach above is applied in the deterministic, unequal fractional method. In this method, however, a multiracial population of a given combination, for example, white and black, is subdivided into single race groups by the proportions of NHIS households that report each race as their main race. The use of the NHIS correspondence is limited because the multiracial population was coded using only two race components; the influence of three- to five-race combinations is unidentified. Allen and Turner assume that a relationship exists and can be inferred between race and ancestry. Assuming the expected relationship remained stable between 1990 and 2000, Allen and Turner estimate national fractions from the cross-tabulation of race and ancestry.

Though the simplicity of these deterministic bridging methods is appealing, they cannot capture any regional variation. Why is regional variation important? The need for geographic variation in a model is driven by a strong influence of demographic and social characteristics in the process of identifying one's racial identity. Race does not separate people by any cultural, social, or economic divide; therefore, two people of the same race may have very different cultural backgrounds that affect their race decision. A feasible model cannot capture these influences at an individual or family level; however, the influence of community culture may be incorporated if the model is built as a summation of smaller geographic units such as block groups.

Probabilistic methods are also proposed. These methods assign people of the same multiracial type to different single-race groups by probabilities estimated from complementary surveys such as the NHIS. Similar to deterministic methods, probabilistic methods may be subdivided into whole (singular) assignment or fractional assignment. According to OMB, probabilistic whole assignment and deterministic fractional assignment produced similar results in their tests, but researchers believe that in practice both methods would underestimate the true variance of the dominant race in multiracial population. In deterministic methods, this is intuitive because all multiracial individuals are reallocated by a fixed rule, leaving little room for variation. Although probabilistic methods introduce more variation, applying the method to national data still inhibits variation.

In this research, the need for bridging 1990 and 2000 race reports is fulfilled by the estimation of the multiracial population in 1990. As an intermediate step to achieving this objective, the principles of fractional techniques are built on the

degree of multiple-race reporting in 2000 that is characteristic to each core race. By measuring a degree of multiracial reporting among core races in a conditional probability framework, it is assumed that component races of a multiracial combination do not contribute evenly to traditional race populations. In effect, this approach sources Census 2000 data for fractions in an unequal fractional measurement of the degree of multiracial reporting by traditional race populations. The strength of ESRI® methodology is that this fractional measurement is computed for each block group in the United States. Because the same multiracial type is assigned to traditional single races by different fractions across areas in the United States, this approach may be classified as probabilistic. In summary, the ESRI approach to understanding the shift of population due to multiracial reporting away from traditional single-race groups in 2000 relies on a probabilistic and fractional measurement technique.

Estimating the 1990 Multiracial Population

The model presented to estimate the 1990 multiracial population is built on the principle that diversity is a two-dimensional concept. The first dimension of diversity encompasses the balance of the race groups represented in an area. The more evenly that people are distributed in an area across the six race categories (White; Black; American Indian and Alaskan Native; Asian, Pacific Islander, or Native Hawaiian; and Other Race), the higher the first dimension of diversity. The opportunity for social interaction across races is increased, so the probability of interracial marriage is higher. Historically high immigration rates and growing rates of interracial marriage are the driving force behind the growth in the country's multiple race population. In other words, the second dimension of diversity stems from the first.

Race reporting reflects self-identification. Racial identity is personal. Cultural influences and social interaction with the community play a role in the race reported. Embedded in the distribution of population across an area's race groups is the characterization and quantification of cultural and community influence. Because this model is built as a summation of neighborhoods (block groups) in the United States, these factors are captured and employed to estimate the diversity of each area.

The statistical analysis is predicated on the assumption that in any given area, social circumstances and cultural influences that affected the individual's race decision in 2000 were similar in 1990. In addition to geographic differentiation, the model depicts the variation in tendency to report multiple races by each group. Using Census 2000 data, the tendency to report multiple races is estimated by race group as well as by smaller geographic units and applied to Census 1990 population by race data.

Here is a two-step model.

Step One: Analyze multiracial trends in Census 2000.

Census 2000 provides the most detailed data (population by 63 race groups) to date on the multiracial population of the United States, enabling area-specific study.

Conditional probability techniques are utilized to assess the degree of multiple-race reporting, expressed as the Multiplicity Index (MI), within each of the six core race groups in 2000. This analysis is supported by the assumption that the probability of any person claiming multiple races is related to the racial composition of their neighborhood. The distinct advantage of using a conditional probability approach lies in its capability to summarize the dominance of White; Black; American Indian and Alaskan Native; Asian, Pacific Islander, and Native Hawaiian; and Other Race in all 57 multiracial combinations.

The Multiplicity Index is calculated as the weighted sum over six possible race combinations (single-race to six-race combination), of probabilities of reporting race R (anywhere in the combination), given that n races are reported in the combination (adjusted to one) less the probability of reporting race R in a single race combination.

$$MI(R) = \Sigma^{n=N} P(R|n) \times P(n) - P(R|n=1)$$

n = number of races in combination
R = core race group

The Multiplicity Index takes a range of -1 to +1. The magnitude of the index represents the degree of multiracial reporting that is occurring in a race, whereas the sign of the index indicates the direction in which population is shifting when the opportunity to report multiple races is available. For example, a negative index, MI(R), implies a shift of population away from the core race R or, in other words, the tendency of a population that traditionally reported race R as its dominant race now reporting race R in combination with another race. In any given area, the Multiplicity Index is designed to sum to zero; therefore, all individuals have an underlying dominant race.

Embedded in the unique combination of multiplicity indexes for each geographic area is the means to differentiate both demographic and geographic influence on the race identification process. For example, the effect on multiracial reporting in an area with one race dominating the population is captured in the higher magnitude of the multiplicity percentages for this race as compared to the level for each of the other race groups. This affirms the assumption that multiracial people without the opportunity to report multiple races are much more likely to report the dominant race of the community in which they live.

Step Two: Estimate the multiracial population in 1990.

It is assumed that geodemographic factors affecting the individual's race decision remained stable between 1990 and 2000. Therefore, the contribution to the multiracial population by each core race is determined by applying the absolute value of the Multiplicity Index to the corresponding 1990 core race population. The total multiracial population in 1990 is the sum of the contribution to multiracial population across all six core races.

At this point, it is important to note that multiplicity indexes are estimated from Census 2000 in 2000 geography. Before multiplicity indexes were applied to 1990 block group race data, 1990 block group data was estimated in 2000 geography. The same approach is applied to the population of Hispanic origin. The Hispanic Multiplicity Index is computed from the 2000 Hispanic origin by race distribution and applied to 1990 Hispanic race populations.

Results and Analysis

The resulting estimates of a multiracial population in 1990 are compared first to the Census 2000 counts to obtain a measure of change from 1990 to 2000, then to related statistics, such as interracial marriages, to corroborate the estimated change. The effect of the multiracial population on traditional race populations is assessed. State results are then reviewed using a diversity index to measure the effect of the multiracial population on local race composition. The discussion finally focuses on Hispanic multiracial trends.

National Trends

- In 1990, 1.41 percent of the U.S. population was multiracial, compared to 2.4 percent in 2000.
- The multiracial population grew at a rate of 6.9 percent annually between 1990 and 2000[1].
- The U.S. Diversity Index was 0.46 in 1990 and 0.55 in 2000[2].
- The diversity of the U.S. population increased during the last decade at a rate of 1.65 percent annually.

Annual growth in the multiracial population of the United States between 1990 and 2000, at 6.9 percent, exceeded the growth of every single race group. This growth stems from the 7.5 percent annual growth in interracial couples between the 1960 and 1990 censuses and more than 4.5 percent growth between 1970 and 1990 in children who are of a different race from one or both of their parents. By comparison, same-race marriages increased at an annual rate of less than 1 percent.

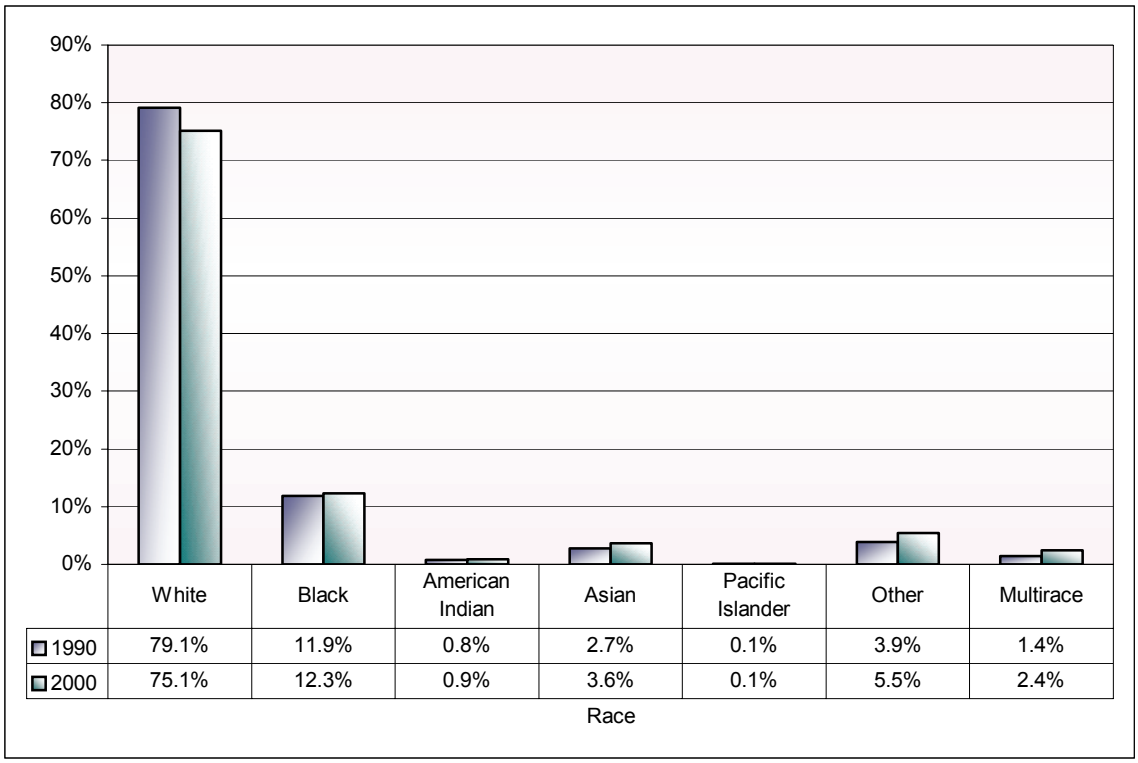
Results for 1990 estimate the reduction in single-race populations to accommodate the shift toward multiple races as -1.5 percent White, -1.2 percent Black, -0.7 percent American Indian, -1.5 percent Asian and Pacific Islander, and -0.8 percent from the Other Races' population. Comparable results from the Race and Ethnic Targeted Test (RAETT) 1996, Panel C show 1.4 percent of the targeted White sample as multiracial, and 1.8 percent, 4.2 percent, and 10 percent of the targeted Black, American Indian, and Asian/Pacific Islander samples were multiracial, respectively (U.S. Census Bureau, 1997). Although RAETT was also based on a targeted sample design, the increasing magnitude of the shift from traditional, single-race populations

[1] Annual compound growth rate

[2] The Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons, chosen at random from the same area, belong to a different race group. This diversity measure includes a component for Ethnic Diversity.

to multiple-race reporting reflects the growing diversity of the American population between 1990 and 1996.

Figure 1
1990 and 2000 National Race Profile



This approach to estimating the multiple race population in 1990 affords a breakdown of the multiracial population by dominant race. White was the primary component in the multiracial population in 1990 with 84 percent, followed by 10 percent Black and 2 percent Other Races. Six years later, results of the 1996 National Content Survey show only 80 percent of multiple race responses with White in the combination. The decline in the White majority between 1990 and 1997 is expected and explained in the diversification trend of the United States. In 1990, the country was less diverse than in 2000; the U.S. population is diversifying at a rate of 1.7 percent per year. It is expected that as the country diversifies, the primacy of the White race in the multiracial population will decrease and traditionally minority race populations will increase.

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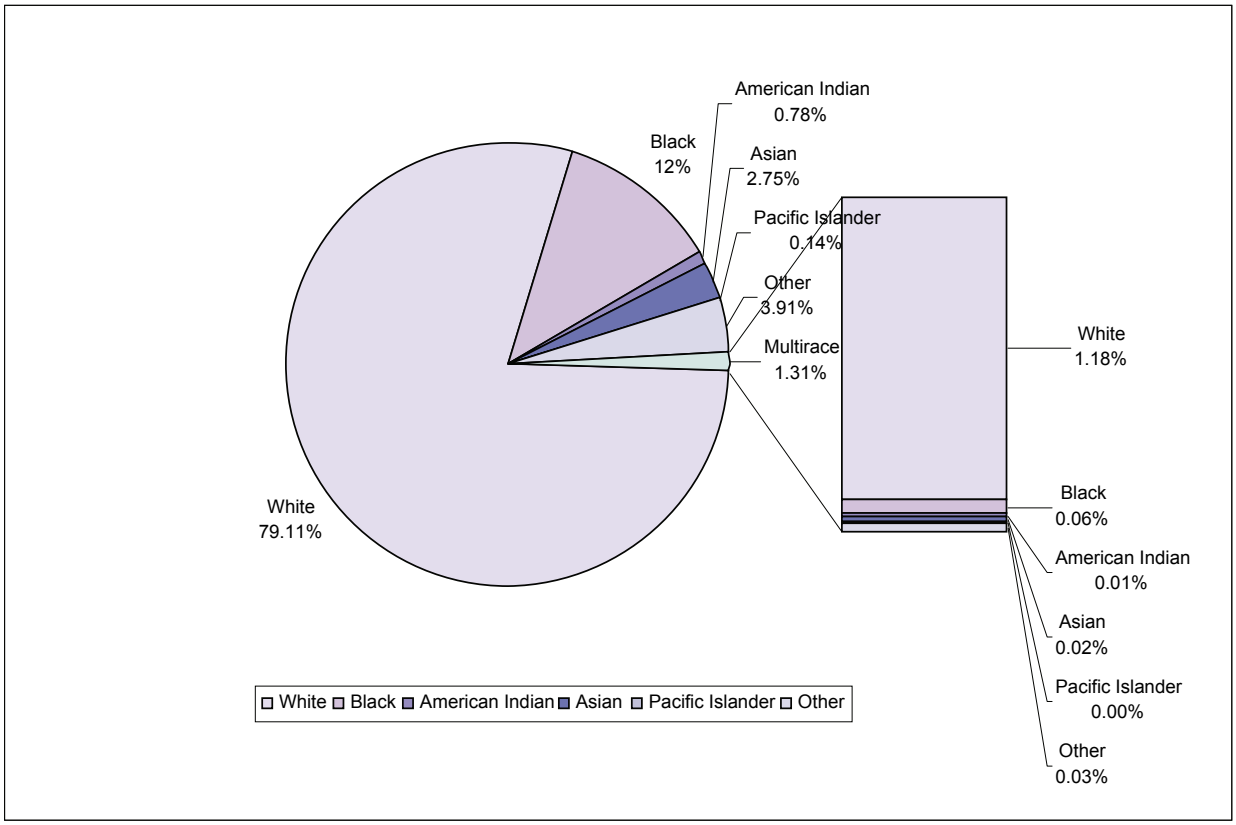
Figure 2
1990 Race Profile with a Breakdown of the Dominant Race of the Multirace Population



National Hispanic Race Trends

- In 1990, 1.31 percent of the U.S. population was multiracial.
- The multiracial population grew at a rate of 22.5 percent annually between 1990 and 2000.

The previous decade has seen 4.7 percent annual growth in the Hispanic population in contrast to the 1.2 percent growth in the total population. This has been fueled largely by high immigration in the past 30–40 years but also by the higher birth rates among Hispanic women. Between 1989 and 1996, birth rates in the Hispanic population averaged 26 live births per 1,000 women while the non-Hispanic population had 14.6 live births per 1,000 women in the same time period (National Center for Health Statistics, 1998).

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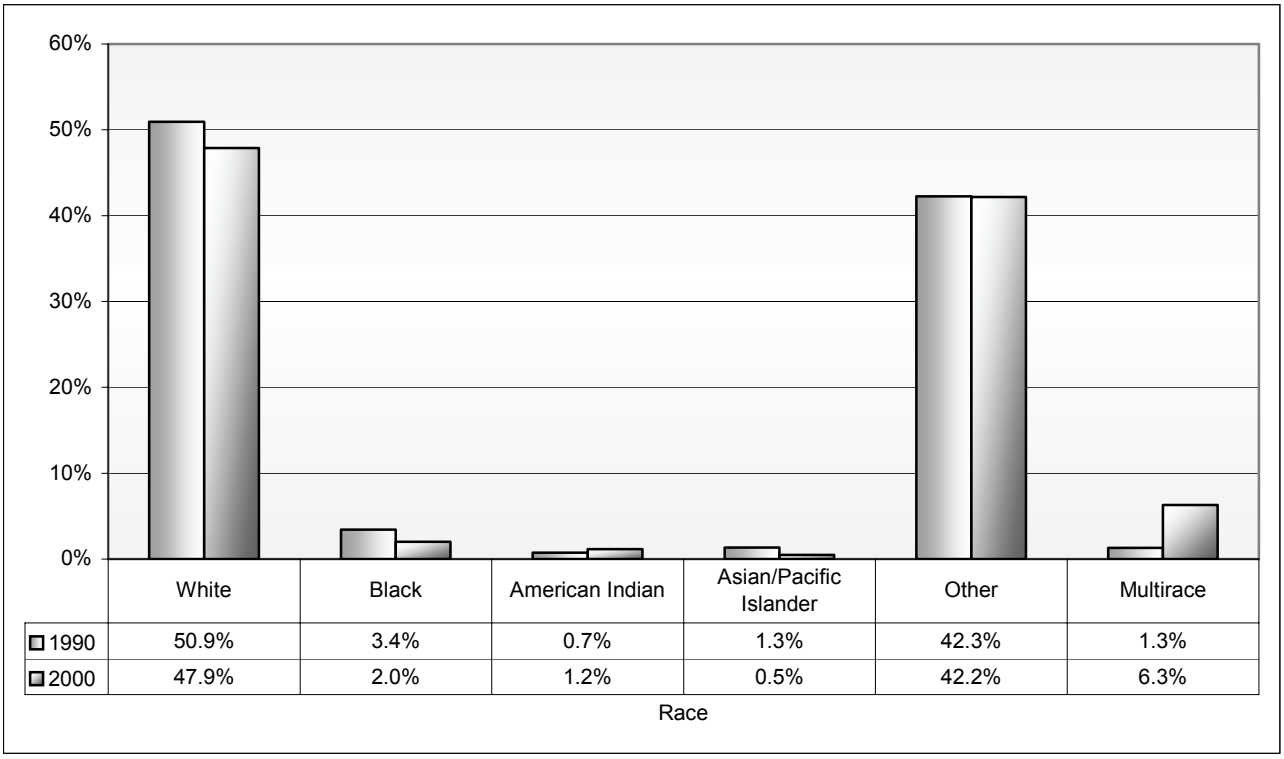
Figure 3
1990 and 2000 Hispanic Race Profile



The results of this model show the shift toward multiple-race reporting in the 1990 Hispanic population by race to be -1.5 percent, -0.7 percent, -0.1 percent, -1.5 percent, and -1.1 percent of the White, Black, American Indian and Alaskan Native, Asian and Pacific Islander, and Other Race original 1990 populations, respectively. Of the 1.3 percent of Hispanics estimated to be multiracial in 1990, 60 percent reported White, 1.7 percent reported Black, 0.1 percent reported American Indian, 1.5 percent reported Asian and Pacific Islander, and 36.8 percent reported Other Race as their dominant race. By the measure, one can judge that this model is extracting multiracial Hispanics in the correct proportions from original 1990 Hispanic race populations. Because it is known that more than 90 percent of Other Race Hispanics misreport their race in the census and are, in fact, White, it is clear that the level of contribution to multiracial by Some Other Race and White populations should reflect this trend. The results of this model show that more than 96 percent of the traditional 1990 White and Other Race populations are multiracial, further confirming the point that the reporting of multiracial is driven by the dominant race in a neighborhood. In Hispanic populations, the combination of White and Other Race populations must be considered the dominant race.

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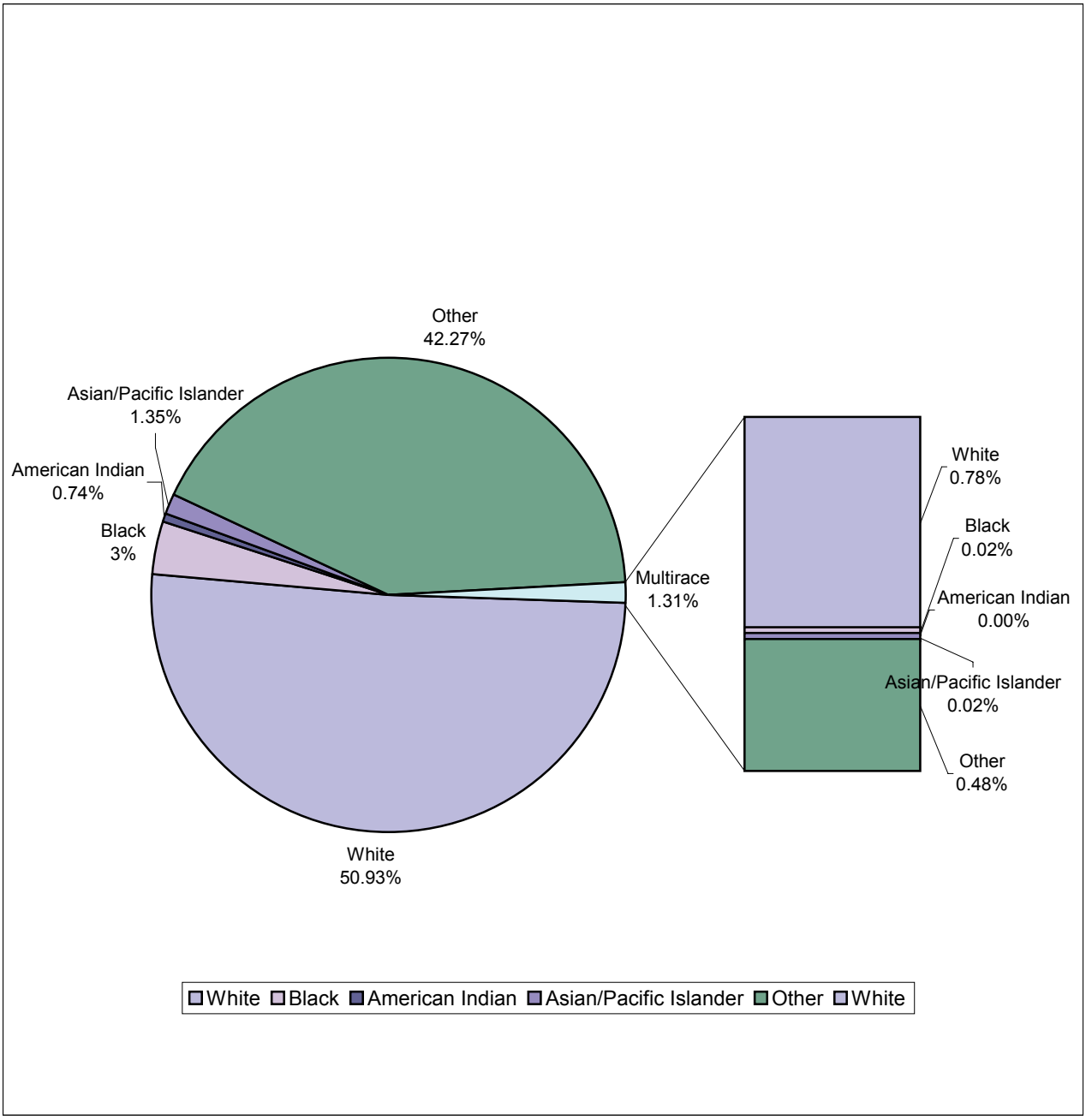
Figure 4
1990 Hispanic Race Profile with a Breakdown of Multiracial by Dominant Races



Diversity

Note: 1990 and 2000 diversity figures are presented in the appendixes.

The Diversity Index was developed shortly after the 1990 Census by Phil Meyer of University of North Carolina and Shawn McIntosh of *USA TODAY*. The index was recently adapted to Census 2000 race categories by Meyer and Paul Overberg of *USA TODAY*.

The Diversity Index is the likelihood that two persons, chosen at random from the same area, belong to a different race and ethnic group. A totally diverse or 100 percent diverse population is one where a variety of races is evenly represented. The multiracial population represents total diversity. Therefore, an area with only multiracial people is considered wholly diverse. Without accounting for multiple races in a race distribution, the diversity of an area is underestimated. A comparison of diversity computed from the original 1990 Census-reported races to the revised 1990 race distribution, including multiple races, demonstrates the effect of including a multiracial estimate in 1990.

Across all regions, the original 1990 Census data implied a rate of diversification to 2000 that is not supported by any independent studies/analyses. Without an estimate of the multiracial population in 1990, the change in the racial/ethnic composition of an area is overestimated. For example, diversity measured by use of original 1990 Census data means that two of the least varied states, Maine and Vermont, diversified at 5.7 and 7.3 percent, respectively, from 1990 to 2000. These rates are not reflected in their single-race profiles.

Recalculating the 1990 race distribution to include a multiracial population reduces the change in Maine and Vermont to annual rates of 1.8 and 2.4 percent, respectively. Hawaii exhibited the highest diversity across states both in 1990 and 2000, with 74 percent and 79 percent, respectively. Led by decades of high immigration, states such as California (71 percent), New Mexico (71 percent), and New York (60 percent) were also among the most diverse states in 1990. These regional patterns are emphasized by 1990 (estimated) single-race distributions that reveal an overwhelming White majority of more than 97 percent in the two least diverse states and a more balanced race profile in Hawaii.

Conclusion

The multiracial population is not new, but a count of this population is. Census 2000 provides the most detailed and accurate profile of the multiracial population in the United States to date. The 2000 counts enable the complex probability analysis presented here and a measure of the contribution to the multiple race population made by traditional race populations. Intuitively, one might expect this approach to overestimate 1990 multiracial groups; however, the methodology precludes this bias. This approach *overlays* the potential for multiracial reporting calculated from 2000 data onto the original 1990 race distribution. An area's 1990 race profile carries its own unique characteristics that over the decade will be subject to immigration, migration, and birth and death rates, as is the total population. Although this model assumes some stability in the race distribution between 1990 and 2000, the multiplicity indexes are applied to a less diverse population in 1990 to profile multiple races in 1990.

The question is whether the estimated 4.7 percent annual growth in the total U.S. Hispanic population can support the estimated 22.5 percent annual growth in multiracial Hispanic people. The success of this methodology in estimating the total multiracial population in 1990 supports the application of the method to Hispanic data. One factor to note is the change in format of the Race/Hispanic origin questions in the censuses of 1990 and 2000.

Historically, the accuracy of race counts for the Hispanic origin population has been hindered by poor enumeration due to misinterpretation of the census questions on race and ethnicity. Extensive research to resolve the misreporting of race among Hispanics produced a modification of the race and ethnic origin questions in Census 2000. The Hispanic origin question preceded the race question in Census 2000, just the opposite of the 1990 Census questionnaire in which race preceded the Hispanic origin question. Census 2000 does not show the expected decline in the proportion of Hispanics reporting Other Races. In some neighborhoods, this abrupt change in an individual's interpretation of the race/ethnicity questions coupled with explosive growth in Hispanic population has caused significant changes in the Hispanic race distribution between 1990 and 2000. Because this method relies on the stability of the reported race distribution, any impact on 1990 Hispanic multiple race estimates must be assessed.

References

Centers for Disease Control and Prevention/National Center for Health Statistics. "Monthly Vital Statistics Report." Vol. 46, No. 11(S), June 30, 1998.

Hirschman, Charles, Richard Alba, and Reynolds Farley. "The Meaning and Measurement of Race in the U.S. Census: Glimpses into the Future." *Demography* 37: 381–393, 2000.

Immigration and Naturalization Service. "1998 Statistical Yearbook of the Immigration and Naturalization Service: Table 18. Immigrants Admitted by State of Intended Residence, Fiscal Year 1988–1998."

United Nations. "Principles and Recommendations for Population and Housing Censuses," *Statistical Papers, Series M*. No. 67/Rev. 1, New York, NY: United Nations, 1998.

United States Information Agency. "Portrait of the USA." September 1997.

U.S. Census Bureau, 1998 Interracial Tables. Table 4, "Race of Child by Race of Householder and of Spouse or Partner: 1990," and Interracial Tables, Table 1, "Race of Wife by Race of Husband: 1960, 1970, 1980, 1991, and 1992" (1990 Census of Population and Housing).

U.S. Census Bureau. "Results of the 1996 Race and Ethnic Targeted Test" (Staff in Population Division and Decennial Statistical Studies Division, U.S. Bureau of the Census), 1997.

U.S. Office of Management and Budget. "Draft Provisional Guidance on the Implementation of 1997 Standards for Federal Data on Race and Ethnicity." Prepared by the Tabulation Working Group of the Interagency Committee for the Review of Standards for Data on Race and Ethnicity (Executive Office of the President, February 17, 1999).

U.S. Office of Management and Budget. "Provisional Guidance on the Implementation of 1997 Standards for Federal Data on Race and Ethnicity" (Executive Office of the President, December 15, 2000).

U.S. Office of Management and Budget. "Recommendations from the Interagency Committee for the Review of the Racial and Ethnic Standards to the Office of Management and Budget Concerning Changes to the Standards for the Classification of Federal Data on Race and Ethnicity" (*Federal Register* 7/9/97, Part II. Pages 36,873–36,946).

Appendix A: U.S. Results

Figure A-1
1990 U.S. Race Distribution Including Multiracial

	1990 Population	Percent
White	196,724,522	79.1
Black	29,626,216	11.9
American Indian or Alaska Native	1,946,194	0.8
Asian	6,813,558	2.7
Native Hawaiian or Other Pacific Islander	354,001	0.1
Other Race	9,729,743	3.9
Multiple Races	3,515,639	1.4
Total	248,709,873	

Figure A-2
1990 U.S. Hispanic Race Distribution Including Multiracial

	1990 Population	Percent
White	11,382,491	50.9
Black	764,465	3.4
American Indian or Alaska Native	165,222	0.7
Asian/Native Hawaiian or Other Pacific Islander	300,795	1.3
Other Race	9,448,518	42.3
Multiple Races	292,568	1.31
Total	22,350,946	

Appendix B: Census 1990 Multiple Race Profiles by State

State	White Single	Black Single	American Indian Single	Asian Single	Pacific Islander Single	Other Race Single	Multiple Race	Rank Multiple Race	Percent Hispanic	Diversity
Alabama	73.1	25.1	0.4	0.5	0.0	0.1	0.7	49	0.6	41.0
Alaska	72.8	4.1	15.3	3.2	0.3	1.2	3.1	2	3.2	47.9
Arizona	79.3	3.0	5.5	1.4	0.1	9.0	1.7	14	18.8	56.1
Arkansas	81.8	15.8	0.5	0.5	0.0	0.3	1.0	39	0.8	31.7
California	67.3	7.3	0.8	9.1	0.4	13.1	1.9	8	25.8	71.2
Colorado	86.3	4.0	0.8	1.7	0.1	5.1	2.0	7	12.9	42.1
Connecticut	85.7	8.2	0.2	1.5	0.0	2.9	1.4	23	6.5	34.8
Delaware	79.3	16.7	0.3	1.3	0.0	1.1	1.1	30	2.4	37.3
District of Columbia	29.1	64.7	0.2	1.8	0.0	2.4	1.7	15	5.4	54.8
Florida	81.6	13.4	0.3	1.2	0.0	1.8	1.7	12	12.2	46.2
Georgia	70.4	26.7	0.2	1.1	0.0	0.7	0.9	43	1.7	45.2
Hawaii	31.4	2.4	0.5	42.3	13.7	1.9	7.9	1	7.3	74.4
Idaho	92.7	0.3	1.4	0.8	0.1	3.0	1.7	13	5.3	22.6
Illinois	77.4	14.7	0.2	2.5	0.0	4.1	1.1	31	7.9	46.9
Indiana	89.6	7.7	0.2	0.7	0.0	0.7	1.0	40	1.8	21.9
Iowa	95.7	1.7	0.3	0.9	0.0	0.5	0.9	41	1.2	10.5
Kansas	88.6	5.7	0.9	1.2	0.0	2.0	1.6	19	3.8	26.9
Kentucky	91.2	7.1	0.2	0.5	0.0	0.2	0.9	44	0.6	17.2
Louisiana	66.8	30.6	0.4	1.0	0.0	0.5	0.7	48	2.2	48.4
Maine	97.4	0.4	0.5	0.5	0.0	0.1	1.0	38	0.6	6.2
Maryland	70.2	24.6	0.3	2.9	0.0	0.9	1.1	28	2.6	47.5
Massachusetts	88.3	4.9	0.2	2.4	0.0	2.5	1.6	16	4.8	28.8
Michigan	82.2	13.7	0.6	1.1	0.0	0.9	1.5	21	2.2	33.5
Minnesota	93.1	2.1	1.1	1.8	0.0	0.5	1.3	24	1.2	15.3
Mississippi	63.2	35.4	0.3	0.5	0.0	0.1	0.5	51	0.6	48.2
Missouri	86.6	10.6	0.4	0.8	0.0	0.4	1.2	27	1.2	25.7
Montana	91.3	0.3	5.9	0.5	0.0	0.5	1.5	20	1.5	18.8
Nebraska	92.8	3.6	0.8	0.8	0.0	1.0	1.1	34	2.3	17.8
Nevada	82.1	6.5	1.6	2.9	0.2	4.4	2.3	6	10.4	44.7
New Hampshire	97.0	0.6	0.2	0.8	0.0	0.3	1.1	35	1.0	7.8
New Jersey	78.2	13.1	0.2	3.5	0.0	3.5	1.5	22	9.6	47.9
New Mexico	74.0	2.0	8.8	0.9	0.1	12.5	1.8	10	38.2	70.7
New York	73.3	15.5	0.3	3.8	0.0	5.4	1.6	17	12.3	55.9
North Carolina	74.9	21.8	1.2	0.8	0.0	0.5	0.8	46	1.2	40.5
North Dakota	93.6	0.5	4.0	0.5	0.0	0.3	1.0	36	0.7	13.6
Ohio	86.8	10.5	0.2	0.8	0.0	0.5	1.1	32	1.3	25.5
Oklahoma	79.7	7.3	7.9	1.0	0.0	1.3	2.7	3	2.7	38.8
Oregon	90.3	1.6	1.3	2.3	0.2	1.8	2.5	5	4.0	24.5
Pennsylvania	87.8	9.0	0.1	1.1	0.0	1.0	0.9	42	2.0	25.1
Rhode Island	89.6	3.8	0.4	1.8	0.0	2.4	1.9	9	4.6	26.5
South Carolina	68.5	29.7	0.2	0.6	0.0	0.3	0.6	50	0.9	45.2
South Dakota	90.5	0.5	7.2	0.4	0.0	0.2	1.1	33	0.8	18.7
Tennessee	82.3	15.8	0.2	0.6	0.0	0.2	0.8	45	0.7	30.7
Texas	74.1	11.8	0.4	1.8	0.0	10.6	1.3	25	25.5	65.1
Utah	92.1	0.7	1.4	1.5	0.4	2.2	1.7	11	4.9	23.1
Vermont	97.4	0.3	0.3	0.6	0.0	0.1	1.2	26	0.7	6.3
Virginia	76.5	18.7	0.2	2.5	0.0	0.9	1.1	29	2.6	41.1
Washington	86.0	3.1	1.7	4.0	0.3	2.4	2.6	4	4.4	32.0
West Virginia	95.4	3.1	0.1	0.4	0.0	0.1	0.8	47	0.5	9.7
Wisconsin	91.3	4.9	0.8	1.1	0.0	0.9	1.0	37	1.9	19.5
Wyoming	92.6	0.8	2.1	0.6	0.0	2.3	1.6	18	5.7	23.4

Appendix C: Census 2000 Multiple Race Profiles by State

State	White Single	Black Single	American Indian Single	Asian Single	Pacific Islander Single	Other Single	Multiple	Rank Multiple Race	%Hisp	Diversity
Alabama	71.1	26.0	0.5	0.7	0.0	0.7	1.0	48	1.7	44.6
Alaska	69.3	3.5	15.6	4.0	0.5	1.6	5.4	2	4.1	53.2
Arizona	75.5	3.1	5.0	1.8	0.1	11.6	2.9	10	25.3	64.3
Arkansas	80.0	15.7	0.7	0.8	0.1	1.5	1.3	35	3.2	37.7
California	59.5	6.7	1.0	10.9	0.3	16.8	4.7	3	32.4	79.1
Colorado	82.8	3.8	1.0	2.2	0.1	7.2	2.8	11	17.1	50.8
Connecticut	81.6	9.1	0.3	2.4	0.0	4.3	2.2	18	9.4	44.0
Delaware	74.6	19.2	0.3	2.1	0.0	2.0	1.7	29	4.8	46.0
District of Columbia	30.8	60.0	0.3	2.7	0.1	3.8	2.4	16	7.9	61.0
Florida	78.0	14.6	0.3	1.7	0.1	3.0	2.4	15	16.8	54.6
Georgia	65.1	28.7	0.3	2.1	0.1	2.4	1.4	32	5.3	54.5
Hawaii	24.3	1.8	0.3	41.6	9.4	1.3	21.4	1	7.2	79.1
Idaho	91.0	0.4	1.4	0.9	0.1	4.2	2.0	22	7.9	29.2
Illinois	73.5	15.1	0.2	3.4	0.0	5.8	1.9	25	12.3	55.8
Indiana	87.5	8.4	0.3	1.0	0.0	1.6	1.2	38	3.5	28.0
Iowa	93.9	2.1	0.3	1.3	0.0	1.3	1.1	43	2.8	16.5
Kansas	86.1	5.7	0.9	1.7	0.0	3.4	2.1	20	7.0	35.2
Kentucky	90.1	7.3	0.2	0.7	0.0	0.6	1.1	46	1.5	20.7
Louisiana	63.9	32.5	0.6	1.2	0.0	0.7	1.1	44	2.4	51.0
Maine	96.9	0.5	0.6	0.7	0.0	0.2	1.0	49	0.7	7.4
Maryland	64.0	27.9	0.3	4.0	0.0	1.8	2.0	23	4.3	55.1
Massachusetts	84.5	5.4	0.2	3.8	0.0	3.7	2.3	17	6.8	37.2
Michigan	80.2	14.2	0.6	1.8	0.0	1.3	1.9	24	3.3	37.9
Minnesota	89.4	3.5	1.1	2.9	0.0	1.3	1.7	28	2.9	24.3
Mississippi	61.4	36.3	0.4	0.7	0.0	0.5	0.7	51	1.4	50.5
Missouri	84.9	11.2	0.4	1.1	0.1	0.8	1.5	30	2.1	29.7
Montana	90.6	0.3	6.2	0.5	0.1	0.6	1.7	27	2.0	20.8
Nebraska	89.6	4.0	0.9	1.3	0.0	2.8	1.4	31	5.5	27.9
Nevada	75.2	6.8	1.3	4.5	0.4	8.0	3.8	5	19.7	60.9
New Hampshire	96.0	0.7	0.2	1.3	0.0	0.6	1.1	45	1.7	10.7
New Jersey	72.6	13.6	0.2	5.7	0.0	5.4	2.5	13	13.3	57.8
New Mexico	66.8	1.9	9.5	1.1	0.1	17.0	3.6	6	42.1	76.7
New York	67.9	15.9	0.4	5.5	0.0	7.1	3.1	8	15.1	63.6
North Carolina	72.1	21.6	1.2	1.4	0.0	2.3	1.3	36	4.7	48.4
North Dakota	92.4	0.6	4.9	0.6	0.0	0.4	1.2	41	1.2	16.5
Ohio	85.0	11.5	0.2	1.2	0.0	0.8	1.4	33	1.9	29.3
Oklahoma	76.2	7.6	7.9	1.4	0.1	2.4	4.5	4	5.2	46.6
Oregon	86.6	1.6	1.3	3.0	0.2	4.2	3.1	9	8.0	36.0
Pennsylvania	85.4	10.0	0.1	1.8	0.0	1.5	1.2	40	3.2	30.7
Rhode Island	85.0	4.5	0.5	2.3	0.1	5.0	2.7	12	8.7	39.0
South Carolina	67.2	29.5	0.3	0.9	0.0	1.0	1.0	47	2.4	48.6
South Dakota	88.7	0.6	8.3	0.6	0.0	0.5	1.3	34	1.4	22.9
Tennessee	80.2	16.4	0.3	1.0	0.0	1.0	1.1	42	2.2	35.8
Texas	71.0	11.5	0.6	2.7	0.1	11.7	2.5	14	32.0	70.7
Utah	89.2	0.8	1.3	1.7	0.7	4.2	2.1	19	9.0	33.4
Vermont	96.8	0.5	0.4	0.9	0.0	0.2	1.2	39	0.9	8.0
Virginia	72.3	19.6	0.3	3.7	0.1	2.0	2.0	21	4.7	48.7
Washington	81.8	3.2	1.6	5.5	0.4	3.9	3.6	7	7.5	42.0
West Virginia	95.0	3.2	0.2	0.5	0.0	0.2	0.9	50	0.7	10.8
Wisconsin	88.9	5.7	0.9	1.7	0.0	1.6	1.2	37	3.6	26.1
Wyoming	92.1	0.8	2.3	0.6	0.1	2.5	1.8	26	6.4	25.3

Appendix D: Census 1990 Multiple Race Hispanic Profiles by State

State	White Single	Black Single	American Indian Single	Asian/Pacific Islander Single	Other Race Single	Multiple Race	Rank Multiple Race
Alabama	62.4	12.0	1.2	2.4	20.8	1.3	25.0
Alaska	48.1	3.6	6.2	5.6	34.6	1.9	7.0
Arizona	48.5	0.8	1.9	0.5	47.4	0.9	49.0
Arkansas	58.0	5.7	1.9	1.9	31.5	1.0	47.0
California	45.0	1.5	0.8	1.8	49.9	1.1	38.0
Colorado	57.3	1.2	1.3	0.7	38.3	1.1	37.0
Connecticut	48.6	6.3	0.3	0.7	42.7	1.3	31.0
Delaware	43.5	9.1	0.5	1.3	44.2	1.4	24.0
District of Columbia	40.4	13.3	0.7	1.5	42.2	2.0	4.0
Florida	78.5	3.7	0.2	0.5	14.4	2.7	2.0
Georgia	51.4	8.6	0.7	1.9	36.5	1.1	41.0
Hawaii	25.1	1.6	1.3	42.7	20.9	8.3	1.0
Idaho	40.7	0.3	2.6	0.6	54.4	1.5	19.0
Illinois	44.1	2.3	0.4	1.1	51.3	0.9	48.0
Indiana	55.4	3.5	0.7	1.0	38.3	1.0	46.0
Iowa	58.0	1.8	1.8	1.7	35.5	1.2	32.0
Kansas	43.8	2.5	1.7	1.0	50.0	1.0	44.0
Kentucky	61.7	7.0	1.1	2.8	25.8	1.6	13.0
Louisiana	66.0	8.3	1.1	1.9	20.5	2.2	3.0
Maine	71.4	2.9	1.5	2.6	19.6	1.9	6.0
Maryland	53.1	9.5	0.7	2.5	32.6	1.7	8.0
Massachusetts	42.8	8.9	0.6	1.1	45.1	1.6	14.0
Michigan	51.6	4.4	1.5	1.2	39.7	1.6	12.0
Minnesota	53.4	3.5	3.1	3.1	35.9	1.1	42.0
Mississippi	57.2	19.6	1.3	3.0	17.6	1.3	26.0
Missouri	60.1	4.3	1.6	1.9	30.7	1.4	22.0
Montana	58.2	1.1	9.8	1.1	28.2	1.5	17.0
Nebraska	54.9	1.9	1.9	1.1	39.5	0.8	51.0
Nevada	52.5	1.8	1.7	1.8	41.0	1.1	36.0
New Hampshire	68.6	4.0	0.8	1.3	23.7	1.6	10.0
New Jersey	54.5	7.0	0.3	1.1	35.5	1.5	16.0
New Mexico	65.0	0.4	1.1	0.3	32.0	1.1	35.0
New York	41.1	13.0	0.5	1.2	42.7	1.4	21.0
North Carolina	48.3	9.3	1.6	2.0	37.9	0.8	50.0
North Dakota	53.8	1.6	6.9	2.5	33.8	1.5	20.0
Ohio	54.1	5.2	0.9	1.4	36.7	1.6	11.0
Oklahoma	41.2	2.7	6.7	1.4	46.8	1.3	30.0
Oregon	49.9	1.1	2.4	1.6	43.6	1.4	23.0
Pennsylvania	41.6	7.4	0.5	1.4	47.7	1.3	27.0
Rhode Island	45.9	10.0	1.0	1.6	40.3	1.3	28.0
South Carolina	54.7	12.8	0.8	3.5	27.2	1.1	40.0
South Dakota	51.1	1.6	17.5	2.1	26.6	1.2	33.0
Tennessee	61.6	9.4	1.1	2.7	24.0	1.2	34.0
Texas	56.5	1.0	0.3	0.4	40.8	1.0	43.0
Utah	52.2	0.8	1.8	1.0	43.2	1.0	45.0
Vermont	77.4	2.3	1.2	1.5	15.6	2.0	5.0
Virginia	55.0	6.1	0.6	3.0	33.6	1.6	9.0
Washington	39.9	1.8	2.4	3.4	51.0	1.5	18.0
West Virginia	76.6	3.6	1.1	2.4	14.7	1.6	15.0
Wisconsin	50.7	3.0	1.7	1.4	42.0	1.1	39.0
Wyoming	54.9	0.7	2.4	0.7	40.0	1.3	29.0

Appendix E: Census 2000 Multiple Race Hispanic Profiles by State

State	White Single	Black Single	American Indian Single	Asian Single	Pacific Islander Single	Other Single	Multiple	Rank Multiple Race
Alabama	48.8	7.7	1.1	0.5	0.5	34.8	6.7	39
Alaska	41.6	2.8	5.9	1.5	0.5	33.5	14.3	2
Arizona	46.3	0.7	1.7	0.2	0.1	45.6	5.4	47
Arkansas	44.3	2.7	1.3	0.4	0.2	45.0	6.2	44
California	39.7	0.7	1.4	0.4	0.1	51.2	6.4	43
Colorado	48.5	0.9	2.1	0.3	0.1	41.4	6.7	38
Connecticut	44.2	4.5	0.7	0.2	0.1	43.4	6.9	36
Delaware	45.1	6.0	1.1	0.4	0.1	39.8	7.5	28
District of Columbia	37.6	7.2	1.0	0.3	0.2	45.1	8.6	14
Florida	74.8	2.7	0.4	0.2	0.1	16.7	5.2	50
Georgia	45.6	4.2	0.9	0.4	0.2	42.5	6.2	45
Hawaii	19.4	1.3	1.1	11.1	5.8	14.9	46.3	1
Idaho	37.4	0.6	1.8	0.2	0.1	52.7	7.2	31
Illinois	45.8	1.4	0.8	0.2	0.1	46.3	5.3	49
Indiana	46.9	2.1	1.0	0.3	0.2	42.6	6.8	37
Iowa	46.4	1.3	1.3	0.4	0.1	42.8	7.6	27
Kansas	42.5	1.5	1.4	0.3	0.1	46.9	7.4	29
Kentucky	54.8	3.9	1.1	0.6	0.3	31.3	7.8	24
Louisiana	57.3	7.9	1.3	0.5	0.2	24.5	8.4	18
Maine	61.1	3.4	2.0	1.0	0.5	22.2	9.8	5
Maryland	46.0	5.6	0.9	0.5	0.2	37.8	9.1	9
Massachusetts	39.4	5.9	0.9	0.3	0.2	45.0	8.3	19
Michigan	49.2	3.3	1.6	0.4	0.2	36.5	8.9	10
Minnesota	44.0	2.0	2.1	0.6	0.2	42.4	8.7	13
Mississippi	46.0	13.5	1.1	0.7	0.2	31.6	6.9	34
Missouri	52.0	3.1	1.5	0.5	0.2	34.2	8.6	16
Montana	52.0	0.9	9.1	0.7	0.2	26.2	10.9	4
Nebraska	41.1	1.1	1.5	0.3	0.2	49.3	6.6	41
Nevada	50.5	1.0	1.3	0.4	0.2	39.7	6.9	35
New Hampshire	56.6	3.3	1.3	0.6	0.2	30.1	7.8	23
New Jersey	49.0	4.1	0.7	0.3	0.1	38.6	7.2	32
New Mexico	52.4	0.5	1.6	0.1	0.1	40.1	5.3	48
New York	39.5	7.0	1.0	0.3	0.1	44.2	7.8	25
North Carolina	41.6	3.8	1.1	0.3	0.2	46.9	6.1	46
North Dakota	51.8	2.0	7.2	0.5	0.2	29.0	9.4	7
Ohio	49.4	4.9	1.2	0.4	0.2	34.6	9.3	8
Oklahoma	40.2	1.7	3.9	0.3	0.2	44.9	8.8	12
Oregon	37.8	0.8	1.8	0.4	0.2	51.0	8.0	21
Pennsylvania	41.0	5.6	0.9	0.4	0.2	44.5	7.4	30
Rhode Island	36.1	5.5	1.0	0.3	0.3	48.7	8.2	20
South Carolina	45.5	7.1	1.0	0.5	0.4	38.6	7.0	33
South Dakota	44.2	1.1	11.9	0.6	0.4	30.9	11.0	3
Tennessee	46.3	3.7	1.1	0.5	0.3	41.4	6.7	40
Texas	58.0	0.6	0.7	0.1	0.1	36.3	4.3	51
Utah	44.0	0.8	1.5	0.3	0.2	45.4	7.9	22
Vermont	68.6	2.6	1.7	1.0	0.4	16.1	9.6	6
Virginia	46.9	4.2	0.8	0.5	0.2	38.6	8.8	11
Washington	38.4	1.3	1.8	0.7	0.3	49.1	8.5	17
West Virginia	71.8	3.3	1.2	0.6	0.5	16.0	6.6	42
Wisconsin	45.7	2.2	1.7	0.4	0.1	42.1	7.8	26
Wyoming	50.1	0.7	2.8	0.3	0.1	37.3	8.6	15

Appendix F: A Comparison of Diversity 1990–2000

State	Diversity: Original 1990 Data	Diversity 1990	Diversity 2000
Alabama	40.1	41.0	44.6
Alaska	44.0	47.9	53.2
Arizona	54.3	56.1	64.3
Arkansas	30.2	31.7	37.7
California	69.8	71.2	79.1
Colorado	39.5	42.1	50.8
Connecticut	32.9	34.8	44.0
Delaware	35.7	37.3	46.0
District of Columbia	53.2	54.8	61.0
Florida	44.3	46.2	54.6
Georgia	44.2	45.2	54.5
Hawaii	69.2	74.4	79.1
Idaho	19.7	22.6	29.2
Illinois	45.7	46.9	55.8
Indiana	20.3	21.9	28.0
Iowa	8.8	10.5	16.5
Kansas	24.4	26.9	35.2
Kentucky	15.8	17.2	20.7
Louisiana	47.6	48.4	51.0
Maine	4.2	6.2	7.4
Maryland	46.2	47.5	55.1
Massachusetts	26.4	28.8	37.2
Michigan	31.5	33.5	37.9
Minnesota	13.0	15.3	24.3
Mississippi	47.7	48.2	50.5
Missouri	23.8	25.7	29.7
Montana	16.2	18.8	20.8
Nebraska	15.9	17.8	27.9
Nevada	41.7	44.7	60.9
New Hampshire	5.8	7.8	10.7
New Jersey	46.4	47.9	57.8
New Mexico	69.4	70.7	76.7
New York	54.5	55.9	63.6
North Carolina	39.5	40.5	48.4
North Dakota	11.7	13.6	16.5
Ohio	23.8	25.5	29.3
Oklahoma	35.0	38.8	46.6
Oregon	20.4	24.5	36.0
Pennsylvania	23.8	25.1	30.7
Rhode Island	23.5	26.5	39.0
South Carolina	44.4	45.2	48.6
South Dakota	16.8	18.7	22.9
Tennessee	29.5	30.7	35.8
Texas	64.1	65.1	70.7
Utah	20.2	23.1	33.4
Vermont	4.0	6.3	8.0
Virginia	39.6	41.1	48.7
Washington	28.0	32.0	42.0
West Virginia	8.2	9.7	10.8
Wisconsin	17.8	19.5	26.1
Wyoming	20.8	23.4	25.3

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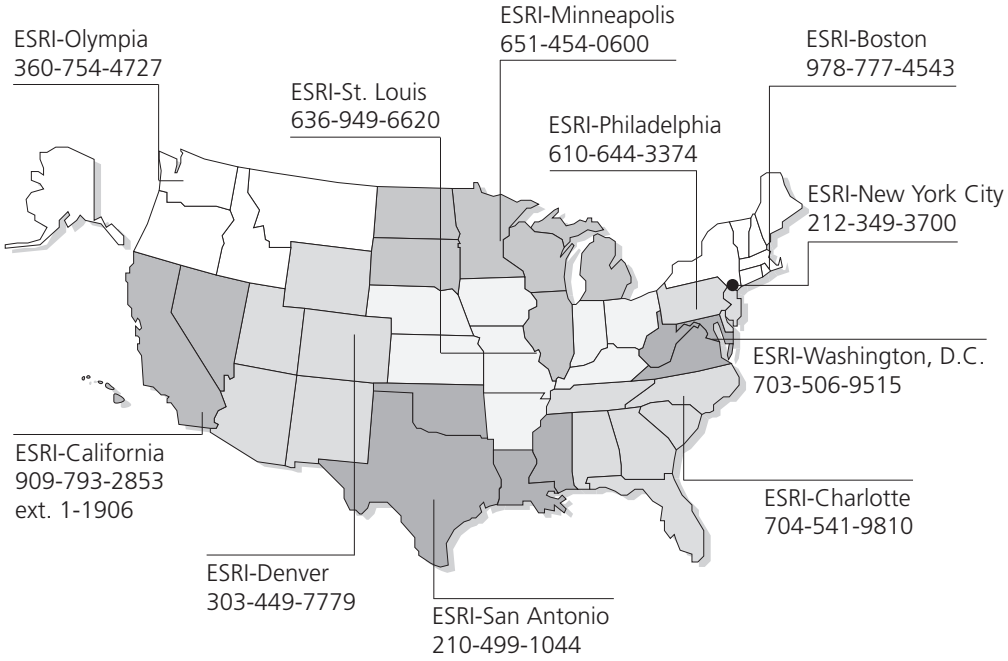

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