CHAPTER ELEVEN

Issues in the Quality of Data on Minority Groups

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The quality of the data we collect in research is only as good as the degree of our inviolation of the assumptions associated with each step of the data gathering process. As with any scientific endeavor, there is a constant need for reevaluation of the tools we use for generating scientific knowledge. A reassessment of any aspect of the process of research, therefore, is within the purview of adding to the scientific integrity of the technique employed.

In this chapter, we examine a range of data quality issues related to the usage of the concept of race in research. In particular, we assess potential problems and pitfalls that are linked to the meaning and the application of the concept. Our ultimate aim is to critically evaluate the quality of race-based data with an eye to outlining areas for improvement. Much of the discussion and examples we present are taken from our research on race and health, but most of the issues we raise are generalizable to other outcomes. In this chapter we proceed by first examining some general measurement issues in research and race as an analytic category. We then advance several concerns about the quality of existing data on race through examples from census analyses and the general research literature. We intersperse some recommendations for improving race-related data.

MEASURES IN RESEARCH

Measures in survey research are constructed from words that are essentially thought to elicit uniform interpretations from survey participants. This assumption is premised on the belief that words have shared meanings, at least
in the research contexts in which such words are used to construct measures to be administered as surveys or other data-gathering methodology. Semantic differential scales, for instance, are based not only on the notion that words evince qualitatively and quantitatively different responses, but also that such differences are not a function of conceptual nonequivalence among the different groups of a target research population. This is held to be true because the meaning dimensions of such scales are assumed to be constant, a concept sometimes referred to as conceptual equivalence (Takeuchi & Young, 1994).

Researchers, although often aware of the possible effects of the meanings of words and constructs, are sometimes not as vigilant in their assessment of the problems associated with some frequently used words, such as race, when doing actual research. Because of the unique history of race relations in this country, the word race is often laden with impressions, opinions, and perceptions, some of which are often distorted. This is a reason for extreme caution whenever the word race is invoked in surveys or any research process. But, as we demonstrate later, this care has not been consistently exercised. The result is that despite its fairly routine use in research, the quality of racial data remains questionable.

RACE AS AN ANALYTIC VARIABLE

Race as an analytic category has been an issue of serious debate in recent years (Hahn, 1992; LaVeist, 1994; Williams, Lavizzo-Mourey, & Warren, 1994). Out of these discussions, a number of critical conclusions about the use of race as an analytic category have emerged. First, the implicit notion that racial differences in outcomes represent inherent differences between racial groups has been shown to lack scientific merit. In particular, discussions of the origins and meaning of the concept of race reveal that the biological basis for the classification of population groups into races is fast losing its historical popularity and is presently regarded as scientifically tenuous (King & Williams, 1995; Krieger, Rowley, Herman, Avery, & Phillips, 1993; Williams et al., 1994).

Second, it is argued that the usual and still used categorization of race for data analysis provides little information on the heterogeneity that is present in racial groups. Such analytic voids, in turn, lead to imprecise and sometimes misleading inferences and conclusions. Third, analyses of race that rely on broad-based population data have the potential for inaccuracies inherent not only in undercount problems in the census, but also in the classifications and misclassifications of race currently used for the collection of such data. Finally, researchers often ignore the confounding effects of race/ethnicity and socioeconomic status that often lead to a misattribution of the causes of social outcomes. We suggest, therefore, that the utility of race as an analytic category is proportional to the recognition of problems related to the quality of such
data and the analytic difficulties that develop as a result. We now examine some of the problems inherent in census data and other social science data and the particular analytic problems they present.

The Quality of Racial Data

Statistical Directive No. 15 of the Federal government's Office of Management and Budget (OMB) requires Federal statistical agencies in the United States to report race and ethnic group information for four racial groups (American Indian and Alaskan Native, Asian or Pacific Islander, Black, and White) and one ethnic category (Hispanic origin; Office of Management and Budget, 1978). These categories form the basis for most analytic studies involving the use of race or racial/ethnic groupings. However, race is routinely used in an uncritical manner with little or no consideration given to the underlying problems of measurement and interpretation—problems that can importantly affect the quality of racial data (Hahn, 1992; Jones, LaVeist, & Lillie-Blanton, 1991; Krieger et al., 1993; LaVeist, 1994; Williams, 1994).

PROBLEMS IN THE DEFINITION OF RACE

First, the very definition of race and the classification of the population into racial groups is problematic. The United States Census Bureau, for example, has routinely changed its racial categories, such that no racial classification scheme has been used in more than two Censuses (Martin, Demaio, & Campanelli, 1990). The solutions to these definitional complications are not simple. Native American tribes, for example, do not use uniform criteria to determine who is a Native American. Some tribes use a strict definition based on blood quantum level whereas others rely on identification with Indian culture or participation in tribal affairs as decisive evidence for classification as a Native American (Scott & Suagee, 1992).

Importantly, the size of a racial population is dependent on how the questions that ascertain race are worded. In the 1980 Census, for example, there were 1.5 million Native Americans based on answers to the race question (What race does this person consider himself/herself to be), but 6.8 million based on responses to the ethnic ancestry question (What is this person's ancestry or ethnic origin; Scott & Suagee, 1992). Similarly, the 1980 Census found that 26.5 million Americans indicated that they were Black but only 21 million reported that they were of African American ancestry (Hahn, 1992). A study of 7,300 middle-school students in the Miami area found that 67% of the sample were Latino based on a Latino ancestry definition whereas only 56% were Latino based on parental report (Zimmerman et al., 1994).

Also, researchers typically pay little attention to measurement issues and
combine racial ethnic data that were assessed in different ways. For example, the wording of the Latino identification question on the standard birth and death certificates varies from state to state, and these data are combined to produce national estimates of vital events for Latinos (U.S. Public Health Task Force on Minority Health Data, 1992). Different patterns of response to racial/ethnic questions may also predict variations in the outcomes of interest. For example, the Miami study just referred to found that students who were categorized discrepantly (that is, identified as Latino by the ancestry definition but not by parental report) had higher levels of acculturation and depressive symptoms (Zimmerman et al., 1994).

The lack of consistency in the measurement of Latino ethnicity by various federal agencies and researchers creates another problem. Many surveys use one question to assess race and a separate one to assess Latino origin, and then create for analysis the five OMB racial/ethnic categories that are not mutually exclusive. A requirement of valid statistical tests, that the various categories in a classification system are independent samples, is not met when the data are presented for African Americans, Whites, and Latinos. There are Black Latinos, Asian Latinos, Native American Latinos, and White Latinos. Del Pinal (1992) showed that the overlap of race with the Latino category affects the patterns of racial/ethnic differences not only for Latinos but for the other racial categories as well. For example, Black Latinos are more similar in labor force participation to African Americans than to White Latinos. Thus, comparing non-Latino Whites to African Americans and Latinos (instead of comparing differences among Whites, African Americans, and Latinos, as is more typically done), would increase the Latino-White difference but reduce the African American-White difference.

All of the foregoing examples highlight the need to measure racial and ethnic status in a consistent manner to ensure comparability over time and across research studies. Researchers must pay more attention to evaluating how racial and ethnic status is measured and consider its implications for their conclusions.

**Issues Related to Self-Identification**

An additional problem is that several alternative racial or ethnic labels exist and respondents vary in their preferred term for self-identification (Rumbaut, 1994). For example, national data reveal that while 18% of African Americans prefer to be called African American, 17% favor the term Black and 60% said it made no difference (McAneny, 1994). Younger adults and persons residing in the Northeast were much more likely to prefer the term African American compared to older adults and persons in other regions of the country. Balancing the need for uniform assessment of race and ethnicity with a commitment to the principle of individual dignity (which would call for allowing individu-
als to identify as they choose) suggests that researchers should routinely use alternative labels that have received acceptance in racial/ethnic minority populations. Examples include African American or Black, Hispanic or Latino, American Indian or Native American. A lack of sensitivity to this issue can lead to unwittingly offending participants in research studies.

Second, changes in racial identity over time at the societal and individual level create serious reliability problems in the assessment of race and ethnicity. A national study found that one third of the U.S. population reported a different racial or ethnic status 1 year after their initial interview (Johnson, 1974). For example, 6% of Negroes, 12% of Mexicans, 20% of Polish, 34% of Germans, and 45% of the English, Scottish, or Welsh reported a different racial or ethnic category in 1972 compared to 1971.

The most dramatic evidence of change in self-identification comes from analyses of trends in the Native American population over time. Between 1960 and 1990, there was a sixfold increase in the Native American population (Eschbach, 1995). This substantial increase in the size of the population cannot be explained by biological growth or international migration, but reflects a change in self-definition, with more adults of mixed ancestry identifying themselves as Native American. This shift in self-identification into the Native American population is more common at younger ages, does not vary by gender, and is twice as common in states with a very small Native American population, compared to states with large Native American populations (Harris, 1994; Passel & Berman, 1986).

The degree of identification as Native American is not very strong for many of these new Natives, with most persons reporting Native American ancestry not reporting Native American race (Eschbach, 1995; Harris, 1994; Passel & Berman, 1986). Passel and Berman suggested that self-identification as Native American may capture some distinctiveness in areas with a large Native American population but may not be an indicator of anything distinctively Native American in other areas. They also indicate that a respondent’s ability to identify a specific tribal designation may distinguish persons who have a weak versus a strong Native American identification. Future research must give more systematic attention to measuring the degree to which respondents of all racial and ethnic backgrounds identify with and feel close to their self-identified racial and ethnic categories. The importance of this issue is highlighted by recent research that indicates that the selection of particular racial/ethnic labels predicts a broad range of outcomes among children of immigrants (Rumbaut, 1994).

The discrepancy between interviewer-observed race and respondent self-report is another important source of measurement error. In one national study, 6% of self-identified African Americans, 29% of self-identified Asian Pacific Islanders, 62% of self-identified Native Americans, and 80% of persons who self-identified with an other category (70% of whom were Latino) were
classified by the interviewer as White (Massey, 1980). This source of error has important implications for rates of mortality in minority populations in the United States. The classification of the race of the deceased on death certificates is typically made by funeral directors using their own judgment rather than obtaining the race of the deceased from the next of kin. The misclassification of Asian Pacific Islanders and Native Americans as White suppresses the death rates for these groups. For example, a study in Oklahoma found that 28% of Native American infants were misclassified as another race on the death certificate. After adjusting for this misclassification, the infant mortality rate doubled from the officially reported 5.8 per 1,000 to 10.4 per 1,000.

Studies of the ways in which the race variable is used in health research indicate that researchers do not indicate whether race was assessed by respondent self-identification, proxy report, extraction from records, or direct observation (Jones et al., 1991; Williams, 1994). Williams called on editors to require researchers to routinely specify how race was measured.

Inattention to the heterogeneity of racial/ethnic populations can also obscure rather than illuminate racial differences in the distribution of social phenomena. The Native American population consists of more than 500 federally recognized tribes and entities and is characterized by considerable diversity. The Asian and Pacific Islander American (APIA) category lumps together persons coming from 28 Asian countries and 25 Pacific Island cultures (Lin-Fu, 1993). Latinos are a similarly diverse group. Subgroups in the categories of Latino and APIA differ in terms of migration history, culture, language, English language proficiency, phenotype, demographic characteristics (age and sex distribution), and class origin. Not surprisingly, an overall value on a social or health status indicator for any of these populations hides the considerable variation that exists across subgroups. For example, the APIA population in California has death rates of homicide and legal intervention for 15- to 24-year-olds that is 17 per 100,000, but the rates range from 6 for Chinese Americans and 13 for Japanese Americans to 54 for Samoans and 73 for the other Pacific Islander category (Suh, 1993). There is thus a critical need for the inclusion of identifiers for subgroups of the APIA, Native American, and Latino populations on all surveys and forms.

Researchers have also given inadequate attention to the variations within both the African American and White population. The African American population is characterized by cultural and ethnic heterogeneity that is predictive of variations in health status (Williams et al., 1994). One study, for example, found that U.S.-born Black women and Haitian immigrants had higher rates of cervical cancer than immigrants from the English-speaking Caribbean, but both groups of immigrant women had lower rates of breast cancer than their U.S.-born peers (Fruchter et al., 1990). Inadequate attention has also been given to examining regional variations in the African American population.
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The Multiracial Debate

The discussion of establishing the racial status of Native Americans highlights the more general problem of establishing the race of an individual whose parents are of different races. Birth certificates in the United States have never listed the race of the child, but they include the race of both parents. Prior to 1989, the National Center for Health Statistics used a complicated algorithm to determine the race of children whose parents belonged to different races. According to this scheme, if the father was White, the child would be given the race of the mother; but if the father was non-White, the child would be assigned the race of the father, except in the case of Native Hawaiians. If either parent was Hawaiian, the child was Hawaiian. Thus, unlike the assignment of race for all other racial groups, a child would be White only if both parents were White. Since 1989, the National Center for Health Statistics no longer reports vital statistics by the race of the child, but reports all birth data by the race of the mother. However, the Indian Health Service continues to consider a child as Native American if either the mother or father is Native American. The infant mortality rate for Native Americans by race of child is different from the rate by race of mother (Scott & Suagee, 1992).

The question of how to classify persons whose parents are of different races continues to be a hotly debated policy issue in the United States, with some groups pushing for changes in the OMB's racial standards that would include a new category of multiracial status for all persons whose parents come from more than one of the four official racial groups. Although the debate on this issue continues at the Federal level, there has been much activity at the state level. Georgia, Michigan, and Indiana have passed legislation requiring that a new category, multiracial status, be added to the standard Federal racial categories on all state forms whereas Illinois and Ohio require this new category on school forms. Multiracial legislation is also pending in several other states such as California, Texas, New York, Wisconsin, New Jersey, and Oklahoma. Researchers have not given systematic attention to the extent to which outcomes for persons of mixed racial parentage differs from that of the standard racial categories. One recent study suggests that this association may be complex and that any attempt to assess multiracial status should include assessment of the race of both parents. Collins and David (1993) found that infants born to African American mothers and White fathers had a higher rate of low birthweight than those born to White mothers and African American fathers. The extent to which socioeconomic status or other factors related to the psychosocial context accounts for this pattern was not examined.

Census Undercount

Census undercount is another problem affecting the quality of data. Census data are used to calculate the denominators for mortality rates and a broad
range of other types of statistical information. They are also used to construct sampling frames and to adjust for nonresponse in population-based survey research studies. The use of a denominator that is undercounted inflates the obtained rate in exact proportion to the undercount in the denominator. Thus, all rates (such as pediatric AIDS deaths and teen homicides for African Americans) that use census data as denominators are overestimated by the same percentage as the population undercount in the denominator.

Analyses by the United States Census Bureau reveal that, although the overall undercount for the U.S. population is small, it is larger for African Americans than for Whites, and despite a steady decline in the undercount rate for African Americans between 1940 and 1980, there was an upward trend between 1980 and 1990 (Robinson, Bashir, Prithwis, & Woodrow, 1993). In 1990, the overall undercount was 1.8% for the U.S. population and 5.7% for the African American population, but it varied considerably for some demographic subgroups. It was dramatically higher for African American males (8.5%) than for African American females (3%), and varied by age such that there was a net census undercount rate of 11% to 13% for all of the 10-year age categories for African American males between the ages of 25 and 64 years. For the Native American population, the undercount rate in 1990 was 9% for the under-5 age group (Harris, 1994).

These estimates come from demographic analysis that makes projections of the population based on administrative data and demographic trends. However, estimates of census undercount are provided only at the national level. It is likely, for example, that the omission of African American males from households (the major cause of the undercount of African Americans) varies by geographic area. Further, estimates of undercount based on demographic analyses are only as good as the underlying assumptions, and concerns have been raised about the extent to which such demographic analysis methods are becoming less reliable over time (Notes and Comments, 1994).

For the 1990 Census, in addition to demographic analysis, the Census conducted a Post Census Enumeration Survey (PES) in which undercount was estimated on a case-by-case matching of Census records with those obtained in the survey of 165,000 households. According to the PES, the undercount rates for Latinos (5%) and reservation Native Americans (12.2%) were even higher than the rate for African Americans (4.6%, Hogan, 1993), but the extent to which the undercount for these groups is concentrated in particular age and/or gender groups is not known. The PES undercount was 0.7% for non-Latino Whites and 2.4% for Asian and Pacific Islanders.

The availability of sufficiently large databases on Native Americans, Latinos, and APLAs is also a major problem. Because of the relatively small sizes of some of these population groups and their geographic distribution, standard sampling strategies for national populations will not yield adequate sample size to provide reliable estimates on any social phenomenon in these groups or
to explore heterogeneity in a given racial group. Surveys focused on a particular geographic area with a high concentration of a racial subgroup as opposed to national ones would be necessary to provide data for these groups. Combining multiple years of data in ongoing surveys is another useful strategy for obtaining information for small population groups.

As discussed in detail in the chapter by Knight and Hill in this volume, researchers must also give greater attention to translating study instruments and ensuring the equivalence of measures for persons who have limited proficiency in the English language (Takeuchi & Young, 1994). These persons are more likely to be members of racial minority populations. For example, in 1990, although only 8% of the total U.S. population was foreign born, 74% of APIAs were foreign born (Lin-Fu, 1993).

Race/Ethnicity and SES

Race/ethnicity is strongly related to SES, and SES differences between racial/ethnic groups play a major role in accounting for racial variations in a broad range of societal outcomes. Understanding issues related to race requires careful attention to the association between race and SES. For example, nearly one half of all African American children live below the poverty line (Schulman, 1990). National data reveal that there are large disparities in poverty rates between the White population and other racial/ethnic groups. Compared to 12% of Whites, 33% of African Americans, and 29% of Latinos are poor (National Center for Health Statistics, 1994).

The role of SES in accounting for initially observed racial disparities is well-documented in the health area. Researchers have found that SES differences in health in the United States are larger than racial ones (Navarro, 1990), and Black–White differences in health status are sometimes eliminated and always substantially reduced when adjusted for SES (Cooper, 1993; Krieger et al., 1993; Krieger & Fee, 1994; Williams & Collins, 1995). However, the association between race and SES is complex. Researchers frequently find that in each level of SES, African Americans have worse health status than Whites. For example, one recent study found higher infant mortality rates among college-educated African American women than among their similarly situated White peers (Schoendorf, Hogue, Kleinman, & Rowley, 1992).

Several researchers have recently emphasized that the failure of the traditionally utilized SES indicators to completely explain racial differences in health reflects the interactive and incremental role of racism as a determinant of health (Cooper, 1993; Krieger et al., 1993; Williams, 1996; Williams et al., 1994). Race is more than SES, and the commonly used SES indicators do not fully capture the differences in social and economic circumstances between households of different races. The construct of racism incorporates ideologies of superiority, negative attitudes and beliefs toward racial and ethnic out-
groups, and differential treatment of members of these groups by both indi-
guals and societal institutions (Williams & Collins, 1995). The unequal dis-
tribution of income, education, and occupational status is itself a consequence
of racism. It reflects the implementation of racism through social institutions
and processes.
First, residential racial segregation ensures that African Americans are less
likely than Whites to attend high quality elementary and high schools and are
thus more likely to bring fewer skills to the labor market. Second, systematic
racial bias in hiring workers can lead minority populations to have high levels
of unemployment and underemployment and thus lower levels of economic
resources. Third, across all educational levels, employed African Americans
and Latinos earn lower levels of income than Whites (U.S. Bureau of the Cen-
sus, 1991). Fourth, a given level of income differs across race in its ability to
procure goods and services in society. African Americans have higher costs
than Whites for food, housing, automobiles, and even real estate taxes (Will-
iams & Rucker, 1996). Fifth, racial differences in wealth exist at all income lev-
els and these racial differences in the availability of financial reserves are
larger than those for income (Eller, 1994). For example, for the poorest 20% of
the U.S. population (where Africans and Latinos are overrepresented), White
households have a net worth of $10,000 compared to $1 for African Americans
and $575 for Latinos. Sixth, even after adjusting for education and job experi-
ence, African American workers are more likely than their White peers to hold
jobs where they are exposed to hazardous conditions (Robinson, 1984). Thus,
because of the pervasive influence of racism across racial lines, a given level of
SES reflects different risks of exposure to pathogenic influences.
The ways in which racism transforms SES suggest that researchers should
routine test for interactions between race and SES. Wilson (1987) showed,
for example, that the African American urban poor encounter adverse living
conditions more frequently than their White counterparts. They are concen-
trated in depressed central city neighborhoods with substandard living condi-
tions whereas the White urban poor are more evenly dispersed throughout the
city, with many residing in relatively safe and comfortable neighborhoods
away from the inner city. Some empirical analyses have provided impressive
evidence of interactions. A reanalysis of data from eight epidemiologic surveys
demonstrated that although controlling for SES reduced to nonsignificance
the association between race and psychological distress, low SES African
Americans had higher rates of distress than low SES Whites (Kessler & Neigh-
bors, 1986). However, the findings have not been uniform. Analyses of data
from a large study of mental illness found that low SES White males had
higher rates of psychiatric disorders than their African American peers (Will-
iams, Takeuchi, & Adair, 1992). Among women, low SES African American
females had higher levels of substance abuse disorders than their White peers.
These findings suggest that patterns of the social distribution of disease may
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differ by health outcome and emphasize the need to understand the interactions among race, gender, and social class.

In addition to racism, differences in early life SES and health conditions between the races can also contribute to the failure of controls for SES to completely account for racial/ethnic differences in disease patterns. The health or social status of an adolescent or adult is a function not only of current SES, but of the SES conditions experienced over the life course (Williams & Collins, 1995). The material conditions and life quality of a person or community in childhood may be crucial to determining health and social standing throughout the life span. Some evidence suggests that the quality of the early childhood environment has a profound and lasting effect on health, well-being, and competence (Hertzman, 1994). Poverty conditions or ill-health in infancy and childhood can set in motion processes that can lead to a higher risk of health problems and selective social mobility in adolescence and adulthood. Researchers must give more attention to conceptualizing and measuring early life influences and assessing their impact on later life functioning.

CONCLUSION

In this chapter, we have featured some of the measurement and analytic problems that affect the quality of existing data. These problems have direct bearing on evaluations of the quality of our current base of knowledge on racial differences and important implications for the conduct of future research. In this country where public policy is often affected by empirical data, the implications of these problems for research on adolescence cannot be ignored. The aftermath of the Moynihan (1965) report reminds us of the critical role that empirical data can play in the development of public opinion and public policy. Especially relevant is that prevention/intervention strategies among adolescents need to be buttressed by solid data if such initiatives are to be effective. To the extent that national and other empirical data sources are used as the basis for such initiatives, sensitivity to the inherent weakness of such data is imperative. Researchers and policy makers should approach the study of racial differences in adolescent outcomes with greater awareness of the potential problems highlighted in this chapter.

The prospects for remedial steps to improve the quality of race-based data are good and must begin at the measurement level. We need consistently defined, readily understood, reliable categories of racial status. The current attention to problems regarding the conceptualization and measurement of racial categories is positive and can lead researchers to pay greater attention to measuring the specific risk factors and resources that race may be a proxy for, rather than using race in a mechanical and atheoretical manner. We urgently need more concerted efforts to identify and understand the concrete
and pervasive ways in which race structures everyday life, experiences, and outcomes.

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