**How many African Americans are missing?**
**Differential racial mortality, excess African American deaths, and lost population growth in the United States, 1900-2000**

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## Research Questions

The gap in mortality between whites and African Americans in the United States throughout the 20th century stands as a grim testament to the widely divergent standards of living that race has delivered in American social life. Scholars estimate that in 1900 the expected life span of an African American was12-16 years shorter than that of a white. By the end of the century, that gulf had narrowed to approximately half the size – progress perhaps, but still a substantial gap (Centers for Disease Control and Prevention 1996; Farley & Allen 1987; Farley 1996: 222-228). Despite the sustained research focus on this topic (see, e.g., Coale & Rives 1973; Demeny & Gingrich 1967; Ewbank 1987; Farley 1996; Farley & Allen 1987; Preston & Haines 1984; Preston, et al. 1998), two key questions remain shrouded. First, what was the human toll caused by the excessively high rates of Black mortality? Specifically, how many extra African Americans died over the course of the 20th century because of the enduring racial mortality gap? Second, what was the impact of those excess deaths on subsequent Black population growth as the 20th century wore on? This question is consequential because the racial mortality gap has been especially pronounced among infants, children, and young adults throughout the 20th century, and among women of childbearing age during the early years of the century (Ewbank 1987; Farley and Allen 1987; Preston, et al. 1998) – all of which means that many African American females died before they could produce progeny and thereby contribute to the growth of the African American population. If African Americans had enjoyed the same mortality rates as those of contemporaneous whites throughout the 20th century, how many more African Americans would have populated the United States during the century? In this paper, we address these two questions. We estimate historical population projections that enumerate, first, the excess premature deaths of African Americans who lived during the 20th century, and, second, their missing, unborn progeny.

## Significance

These questions are intrinsic to the demographic impact of racial inequality over the course of the 20th century. Racial demographics are important not only in their own right as a signal indicator of a group's health and population presence, but also because they, in turn, create imperatives and constraints in the evolving social and political dynamics of intergroup relations.

Our first question – the number of extra African American deaths caused by the racial mortality gap in the 20th century – is critical to an assessment of the irrevocable price paid by African Americans for racial inequality. Over the century, how many African Americans paid with their lives for their disadvantaged access to public sanitation systems, housing, education, safer and more remunerative jobs, and health care? Our second question – the lost Black population

growth that resulted from the racial mortality gap – allows us to grasp the broader demographic ramifications of racial inequality during the twentieth century. This question is pertinent in its own right, in assessing the forces that shape the relative population share of unequal social groups. But it is also important because racial demographics impose vital social and political constraints as contending, unequal groups maneuver in their on-going relations. Racially dominant groups are especially sensitive to the relative size of their own and subordinated groups, and whites in the U.S. are no exception (Crosby 1986; Taylor 2001). For example, as whites in the North American colonies stepped up their importation of African slaves in the 1700's, they also actively recruited and subsidized white immigrants from Europe to ensure that Africans' population share did not increase (Taylor 2001: 303). As whites sought to establish a neo-European culture on the North American continent, they wanted a racial underclass to assist in the endeavor, but they were ever wary about maintaining their own numerical dominance as they did so.

During the 18th and 19th centuries, White Europeans indeed prevailed in outnumbering Africans substantially in North America, and this afforded them the opportunity to develop a more restrictive rule for racial group ascription than was politically feasible in other new world locations such as the Caribbean and South America, where whites constituted a numerical minority. By the early 20th century, a unique "one-drop" rule for racial ascription had become firmly established in the United States: this genetically untenable but socially rigid rule stipulated that any African ancestry, however minimal, made someone a full African American (Davis 1991; Jordan 1968; Jackman 1994; Myrdal 1944; Williamson 1980). All other things equal, the "one-drop" rule would have promoted Black population growth at the expense of whites because it made both exit from the Black group and entry to the white group near-impossible (with the rare exception of "passing'), no matter how small the African portion of someone's racial heritage. But all other things were not equal. In addition to immigration policies that promoted European population growth, racial inequalities in all things affecting the material quality of life caused an enduring racial mortality disparity that restricted Black population growth. As long as whites' population share was overwhelming, they could continue to employ a racial ascription rule that preserved white group membership as highly exclusive. In short, as long as the African American population share was safely in the minority, the "one-drop" rule posed no demographic – or political – threat.

**Data and methods**

We use the component method of population projection to estimate the hypothetical rate of growth and size of the African American population under various counterfactual mortality scenarios. This method is used to estimate the population size at a point in time, *t*, by adding or subtracting from the population at a prior baseline time, *t*-1, the individual components of population change – births, deaths, immigrants, and emigrants – that occurred between *t*-1 and *t* (Newell 1988; Pollard, Yusef, and Pollard 1974). We use multiple sources of race-, age- and sex-specific data for the various components of population change between 1900 and 2000.

Observed population figures for African Americans for 1900-1920 are calculated from the IPUMS General Samples of the U.S. Decennial Censes (these are 1% samples for 1900 and 1920 and a 1-in-250 sample for 1910); for the decades 1930-1990 we use the corrected population estimates from Preston, et al. (1998) which we supplement with estimates from the Censes for the 85 and older age group; and for 2000 we use the corrected estimates published in the U.S.

Census Bureau, Population Division, Racial Statistics Branch (2002). We estimate mid-decade population figures as the exponential mean of the two adjacent decennial population counts. Observed population figures for whites are obtained from Coale and Zelnick (1963) for the decades 1900-1950, the Census (calculated from the 1% IPUMS) for 1960-1990, and from the U.S. Census Bureau, Population division, Racial Statistics Branch (2002) for 2000 (using figures from the column labeled "White alone or in combination").

It is widely accepted that mortality data for African Americans for the first two to three decades of the 20th century are inaccurate because of underenumeration of the African American population, underreporting of African American births and deaths, and the non-representative coverage of the African American population in the Death Registration Area (Elo 2001; Ewbank 1987: 102). By estimating population projections under the assumption of no racial disparities in mortality, we avoid using African American mortality rates and instead rely primarily on mortality data for whites. Survival rates for whites are derived from published life tables for each decade between 1900 and 1950, and for each year between 1950 and 2000 (these are published by the Department of Commerce, Bureau of the Census for 1900, 1910, 1920 and 1930; the U.S. Public Health Service, National Office of Vital Statistics for 1940; the U.S. Department of Health, Education, and Welfare, National Office of Vital Statistics for 1950-1966; the U.S. Department of Health, Education, and Welfare, National Center for Health Statistics for 1966-1977; and the U.S. Department of Health and Human Services, National Center for Health Statistics from 1978 to 2000).

Age-specific birth rates for African Americans for 1900-1935 are taken from Coale and Rives (1973), from Preston (2003) for 1935 to 1990, and from NCES (2006) for the years 1990 to 2000.

Immigration information for African Americans is calculated from each decennial census 1900-2000 using the IPUMS general or 1% samples. Since emigration has been a rare event for African Americans, we do not account for it in our analysis.

To address our first research question, we estimate the simple difference at the end of each decade between the observed Black population and the population that is projected given the counterfactual assumption that those African Americans who were alive at the start of the decade experienced the age- and sex-specific survival rates of whites rather than those of Blacks, along with the observed number of African American births and observed Black immigration. For this part of the analysis we employ the component projection for 10-year intervals only and the observed population at the start of a decade is the basis for each projection. This provides an estimate of the excess number of African Americans who died during each 10-year time interval, that is, the number of African Americans who would not have died if their survival rates had been equal to those of whites of the same age and sex.

To address our second question, we start with the observed African American population in 1900 and repeat the component projection method continuously over the century imposing racial equality in mortality by using the survival rates of whites along with the observed fertility and immigration rates of Blacks. By applying Blacks' age-specific fertility rates to the hypothetically increased population, we estimate the extra progeny who would have been born across multiple generations from 1900 to 2000 if their would-be mothers, grandmothers, great-grandmothers, and great-great-grandmothers had lived at white survival rates and reproduced according to the observed fertility of African Americans.

We plan to extend our analysis by investigating the demographic consequences of other counterfactual mortality scenarios that might have been attainable through public policy initiatives, such as a more rapid reduction of the racial gap in infant and childhood mortality rates in the early part of the century.

**Preliminary results**

Note: All results reported here should be treated as tentative until we have refined our analyses.

To begin, how many extra African Americans died during the 20th century because of the racial mortality gap? Figure 1 presents the estimated number of excess African American deaths by decade from 1900 to 2000. The values for each decade are the difference between (1) the observed African American population at the end of each decade, and (2) the projected African American population at the end of each decade if the observed African American population from the previous census were subjected throughout the decade to the same survival rates as whites of the same age and sex and the observed Black fertility and immigration rates. Those estimates suggest that approximately 300,000 to 700,000 African Americans died in each decade of the 20th century who would otherwise have lived, had Blacks' mortality rates been equal to whites' of the same age and sex. To put those figures in perspective, they may be compared with the most recent estimates of the death toll from the genocide in Darfur: 170,000-255,000 over 31 months of conflict (Hagan and Palloni 2006). Over the course of the 20th century, a total of almost 5 million African Americans died prematurely who would otherwise have lived, had their survival rates equaled those of whites. As one might expect, the number of excess African American deaths was highest in the early decades of the century, and, with the exception of a spike in 1940, the number steadily declined until 1970, when the number accelerated again until the end of the century. As a proportion of the African American population, the losses were most severe in the early decades of the century, when Blacks' overall population size was smallest. In 1900, there were about 8.6 million African Americans living in the United States; by 1910, the Black population size was almost 10 million. Over the intervening decade, there were an estimated 628,000 excess deaths of African Americans over 7% of the Black population in 1900 and over 6% of the surviving Black population in 1910.

We turn now to the second research question: how those excess deaths affected Black population growth over the 20th century. We begin by enumerating, for each decade of the 20th century, estimates of the cumulative number of missing African Americans when one counts both the excess deaths due to the racial mortality gap and their subsequent unborn progeny. Figure 2 shows that what begins as a population deficit of about 1.3 million increases steadily to almost 13 million by the end of the century. That figure exceeds the size of the entire observed African American population in 1930. Of the total of 13 million missing African Americans, approximately 5 million can be attributed directly to excess Black deaths resulting from the racial mortality gap. The remaining 8 million missing African Americans result from the indirect effects of would-be progeny whose births were prevented by the premature deaths of their would-be progenitors.

Figure 3 shows how those losses affected Black population growth. The lower line plots the observed African American population growth from 1900-2000, while the upper line plots the projected African American population growth that would have occurred if Blacks' mortality rates had been equalized to those of whites. The two lines fall further apart as the missing African Americans accrue over the generations. By mid-century, there were approximately 16.2

million African Americans observed in the United States, whereas the projected African American population, assuming no racial mortality gap from 1900-1950, would have been about 22.6 million. By century's end, the observed African American population was 36.4 million, whereas the projected population, assuming no racial mortality gap throughout the century, would have been 49.2 million – 35% larger.

Finally, Figure 4 shows the impact of those projections on the politically sensitive Black-white population ratio. The lower line plots the observed Black-white population ratio by decade: it started at about 0.121 in 1900 and then dipped slightly in the subsequent decades until it bottomed out at 0.108 in 1930, after which it slowly increased throughout the remainder of the century. It was the 1950's before the ratio regained parity with the 1900 ratio, and the slow increase continued after that until it reached 0.168 by 2000. By contrast, the upper line plots the projected Black-white population ratio under the assumption that Blacks' mortality rates were equal to those of whites throughout the 20th century. Under that scenario, the Black-white population ratio would have grown without halt, almost doubling in size from 0.121 in 1900 to 0.227 in 2000. The projected ratio of 0.227 is about 35% higher than the observed ratio of 0.168 at the end of the century.

In a hypothetical world in which African Americans would have enjoyed the same standard of living and thus the same rates of survival as whites for the entire 20$^{th}$ century, whites would presumably have been untroubled by the resulting growth in the population share of their former slaves. But in the real world, in which dominance over social, political, and material resources remained a driving concern of whites throughout the 20$^{th}$ century, the resulting population growth of African Americans was in fact significantly stunted to levels at which whites remained comfortably dominant, numerically as well as socially. Under those conditions, the uniquely restrictive "one-drop" rule of racial group ascription was able to survive intact. Whites had no demographic cause to become uneasy about a system of racial ascription that hardened rather than diminished the African American ranks and made membership in the dominant, white group relentlessly exclusive.

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**Figure 1: Estimated number of excess African American deaths in each decade among the ever-born population, 1900-2000**

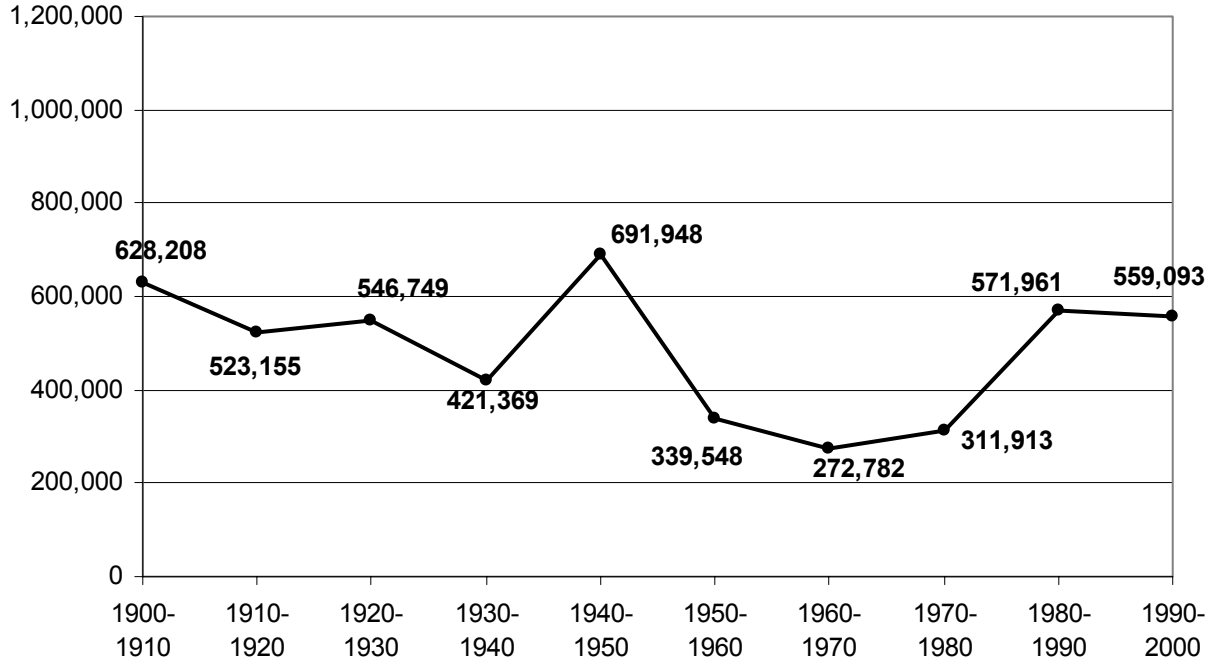


**Figure 2: Estimated number of missing African Americans due directly and indirectly to racial disparities in mortality**

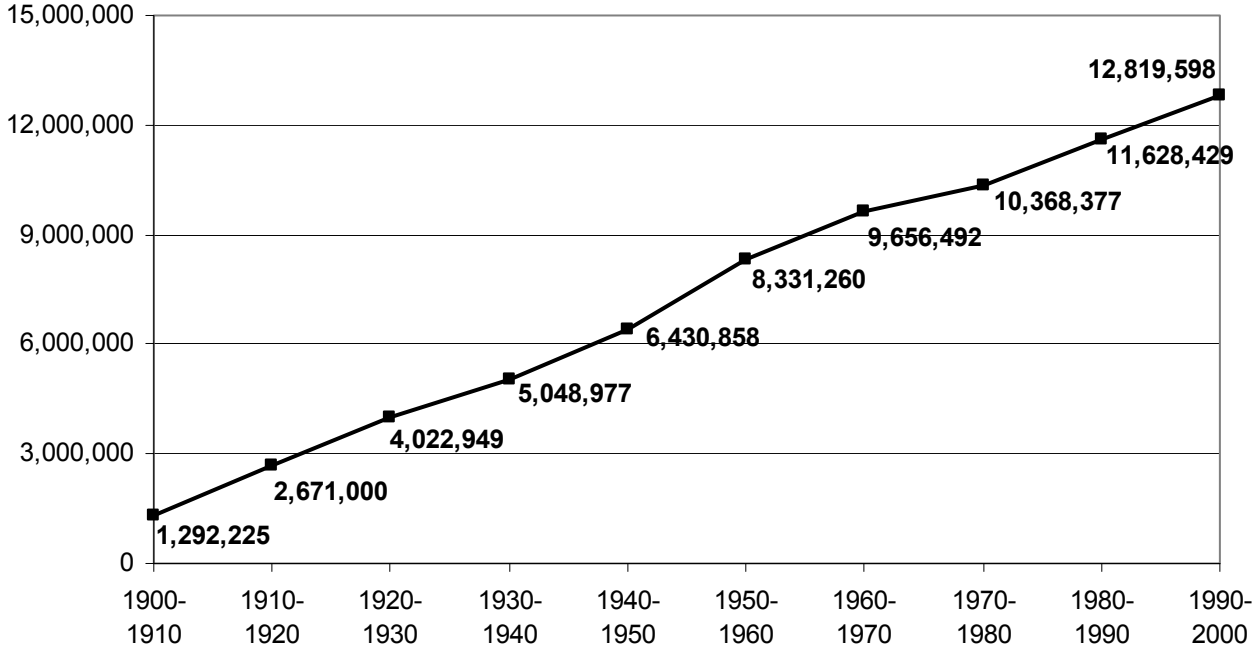

**Figure 3: Observed and projected size of the African American population, 1900-2000**

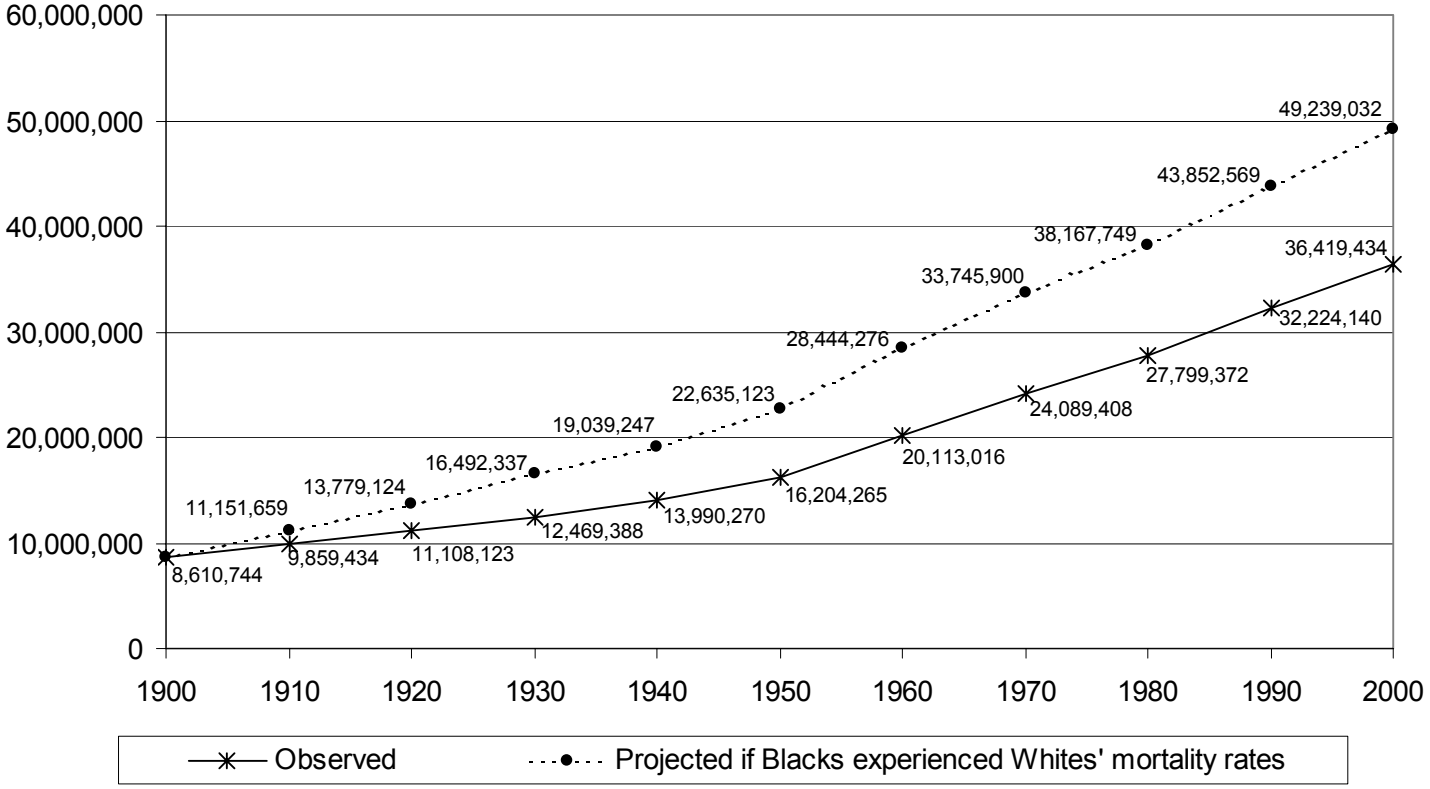


**Figure 4: Observed and projected Black-White ratio for the U.S. population, 1900-2000**