Passing as White: Racial Identity and Old-Age Longevity*

Hamid Noghanibehambari†

Jason Fletcher‡

Abstract

In the presence of segregation and discrimination during the late 19th and early 20th century, many African American men changed their racial identity and "passed" for white. Previous studies have suggested that this activity was associated with increases in income and socioeconomic status despite the costs associated with cutting ties with their black communities. This study adds to this literature by evaluating the long-run effects of passing on old-age longevity. We construct longitudinal data of black families in historical censuses (1880-1940) linked to their male children's Social Security Administration death records (1975-2005). We employ family fixed effects and show that those passing as white live roughly 9.4 months of additional years of life relative to their non-passing siblings. Additional analyses suggest substantial improvements in education and occupational standing scores as well as differential parental investments as potential pathways.

Keywords: Mortality, Longevity, Racial Identity, Historical Data

JEL Codes: I14, J15, N31, N32

* The authors claim that they have no conflict of interest to report. The authors would like to acknowledge financial support from NIA grants (R01AG060109, R01AG076830) and the Center for Demography of Health and Aging (CDHA) at the University of Wisconsin-Madison under NIA core grant P30 AG17266. We thank Joshua Goldstein and members of the CenSoc working group at the University of California Berkeley as well as members of the Health Economics Working Group at the University of Wisconsin for helpful comments.

† Corresponding Author, Center for Demography of Health and Aging, University of Wisconsin-Madison, 1180 Observatory Drive, Madison, WI 53706

Email: noghanibeham@wisc.edu, Phone: +1-806-620-1812, ORCID ID: https://orcid.org/0000-0001-7868-2900

‡ La Follette School of Public Affairs, University of Wisconsin-Madison, 1225 Observatory Drive, Madison, WI 53706-1211, USA

Email: jason.fletcher@wisc.edu

1. Introduction

Studies in various settings document racial gaps across essentially all important life outcomes (Bertocchi & Dimico, 2012; Elder et al., 2016; Kirby & Kaneda, 2010; Lillie-Blanton & Hoffman, 2005; Lundberg & Startz, 1998; Orchard & Price, 2017; Simeonova, 2013; Toney & Robertson, 2021). While many of these studies assume a time-invariant racial identity, other studies point to the fluidity of racial identity (Akerlof & Kranton, 2000; Atkin et al., 2021; Dahis et al., 2019; Persson et al., 2019; Nix & Qian, 2015). This literature suggests that some people endogenously choose and in many cases actively change their racial identity as a response to economic and social incentives and policy factors (Cassan, 2015; Cornwell et al., 2017; Mill & Stein, 2016). For instance, Cornwell et al. (2017) use data from Brazil and exploit within worker-reported-race variations among different employers to compare the impact of race on wages. They find that, conditional on other observable factors, race can explain roughly 40 percent of the within-employee cross-employer differences in wages.

In the US and during the pre-Civil Rights era, social segregation and policy-driven discrimination against black people hindered their economic and social opportunities. Carruthers & Wanamaker (2017) show that school segregation induced by Jim Crow laws resulted in much lower school quality among black students. They estimate that this difference in educational quality accounted for about 29-48 percent of the white-black gap in wages in 1940. Aneja & Xu (2022) document that segregation of the civil service driven by federal law changes between 1907-1920 resulted in an increasing black-white gap in earnings among civil service employees. Sundstrom (1994) argues that a persistent web of social constraints limited black people in their social and economic behavior such as shopping, housing, and their interpersonal relations. He argues that social norms informally drew color lines in occupational choice in ways that black people were excluded from many white-collar occupations. Under these and other domains of formal and informal discrimination, some black people took steps to obscure their racial identity and instead lived and identified as a white person, i.e., they "passed" for white. The phenomenon of racial passing refers to the process through which an individual, who belongs to a certain racial group, presents themselves as a member of a different racial group. This presentation should be accompanied by social acceptance and changes in racial perceptions. Passing could be an active or a passive choice and occurs through various means, such as pre-determined alterations in skin color, other physical appearance, language skills, and social presentations. The phenomenon of passing was frequent among African Americans during the early decades of the 20th century (Dahis et al., 2019; Nix & Qian, 2015). Passing and claiming white identity was illegal at the time and those who engaged in this practice were subject to certain penalties (Hobbs, 2014).[4] Moreover, it required a change in lifestyle, behavior, and in many cases a change in residential location given the large degree of residential segregation. In addition, it usually necessitated cutting ties from or denunciations of their black communities and isolation from their family. Dahis et al. (2019) show that between 1880-1940 over 300,000 black people passed for white, equivalent to roughly 16 percent per decennial census survey. They provide descriptive evidence that those who pass for whites have roughly 3 units higher occupational income scores, off a mean of 16.4. Mill & Stein (2016) examine the association between race and economic outcomes using US decennial censuses between 1910 and 1940. They compare wage differences among sibling adults in 1940 who came from the same family in which in 1910 one child is enumerated as Mulatto (lighter-skin) and

[4] The legal aspects appeared in a series of state-level reforms under the "Racial Integrity Laws", "Segregation Laws" and the infamous "One-Drop Rule" laws. These laws banned people of color from passing, claiming racial identity, registering for white schools, and interracial marriages. The punishment of passing for white varied by states and period. It was usually considered a misdemeanor or a felony and resulted in fines, imprisonment, or even expulsion from state residency (Hobbs, 2014).

another child is coded as black (darker-skin). They do not find significant wage differences based on these categories. However, they find that those categorized as “Mulattos” who later pass for white (i.e. were enumerated as “white race”) in the 1940 census earn roughly 31 percent more than their enumerator-categorized “black” siblings. Moreover, the labor income of those who pass is about 42 percent higher than those who do not pass. Abramitzky et al. (2023) implement sibling fixed effects using full-count historical censuses to examine the economic and educational differences between perceived skin color reflected in black/mulatto race classification. They find that compared with sisters coded as black, sisters coded as mulatto have higher education and are more likely to have higher educated husbands. However, they do not find the same significant difference among brothers coded as mulatto versus their brothers coded as black.

Despite the importance of understanding the relevance of racial discrimination in individuals’ outcomes, these studies are limited to short-run and medium-run evaluations and focus on economic outcomes (Akerlof & Kranton, 2000; Ananat, 2011; Saperstein & Penner, 2012; Sundstrom, 1994). In particular, few studies have explored the associations with health outcomes. One exception is the study of Osborne (2022) who explores the black-white and Mulatto (i.e., mixed black and white race)-white gap in longevity using historical censuses 1850-1920 and social security death records. She finds a considerably smaller longevity gap among mixed-white versus black-white comparisons. In this paper, we aim to extend prior work on later-life consequences of racial passing by examining its long-term and cumulative effects on a summary measure of life course exposures, and old-age mortality.

We combine social security death records between 1975-2005 linked to the 1940 census with historical census linking database (1880-1930) to construct a longitudinal panel of 2,246 black families in which one sibling passed for white and the other did not. We compare cross-siblings' longevity and find that siblings who passed enjoy 9.4 months longer lives. We document that those who passed are more likely to migrate out of their birthplace to areas with a lower share of blacks. We observe considerably larger benefits of passing for the subsample of migrants and those from lower socioeconomic families. Moreover, we observe an increase of about 2.2 years in schooling and a rise of 26 percent in the occupational income score of those who pass versus their siblings.

This study adds to the small and ongoing literature on racial identity and individuals' outcomes in two ways. First, to our knowledge, this is the first to link racial passing and the relevance of race in later-life longevity. Second, passing occurred mostly in early adulthood. By showing the association between passing, socioeconomic measures, and their later-life mortality effects, we also add to the literature that evaluates determinants of mortality. Specifically, we add to the literature that establishes a link between life-cycle conditions and old-age later-life mortality (Buckles et al., 2016; Fletcher, 2012; Lleras-Muney, 2022).

2. Data Sources and Sample Construction

The primary source of data comes from the Numerical Identification (Numident) files and Death Master Files (DMF) of Social Security Administration death records extracted from the CenSoc Project (Goldstein et al., 2021). The Numident/DMF data records each person's death and birth date, hence providing exact information about the length of life. The primary advantage of the data is its link to the full-count 1940 census at the individual level. Therefore, we have access to a wide array of individual and family-level characteristics in their early decades of life.

Passing occurs during adulthood when individuals leave their childhood households. Moreover, to measure someone who is passing, we need information for at least two points of time. Thus, we search for individuals in historical decennial censuses 1880-1930 using cross-census linking rules provided by Abramitzky et al. (2020).[5] We are able to locate about 36 percent of individuals in the original sample during their childhood. We focus on individuals for whom we can extract information on the race of both their mother and father.[6] We also focus on males since historical census linking is primarily possible for males and the link between death records and the 1940 census also covers more male individuals. The main reason is that the links are mainly based on name commonalities and women change their names over time.[7] These restrictions leave us with a sample size of 6,055,587 individuals, of which 544,987 persons are black.[8] The independent variable of interest in our study is a dummy that indicates passing. This indicator takes a value of one if the individual's father is black, the individual mother is black, and the individual is recorded as black during childhood, but is recorded as white in the 1940 census. The passing dummy is zero otherwise.[9,10]

---

[5] The Census Linking Project provides several linking rules for each set of two historical censuses. These rules vary based on their match rate and their accuracy of match. These methods are developed by Abramitzky, Boustan, and Eriksson (ABE) (Abramitzky et al., 2012, 2014, 2021). For the main analysis of the paper, we use the method of ABE-NYSIIS standardized names. In Appendix C, we use ABE based on exact names, a more restrictive and accurate linking rule. We observe very similar results.

[6] In Appendix G, we show that if we focus on those children whose relationship to the household head is "child" (presumably biological as opposed to stepchild, adopted, etc.) we find almost identical results to the main results of the paper.

[7] In Appendix A, we use the Berkeley Unified Numident Mortality Database (BUNMD) to replicate the results of the paper. The main advantage of BUNMD data, besides its much larger sample size, is that it contains death records for both males and females. The disadvantage of BUNMD, which hindered its usage in the main analysis of the paper, is that it is not linked to censuses and so we cannot link family characteristics to individuals and search for passing. However, since it is based on death records of people who applied for social security, we have information on race for each time they applied for social security claims starting from 1935. We define passing if the individual changed their race from black to white over the times they applied. We implement regressions similar to equation 1 and find surprisingly similar effects of passing on longevity. Further analysis suggests that the passing-longevity relationship is primarily confined among male individuals.

[8] We should note that recording of "black" in race categories was not limited to those with *only* "African American" ancestry. For instance, based on 1940 census, enumerators were instructed to return the race category "Negroes" for all individuals with a small percentage of African American ancestry (or per 1940 census: "Negro Blood"). This could be individuals with mixed white-black or mixed Indian-black race.

[9] One concern is the measurement error in recording race by census enumerators. As Dahis et al. (2019) suggested, this is unlikely given the highly segregated residential locations of blacks and whites. Moreover, such measurement errors could also lead our design to capture mis-coding of whites. However, the share of whites who passed for blacks in the full sample of this paper accounts for about 0.7 percent of whites, a minimal figure compared with black-white passing of about 9 percent.

[10] Another concern is that, in some cases, census enumerators used the identified race of the head of the household for all individuals in the household. If, for instance, a household is by mistake identified as black in historical census,

One of the reasons that could lead to or at least facilitate the passing procedure is the lighter shades of skin color. However, we do not have access to phenotype data. The detailed race information in several historical censuses covers a category to represent mixed white-black race (historically called "Mulatto"). People under this category could presumably have slightly lighter skin color than their siblings who were recorded "Black/African American". In Appendix H, we show that passing and being recorded as "Mulatto" have a positive, sizeable, but statistically insignificant association. Further, another factor that may facilitate a person's acceptance in the destination community is the "blackness/whiteness" of their names. Several studies investigate the influence of having a distinctively black name on a wide array of outcomes, including longevity (Fryer & Levitt, 2004; Goldstein et al., 2022; Kreisman & Smith, 2023). In Appendix I, we use the restricted version of the 1940 census that contains individuals' names and show that those who passed have, compared to their siblings, a lower "black name index".

To enable cross-siblings comparisons, we implement a more rigorous sample selection. We focus on families who have a child who passes for white in which there is another male sibling who was reported black during childhood, who reported being black in 1940 (i.e., non-passing siblings), and that the sibling died between 1975-2005, and that his death record can also be found in Numident/DMF death records. This leaves us with a sample of 4,674 observations.[11]

One concern related to the process of sample selection and construction is that the process of linking death records and census data is correlated with passing. In Appendix F, we explore this concern and show that those who pass are less likely to be observed in the final linked samples

household members are considered into our passing groups as in 1940 they are reported non-black. To check whether this is a concern, we try to link fathers in historical censuses to the 1940 census and check whether they are still reported as black or not. Although the cross-census linking limitation and mortality allows for less than 20 percent of fathers to be linked to the 1940 census, we find that 97.5 percent of the linked individuals are identified as blacks in 1940.

[11] In Appendix E, we illustrate the steps toward constructing the final sample.

even after controlling for family fixed effects. This is not surprising as passing could be accompanied by name changes and that name commonalities are the main rule in linking the two datasets. Another concern relates to the confounding influence of measurement errors caused by mismatches across census waves. Different censuses contain various parental information that are time-invariant and hence should be consistent. Some of these pieces of information are not used for cross-census linking using automated algorithms and can be used to verify the accuracy of links. Specifically, we use parental birth state and birth year information (not used in the construction of linking rules), compare them across linked censuses, identify inconsistent reports, and replicate the main results of the paper using the subsample of consistent parental characteristics. The results are discussed in Appendix J. At best, the measurement errors cause a downward bias and our coefficient sizes (discussed in section 4.1) likely underestimate true effects.

Summary statistics of the final sample are reported in Table 1 for the full sample, the sample of black people, and the family sample in the consecutive panels. The average black-to-white passing is about 0.93 percent of the population. Among people who reported being black in historical censuses 1880-1930 (second panel), the ratio of passing is about 8.5 percent. This is lower than the cross-race transition matrix data provided by Dahis et al. (2019) which suggests an average passing rate of 15 percent. We start constructing our analysis sample from the Numident/DMF sample linked with the 1940 census. The linked sample has a lower share of blacks (~6.7%) than the general population although the black sample in the linked data represents characteristics of the general black population fairly well (Breen & Osborne, 2022). The lower match rate is one potential reason for observing a lower passing rate in our sample compared with Dahis et al. (2019). Moreover, to the extent that we are unable to detect those who passed as white, our OLS estimates provide a lower bound of the true associations.

In the family sample, the standard deviation of within-family passing is about 0.68, and cross-sibling percentage discordant in the passing dummy equals one. The average age-at-death in the full sample, sample of black people, and family sample are 933.8, 910.7, and 915.6 months (77.8, 75.9, and 76.3 years), respectively. Figure 1 shows the geographic distribution of the share of black people who pass for white based on their 1940 county-of-residence in the full sample. Figure 2 depicts the density distribution of those who pass and those who do not in the family sample. Visually, those who pass for white reveal an advantage in longevity compared to those who do not.

3. Econometric Method

Our identification strategy compares the longevity of those who pass for white to their siblings who do not pass for white, conditional on fixed effects and covariates. Specifically, we estimate the following ordinary-least-square regressions:

$$y_{ifbt} = \alpha_0 + \alpha_1 Pass_i + \alpha_2 X_i + \zeta_f + \xi_{bt} + \varepsilon_{ifbt} \quad (1)$$

Where y is age-at-death of individual i from family f who is born in state b and year t. In X, we include a series of dummies to capture individuals' education and occupational income score in 1940. We also add a missing indicator for missing values of these covariates. The parameter ζ represents family fixed effects and accounts for confounding factors such as shared childhood exposures and common genetic endowments across siblings. The parameter ξ represents birth-year-by-birth-state fixed effects.[12] These fixed effects control for the influence of state-level policies and general social norms that influence the life-cycle experiences of blacks and that vary at the state-year level. Although we are restricting variation to eliminate the role of many

[12] We include birthplace fixed effects instead of 1940 place fixed effects since a growing literature suggest the importance of birthplace features in shaping later-life mortality (Xu et al., 2020, 2021).

confounders, there are still concerns about the unobserved influence of characteristics of those who pass for white compared to those who do not. Therefore, we avoid a causal interpretation and rely on correlational links. Finally, ε is a disturbance term. We cluster standard errors at the family level.

4. Results

4.1. Main Results

The main results of the paper are presented in Table 2. First, we use the full sample and compare those who pass for white to the general population in columns 1-2. We find an increase in longevity of about 8.8 months. We then use the family sample and replicate the OLS results in column 3-4. We observe a reduction in the marginal effect of passing of about 4 percent after controlling for education and occupational scores in column 4. In column 5, we add family fixed effects without individual controls. In column 6, we report the results of the fully parametrized model. The estimated associations are about 6.3 percent larger than the OLS results of the full sample (column 2) and 10.7 percent larger than the OLS estimates of the family sample (column 4). This rise in magnitude after controlling for family fixed effects implies some degrees of within-family discrimination in favor of children who will pass as white as adults (i.e., those who likely have lighter-skin) in ways that can influence their health later in life. The estimated coefficient suggests that those who pass for white live about 9.4 months longer lives compared to their siblings. In Appendix B, we show that this finding is robust across a wide range of alternative specifications and functional forms.

Chetty et al. (2016) use Social Security death records linked to individual tax records database to evaluate the income-longevity relationship across income percentiles. They find that for each additional income percentile longevity increases by about 1.9 months. At the sample's median income, this means an increase of $8,000 (in 2020 dollars). The marginal effect of column 6 of Table 2 is equivalent to a permanent increase in income of about $39K among individuals who pass for white compared to their siblings.

4.2. Effects on Migration and Place Attainment

The Great Migration of African Americans during the 1910s-1930s resulted in considerable changes in economic and social opportunities that could influence their old-age health (Collins, 2021; Derenoncourt, 2022; Fouka et al., 2022). Therefore, one may argue that the effects could reveal heterogeneity among movers and stayers. We use information about birth-state and state-of-residence in 1940 to construct a dummy indicating migrant status. We then use regressions in the spirit of equation 1 to investigate whether those who pass for white are more likely to migrate. These results are reported in column 1 of Table 3. We observe an increase in the probability of interstate migration of about 2.4 percentage-points, off a mean of 0.7. We also use county-of-birth and county-of-residence in 1940 to build a cross-county migrant dummy. We find that passing is associated with a 41 percentage-point rise in the likelihood of cross-county migration between birth and adulthood, off a mean of 0.69 (column 2). Besides, passing is associated with an increase in the distance between county-of-birth and county-of-residence in 1940 by about 124 miles (off a mean of 160, column 3) or 24 percent (column 4).

In columns 5-8, we evaluate the changes in attributes of place-of-residence in 1940. Those who pass are less likely to reside in urban areas (column 5). They are more likely to move to counties with a lower share of blacks (column 6), a lower share of low-educated people (column 7), and higher socioeconomic measures (column 8). For instance, we observe an increase in the average county-level occupational income score by about 0.29, equivalent to a 1.5 percent increase from the mean.

In columns 5 and 6, we explore the heterogeneity in the passing-longevity relationship based on migrant status. We observe a higher association among migrants suggesting an increase in longevity of about 11.6 months. We also observe a positive and significant relationship among non-migrants, though the marginal effect is insignificant due to limited sample size and low power.

4.3. Heterogeneity Analysis

In Table 4, we explore the heterogeneity of the results across subsamples based on birthplace and family socioeconomic status. First, we explore the effects among those siblings born in southern and non-southern states (columns 1-2). We find that the effects are larger among those born in the South compared to those born in other regions. Although we have a much smaller sample size of non-southern-born individuals, which results in noisy estimates. Next, we split the sample based on fathers' socioeconomic scores observed in historical censuses. We find smaller and noisy estimates among individuals with father socioeconomic index above the median. Among those with low socioeconomic status families, we observe larger and statistically significant passing-longevity associations.

4.4. Selection based on Family Socioeconomic Characteristics

We should note that those who pass may differ from those who do not in terms of physical characteristics. Therefore, passing combines both the phenotypic features with the active choice of individuals. One question that may arise is whether those who (choose to) pass come from families with different socioeconomic backgrounds. To answer this question, we regress several parental socioeconomic and education variables on a measure of passing, conditional on state-year of birth. We focus on the subsample of individuals who are reported to be black in the first census they appear. The results are reported in Table 5. We use the information on fathers' socioeconomic scores in historical censuses as a proxy for family socioeconomic background. Column 1 suggests that those who pass come from families with 0.45 units higher socioeconomic score, off a mean of 14.1.

Since historical censuses 1870-1930 do not report education, we refer to the 1940 census to extract information on parental education. The limitation of using the 1940 census is that many of the cohorts of the analysis sample may have left their original households. Therefore, younger cohorts are more likely to be in the sample of these regressions. We report the results for mother and father education in columns 2-3 of Table 5, respectively. We observe significant and large correlations between passing and parental education. On average, passing is correlated with 1.5 and 1.8 additional mother and father education, respectively. Therefore, the results suggest that those who passed are more likely to originate from higher socioeconomic families and families with higher parental education.

As a final check, we also explore the association between passing and birth order. Several studies suggest that birth order can predict lifecycle outcomes, especially mortality (Barclay & Kolk, 2015; Modin, 2002). Column 4 suggests a negative correlation between passing and birth order. Moreover, we find that passing is associated with a 1.1 percentage-points higher likelihood of being a firstborn, off a mean of 0.24. Noghanibehambari & Fletcher (2023) implement family fixed effects and show that first-born children live about 2-3 months longer lives compared with their later-born siblings. Using the results of column 5, we can estimate a passing-longevity relationship that operate through birth order selection channel of about 0.1-0.15 months. This is only 1-1.4 percent of the reduced-form effect of Table 2.

4.5. Mechanisms

We explore potential mechanisms by exploiting the information on individual education and occupational score outcomes available in the 1940 census. We restrict the sample to those at least 18 years old and implement regressions that include family and state-year fixed effects. The results are reported in Table 6. Individuals passing as white versus their siblings have 2.2 years of additional schooling, off a mean of 7.7 (column 1). They are 6.3 percentage points more likely to attend college, equivalent to a rise of 94 percent from the mean (column 2). Moreover, they have 4.7 units higher occupational income score, off a mean of 24.8 units (column 4). In addition, there is no significant difference in the probability of having a missing value for their education and occupational score (columns 3 and 5). Several strands of literature document the education and income gradient in old-age health mortality outcomes (Chetty et al., 2016; Cutler et al., 2006; Fletcher et al., 2021; Fletcher, 2015; Lleras-Muney, 2005; Miller & Bairoliya, 2021; Savelyev, 2020). Therefore, one possible explanation for the observed results of Table 2 is that passing helped individuals to attain more education, select higher-paying occupations, and earn more income during adulthood, which in turn resulted in a healthier old age and increases in longevity.

Halpern-Manners et al. (2020) evaluate the effect of schooling on longevity using Numident/DMF death records and implements a twin fixed-effect strategy. They find that an additional year of schooling is associated with 4.1 months higher longevity. Using this number and the marginal effect of column 1 of Table 6, we estimate an increase in longevity of about 8.9 months. This number is quite similar to the coefficient of column 6 of Table 2, emphasizing the mediatory role of education. Fletcher & Noghanibehambari (2021) examine the impacts of college openings on college education and longevity using Numident data. They estimate that those who attend college as a result of a new college opening in their county-of-residence during their adolescent years live about 1 year longer. Given the 90 percent rise in college education implied in column 2 of Table 6, we can deduce an increase in longevity of about 10.8 months, slightly larger than our reduced form estimate. We should note that there are personal costs associated with passing that could offset the positive impacts of increases in their education. Individuals who pass as white could lose social ties with other family members, have limited social interactions, and induce emotional stress, which in turn affect health and longevity (Beller & Wagner, 2018; Dahis et al., 2019; Holwerda et al., 2012; Rahman, 2010; Steptoe et al., 2013).

Finally, we evaluate the associations between marital status and spouse's race. In column 6, we show that the results do not provide a significant effect on the probability of being married, although the marginal effect suggests an increase of 3.4 percent relative to the mean. In column 7, we observe a significant increase of 93 percentage points in the probability of the spouse being white (conditional on married). The main reason for this large observation is the rarity of cross-racial marriages during this time. In our family sample, 4 out of 870 black siblings who did not pass and were married in 1940 have a white spouse. Among those married individuals who passed, 998 out of 1,007 persons have white spouses. Having a white spouse can also operate as a mediatory channel as several studies point to the influence of partners and spouses in health outcomes and specifically mortality (Brown et al., 2014; Jaffe et al., 2006; Kravdal, 2017; Yu & Zhang, 2017).

5. Conclusion

After the Reconstruction Era and prior to the start of the Civil Rights Movement, African Americans faced segregation and discrimination that substantially limited their ability to accumulate human capital, hindered their opportunities in the labor market, and impeded their political and social activities. As a response, a significant portion of black people changed their racial identity and passed for white. Several studies have used such racial passing to examine the relevance of race on economic outcomes (Dahis et al., 2019; Mill & Stein, 2016). Our paper is the first to investigate the role of racial identity on later-life health outcomes by exploring the associations with old-age longevity.

We implemented family fixed effect models to compare the longevity of those who passed for white versus their siblings. We found evidence that passing is associated with about 9.4 months higher longevity during old age. The results suggested larger gains in longevity among those who stayed in their birth-state (primarily in the South). We also found larger impacts among children of lower socioeconomic status families. Additional analysis provided evidence of substantial improvements in educational attainments as a potential mechanism.

To understand the magnitude of effects, we can extrapolate the observed effects to the non-passed black population of 1940 and calculate a back-of-an-envelope life-years-change calculation. We use the marginal effect of column 6 of Table 2 and the fact that there were about 12.7 million blacks in the 1940 census. If we assume that all black people passed for white in 1940 and gained the same benefits of passing as those in our final sample, we reach a total gain of about 9.9 million life years.

References

Abeliansky, A. L., & Strulik, H. (2020). Season of birth, health and aging. *Economics & Human Biology*, *36*, 100812. https://doi.org/10.1016/J.EHB.2019.100812

Abramitzky, R., Boustan, L., Eriksson, K., Feigenbaum, J., & Pérez, S. (2021). Automated Linking of Historical Data. *Journal of Economic Literature*, *59*(3), 865–918. https://doi.org/10.1257/JEL.20201599

Abramitzky, R., Boustan, L. P., & Eriksson, K. (2012). Europe's Tired, Poor, Huddled Masses: Self-Selection and Economic Outcomes in the Age of Mass Migration. *American Economic Review*, *102*(5), 1832–1856. https://doi.org/10.1257/AER.102.5.1832

Abramitzky, R., Boustan, L. P., & Eriksson, K. (2014). A nation of immigrants: Assimilation and economic outcomes in the age of mass migration. *Journal of Political Economy*, *122*(3), 467–506.

Abramitzky, R., Boustan, L., & Rashid, M. (2020). *Census Linking Project: Version 1.0 [dataset]*. https://doi.org/https://censuslinkingproject.org

Abramitzky, R., Conway, J., Mill, R., & Stein, L. (2023). *The Gendered Impacts of Perceived Skin Tone: Evidence from African-American Siblings in 1870--1940*.

Akerlof, G. A., & Kranton, R. E. (2000). Economics and Identity. *The Quarterly Journal of Economics*, *115*(3), 715–753. https://doi.org/10.1162/003355300554881

Ananat, E. O. (2011). The Wrong Side(s) of the Tracks: The Causal Effects of Racial Segregation on Urban Poverty and Inequality. *American Economic Journal: Applied Economics*, *3*(2), 34–66. https://doi.org/10.1257/APP.3.2.34

Aneja, A., & Xu, G. (2022). The Costs of Employment Segregation: Evidence from the Federal Government Under Woodrow Wilson. *The Quarterly Journal of Economics*, *137*(2), 911–958. https://doi.org/10.1093/QJE/QJAB040

Atkin, D., Colson-Sihra, E., & Shayo, M. (2021). How do we choose our identity? A revealed preference approach using food consumption. *Journal of Political Economy*, *129*(4), 1193–1251. https://doi.org/10.1086/712761/SUPPL_FILE/20190237DATA.ZIP

Barclay, K., & Kolk, M. (2015). Birth Order and Mortality: A Population-Based Cohort Study.

Demography, *52*(2), 613–639. https://doi.org/10.1007/S13524-015-0377-2

Beller, J., & Wagner, A. (2018). Loneliness, social isolation, their synergistic interaction, and mortality. *Health Psychology*, *37*(9), 808–813. https://doi.org/10.1037/HEA0000605

Bertocchi, G., & Dimico, A. (2012). The racial gap in education and the legacy of slavery. *Journal of Comparative Economics*, *40*(4), 581–595. https://doi.org/10.1016/J.JCE.2012.04.001

Breen, C. F., & Osborne, M. (2022). *An Assessment of CenSoc Match Quality*. https://doi.org/10.31235/OSF.IO/BJ5MD

Brown, D. C., Hummer, R. A., & Hayward, M. D. (2014). The Importance of Spousal Education for the Self-Rated Health of Married Adults in the United States. *Population Research and Policy Review*, *33*(1), 127–151. https://doi.org/10.1007/S11113-013-9305-6/TABLES/8

Buckles, K., Hagemann, A., Malamud, O., Morrill, M., & Wozniak, A. (2016). The effect of college education on mortality. *Journal of Health Economics*, *50*, 99–114. https://doi.org/10.1016/J.JHEALECO.2016.08.002

Carruthers, C. K., & Wanamaker, M. H. (2017). Separate and unequal in the labor market: Human capital and the jim crow wage gap. *Journal of Labor Economics*, *35*(3), 655–696. https://doi.org/10.1086/690944/SUPPL_FILE/15175DATA.ZIP

Cassan, G. (2015). Identity-Based Policies and Identity Manipulation: Evidence from Colonial Punjab. *American Economic Journal: Economic Policy*, *7*(4), 103–131. https://doi.org/10.1257/POL.20130290

Chetty, R., Stepner, M., Abraham, S., Lin, S., Scuderi, B., Turner, N., Bergeron, A., & Cutler, D. (2016). The Association Between Income and Life Expectancy in the United States, 2001-2014. *JAMA*, *315*(16), 1750–1766. https://doi.org/10.1001/JAMA.2016.4226

Collins, W. J. (2021). The Great Migration of Black Americans from the US South: A guide and interpretation. *Explorations in Economic History*, *80*, 101382. https://doi.org/10.1016/J.EEH.2020.101382

Cornwell, C., Rivera, J., & Schmutte, I. M. (2017). Wage Discrimination When Identity Is Subjective. *Journal of Human Resources*, *52*(3), 719–755. https://doi.org/10.3368/JHR.52.3.0815-7340R1

Cutler, D., Deaton, A., & Lleras-Muney, A. (2006). The Determinants of Mortality. *Journal of Economic Perspectives*, *20*(3), 97–120. https://doi.org/10.1257/JEP.20.3.97

Dahis, R., Nix, E., & Qian, N. (2019). *Choosing Racial Identity in the United States, 1880-1940*. https://doi.org/10.3386/W26465

Derenoncourt, E. (2022). Can You Move to Opportunity? Evidence from the Great Migration. *American Economic Review*, *112*(2), 369–408. https://doi.org/10.1257/AER.20200002

Elder, T. E., Goddeeris, J. H., & Haider, S. J. (2016). Racial and ethnic infant mortality gaps and the role of socio-economic status. *Labour Economics*, *43*, 42–54. https://doi.org/10.1016/j.labeco.2016.04.001

Fletcher, J. M. (2012). The Effects of First Occupation on Long Term Health Status: Evidence from the Wisconsin Longitudinal Study. *Journal of Labor Research*, *33*(1), 49–75. https://doi.org/10.1007/S12122-011-9121-X/TABLES/13

Fletcher, J. M. (2015). New evidence of the effects of education on health in the US: Compulsory schooling laws revisited. *Social Science & Medicine*, *127*, 101–107. https://doi.org/10.1016/J.SOCSCIMED.2014.09.052

Fletcher, J. M., & Noghanibehambari, H. (2021). *The Effects of Education on Mortality: Evidence Using College Expansions*. https://doi.org/10.3386/W29423

Fletcher, J., Topping, M., Zheng, F., & Lu, Q. (2021). The effects of education on cognition in older age: Evidence from genotyped Siblings. *Social Science & Medicine*, *280*, 114044. https://doi.org/10.1016/J.SOCSCIMED.2021.114044

Fouka, V., Mazumder, S., & Tabellini, M. (2022). From Immigrants to Americans: Race and Assimilation during the Great Migration. *The Review of Economic Studies*, *89*(2), 811–842. https://doi.org/10.1093/RESTUD/RDAB038

Fryer, R. G., & Levitt, S. D. (2004). The Causes and Consequences of Distinctively Black Names. *The Quarterly Journal of Economics*, *119*(3), 767–805. https://doi.org/10.1162/0033553041502180

Goldstein, J. R., Alexander, M., Breen, C., Miranda González, A., Menares, F., Osborne, M., Snyder, M., & Yildirim, U. (2021). Censoc Project. In *CenSoc Mortality File: Version 2.0. Berkeley: University of California*. https://censoc.berkeley.edu/data/

Goldstein, J. R., Stecklov, G., & Breen, C. (2022). *My Brother Moses: A Sibling Analysis of Longevity and African-American Names*.

Halpern-Manners, A., Helgertz, J., Warren, J. R., & Roberts, E. (2020). The Effects of Education on Mortality: Evidence From Linked U.S. Census and Administrative Mortality Data. *Demography*, *57*(4), 1513–1541. https://doi.org/10.1007/S13524-020-00892-6

Hobbs, A. (2014). *A Chosen Exile: A History of Racial Passing in American Life*. Harvard University Press.

Holwerda, T. J., Beekman, A. T. F., Deeg, D. J. H., Stek, M. L., Van Tilburg, T. G., Visser, P. J., Schmand, B., Jonker, C., & Schoevers, R. A. (2012). Increased risk of mortality associated with social isolation in older men: only when feeling lonely? Results from the Amsterdam Study of the Elderly (AMSTEL). *Psychological Medicine*, *42*(4), 843–853. https://doi.org/10.1017/S0033291711001772

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2006). Effects of husbands' and wives' education on each other's mortality. *Social Science & Medicine*, *62*(8), 2014–2023. https://doi.org/10.1016/J.SOCSCIMED.2005.08.030

Jia Torsten Persson, R., Jia, R., Persson Torsten, T., & Soderberg Chair, R. (2019). *Individual vs. Social Motives in Identity Choice: Theory and Evidence from China*. https://doi.org/10.3386/W26008

Kirby, J. B., & Kaneda, T. (2010). Unhealthy and uninsured: Exploring racial differences in health and health insurance coverage using a life table approach. *Demography 2010 47:4*, *47*(4), 1035–1051. https://doi.org/10.1007/BF03213738

Kravdal, Ø. (2017). Large and Growing Social Inequality in Mortality in Norway: The Combined Importance of Marital Status and Own and Spouse's Education. *Population and Development Review*, *43*(4), 645–665. https://doi.org/10.1111/PADR.12096

Kreisman, D., & Smith, J. (2023). Distinctively Black Names and Educational Outcomes. *Journal of Political Economy*, 000–000. https://doi.org/10.1086/722093/SUPPL_FILE/20190466DATA.ZIP

Lillie-Blanton, M., & Hoffman, C. (2005). The role of health insurance coverage in reducing racial/ethnic disparities in health care. *Health Affairs*, *24*(2), 398–408.

https://doi.org/10.1377/HLTHAFF.24.2.398/ASSET/IMAGES/LARGE/L-B_2B.JPEG

Lleras-Muney, A. (2005). The Relationship Between Education and Adult Mortality in the United States. *The Review of Economic Studies*, *72*(1), 189–221. https://doi.org/10.1111/0034-6527.00329

Lleras-Muney, A. (2022). Education and income gradients in longevity: The role of policy. *Canadian Journal of Economics/Revue Canadienne d'économique*, *55*(1), 5–37. https://doi.org/10.1111/CAJE.12582

Lundberg, S., & Startz, R. (1998). On the Persistence of Racial Inequality. *Journal of Labor Economics*, *16*(2), 292–323. https://doi.org/10.1086/209890

Marti-Soler, H., Gonseth, S., Gubelmann, C., Stringhini, S., Bovet, P., Chen, P. C., Wojtyniak, B., Paccaud, F., Tsai, D. H., Zdrojewski, T., & Marques-Vidal, P. (2014). Seasonal Variation of Overall and Cardiovascular Mortality: A Study in 19 Countries from Different Geographic Locations. *PLOS ONE*, *9*(11), e113500. https://doi.org/10.1371/JOURNAL.PONE.0113500

Mill, R., & Stein, L. C. D. (2016). Race, Skin Color, and Economic Outcomes in Early Twentieth-Century America. *SSRN Electronic Journal*. https://doi.org/10.2139/SSRN.2741797

Miller, R., & Bairoliya, N. (2021). Health, Longevity, and Welfare Inequality of Older Americans. *The Review of Economics and Statistics*, 1–45. https://doi.org/10.1162/REST_A_01103

Modin, B. (2002). Birth order and mortality: a life-long follow-up of 14,200 boys and girls born in early 20th century Sweden. *Social Science & Medicine*, *54*(7), 1051–1064. https://doi.org/10.1016/S0277-9536(01)00080-6

Nix, E., & Qian, N. (2015). *The Fluidity of Race: "Passing" in the United States, 1880-1940*. https://doi.org/10.3386/W20828

Noghanibehambari, H., & Fletcher, J. M. (2023). *The Early Bird Catches the Worm: The Effect of Birth Order on Old-Age Mortality*.

Orchard, J., & Price, J. (2017). County-level racial prejudice and the black-white gap in infant health outcomes. *Social Science & Medicine*, *181*, 191–198.

https://doi.org/10.1016/J.SOCSCIMED.2017.03.036

Osborne, M. (2022). *Census Race Categories and the Mortality of Mixed-Race American Men in the Twentieth Century*.

Rahman, M. O. (2010). Family matters: The impact of kin on the mortality of the elderly in rural Bangladesh. *Population Studies* , *53*(2), 227–235. https://doi.org/10.1080/00324720308080

Saperstein, A., & Penner, A. M. (2012). Racial fluidity and inequality in the United States. *American Journal of Sociology*, *118*(3), 676–727. https://doi.org/10.1086/667722/ASSET/IMAGES/LARGE/FG2.JPEG

Savelyev, P. A. (2020). Conscientiousness, Extraversion, College Education, and Longevity of High-Ability Individuals. *Journal of Human Resources*, *58*(1), 0918-9720R2. https://doi.org/10.3368/JHR.58.1.0918-9720R2

Seretakis, D., Lagiou, P., Lipworth, L., Signorello, L. B., Rothman, K. J., & Trichopoulos, D. (1997). Changing Seasonality of Mortality From Coronary Heart Disease. *JAMA*, *278*(12), 1012–1014. https://doi.org/10.1001/JAMA.1997.03550120072036

Simeonova, E. (2013). Doctors, patients and the racial mortality gap. *Journal of Health Economics*, *32*(5), 895–908. https://doi.org/10.1016/J.JHEALECO.2013.07.002

Steptoe, A., Shankar, A., Demakakos, P., & Wardle, J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(15), 5797–5801. https://doi.org/10.1073/PNAS.1219686110/SUPPL_FILE/PNAS.201219686SI.PDF

Sundstrom, W. A. (1994). The Color Line: Racial Norms and Discrimination in Urban Labor Markets, 1910–1950. *The Journal of Economic History*, *54*(2), 382–396. https://doi.org/10.1017/S0022050700014534

Toney, J., & Robertson, C. L. (2021). Intergenerational Economic Mobility and the Racial Wealth Gap. *AEA Papers and Proceedings*, *111*, 206–210. https://doi.org/10.1257/PANDP.20211113

Vaiserman, A. (2021). Season-of-birth phenomenon in health and longevity: epidemiologic evidence and mechanistic considerations. *Journal of Developmental Origins of Health and Disease*, *12*(6), 849–858. https://doi.org/10.1017/S2040174420001221

Xu, W., Engelman, M., Palloni, A., & Fletcher, J. (2020). Where and When: Sharpening the lens on geographic disparities in mortality. *SSM - Population Health*, *12*, 100680. https://doi.org/10.1016/J.SSMPH.2020.100680

Xu, W., Topping, M., & Fletcher, J. (2021). State of birth and cardiovascular disease mortality: Multilevel analyses of the National Longitudinal Mortality Study. *SSM - Population Health*, *15*, 100875. https://doi.org/10.1016/J.SSMPH.2021.100875

Yu, Y. L., & Zhang, Z. (2017). Interracial Marriage and Self-Reported Health of Whites and Blacks in the United States. *Population Research and Policy Review*, *36*(6), 851–870. https://doi.org/10.1007/S11113-017-9438-0/TABLES/3

Tables

Table 1 - Summary Statistics

	Full Sample		Sample of Black People		Family Sample	
	Mean	SD	Mean	SD	Mean	SD
Death Age (Months)	933.8035	113.8222	910.7568	117.869	915.614	108.6156
Birth Year	1912.1431	10.7223	1915.1475	10.6957	1915.4908	8.4357
Death Year	1989.9693	8.7871	1991.0502	8.5665	1991.7895	8.3
Any Passing	.0093	.0958	.085	.2789	.4932	.5
Within Family SD of Passing					.6847	.0521
Within Family Percentage Discordant of Passing					1	0
Years of Schooling	9.0305	3.426	6.0924	3.462	7.1063	3.6227
Education Zero	.0101	.0998	.0373	.1895	.0261	.1595
Education < HS	.4861	.4998	.7566	.4291	.6639	.4724
Education = HS	.3898	.4877	.1864	.3895	.2546	.4357
Education > HS	.1057	.3074	.0321	.1763	.0533	.2246
Education Missing	.0184	.1345	.0249	.1557	.0282	.1657
Occupational Income Score	23.3463	10.5885	17.2071	8.2567	18.6794	9.2626
Occupational Income Score Missing	.2548	.4358	.3507	.4772	.2833	.4506
Observations	6055587		544987		4674	

Table 2 – Passing Racial Identity and Old-Age Longevity

	Outcome: Age at Death (Months)					
	Full-Sample		Family Sample			
	(1)	(2)	(3)	(4)	(5)	(6)
Passing	9.03374***	8.83499***	9.82372***	8.40881***	9.8822***	9.40111***
	(.37697)	(.37618)	(2.86844)	(2.95434)	(2.97123)	(3.16342)
Observations	6055090	6055578	4674	4674	4674	4674
R-Squared	.40234	.40352	.40313	.40592	.73194	.73222
Mean DV	933.788	933.803	915.614	915.614	915.614	915.614
Family Fixed Effects					×	×
Individual Controls		×		×		×
State-Year of Birth FE	×	×	×	×	×	×

Notes. Standard errors, clustered on birth state, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Table 3 - Exploring the Effects on Migration, County Attainments, and Heterogeneity across Migrants

	Outcomes:				
	Cross State Migrant (Migration from Birth-State)	Cross County Migrant (Migration from County of Childhood)	Distance btw County-of-Birth and 1940-County (mi)	Log Distance btw County-of-Birth and 1940-County (mi)	Live in Urban Area 1940
	(1)	(2)	(3)	(4)	(5)
Passing	.02376*	.0936***	124.03376***	.24326***	-.05982***
	(.01364)	(.00768)	(9.15901)	(.06675)	(.01552)
Observations	4672	4672	4130	1364	4674
R-Squared	.67238	.64629	.68388	.7431	.66467
Mean DV	0.723	0.932	160.353	4.925	0.430
	1940-County Share of Blacks	1940-County Average Share of Low Educated People	1940-County Average Occupational Income Score	Age at Death (Months), Subsample of Migrants	Age at Death (Months), Subsample of Non-Migrants
	(6)	(7)	(8)	(9)	(10)
Passing	-.08118***	-.01051***	.29154***	11.72854*	8.05564
	(.00536)	(.00329)	(.10667)	(7.05632)	(8.34321)
Observations	4674	4674	4674	2388	2288
R-Squared	.74405	.68343	.71679	.91572	.94475
Mean DV	0.259	0.669	20.218	925.830	904.758
Family Fixed Effects	×	×	×	×	×
Individual Controls	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Table 4 – Exploring Heterogeneity in the Associations of Passing Racial Identity and Old-Age Longevity across Subsamples

	Outcome: Age at Death (Months)			
	Birthplace: South	Birthplace: Non-South	Low SEI Father	High SEI Father
	(1)	(2)	(3)	(4)
Passing	10.51406***	.59155	11.49665**	5.25476
	(3.33637)	(15.05609)	(4.56198)	(5.72066)
Observations	4178	496	2655	2019
R-Squared	.73025	.88743	.76197	.82716
Mean DV	917.635	898.587	895.935	941.492
Family Fixed Effects	×	×	×	×
Individual Controls	×	×	×	×
State-Year of Birth FE	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Table 5 - Passing and Parental Characteristics

	Outcomes:				
	Father's Socioeconomic Index	Mother's Years of Schooling	Father's Years of Schooling	Birth Order	First-Born Child
	(1)	(2)	(3)	(4)	(5)
Passing	.45415***	1.52923***	1.84316***	-.07315***	.01178***
	(.06181)	(.16278)	(.15984)	(.0123)	(.00306)
Observations	333228	247219	197123	251185	251185
R-Squared	.02225	.13251	.13449	.05199	.02065
Mean DV	14.318	5.806	4.951	3.543	0.236
State-Year of Birth FE	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 6 - Passing Racial Identity and Old-Age Longevity and Individual Covariates

	Outcome: [Sample of Aged > 17]						
	Years of Schooling	Education: College	Education Missing	Occupational Income Score	Occupational Income Score Missing	Being Married	Spouse Being White Conditional on Married
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Passing	2.22887***	.06309***	.00416	4.71461***	-.00094	.01887	.9333***
	(.12)	(.00852)	(.00568)	(.31948)	(.01042)	(.01495)	(.0088)
Observations	3550	3658	3658	3213	3658	3658	1978
R-Squared	.25492	.15396	.15599	.2637	.26139	.39483	.8899
Mean DV	7.666	0.067	0.028	18.902	0.116	0.556	0.492
Family Fixed Effects	×	×	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Figures

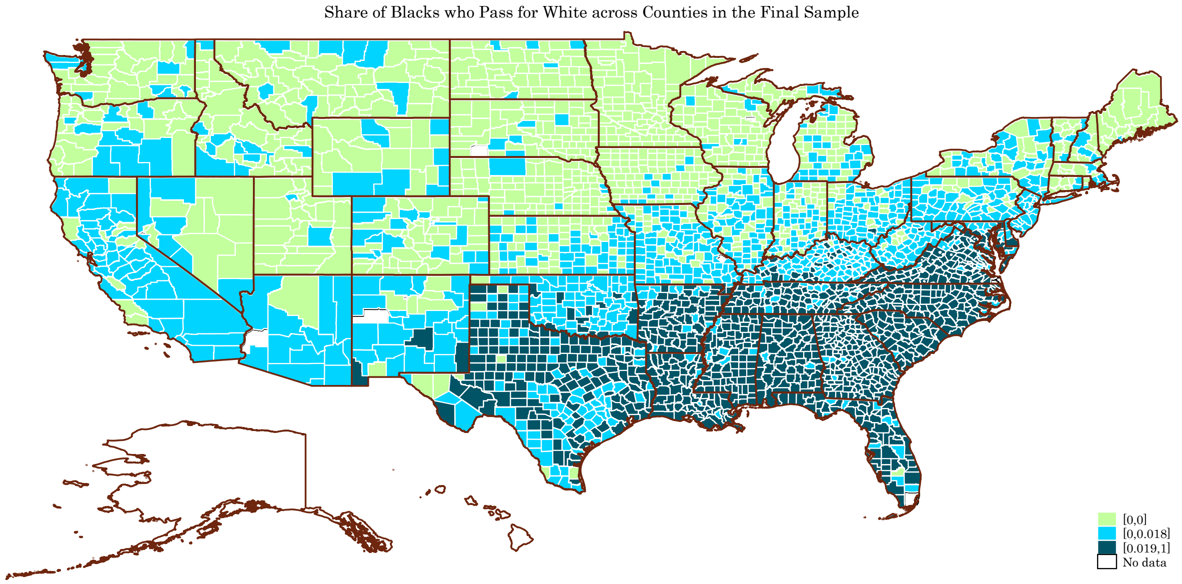


Figure 1 - Geographic Distribution of Passing

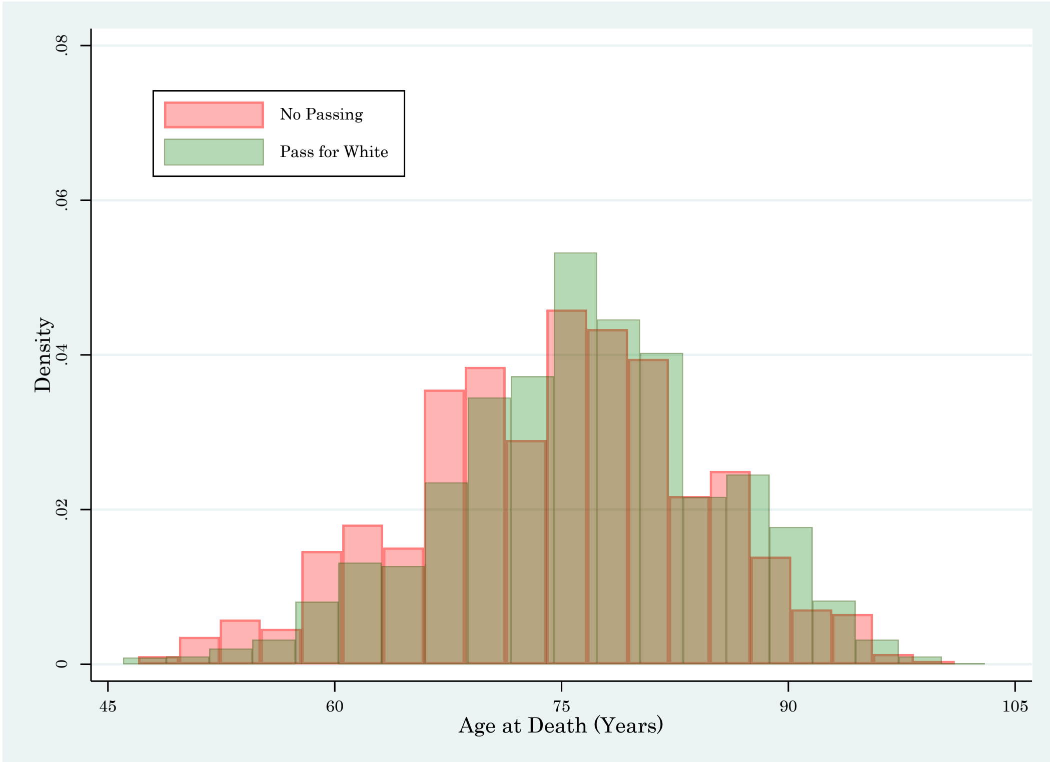


Figure 2 - Density Distribution of Age at Death among Pass and Non-Pass People in the Family Sample of Numident/DMF Data

Appendix A

In this appendix, we complement the results of the main paper using an alternative dataset. We employ Berkeley Unified Numident Mortality Database (BUNMD) data extracted from the CenSoc Project (Goldstein et al., 2021). Compared to Numident/DMF data, the BUNMD records are not linked to the 1940 census. However, there are three advantages in using BUNMD data. First, it has a much larger coverage of death records. The original database contains close to 50 million observations. Second, the data contains exact father's name and mother's name, which we can use to locate siblings. Third, it covers both genders. In addition, it has information on history of reported race over the times individuals applied for social security claims. Therefore, we are able to determine passing. We limit death records to death years 1970-2007. We should note that social security was established in 1935. Therefore, we observe race change for all cohorts post-1935. Specifically, among those who pass for white, the average of the last year of social security application is 1976, during Civil-Right Movements era.

Similar to the sample construction of the main text, we focus on two samples: the full sample and the family sample. The family sample restrict the full-sample to black people with at least one sibling in the BUNMD. We restrict the sample to sibling pairs that both reports being black in the first time and one of them passes to white in the second time of social security application. Appendix Table A-1 reports summary statistics of the final sample. The full sample of the study contains 33.4 million death records. The family sample contains 32,209 siblings. Percentage of discordant pairs is close to one. Within family standard deviation of passing is about 0.56. The average age-at-death in the full sample and family sample is 68 and 67.3 years, respectively.

We implement regressions similar to equation 1 and report the results in Appendix Table A-2. We start with the full sample and OLS regressions in column 1. The estimated coefficient suggests an insignificant increase of 2 months. However, the effects are large and significant among males (column 2). The marginal effect flips sign and becomes small and insignificant for females (column 3).

We report the OLS and family fixed effect models for both genders of family sample in columns 4 and 5, respectively. We observe very similar coefficients suggesting that family-level confounders do not bias the results. In columns 6 and 7, we replicate for males-only and female-only samples. We observe very small and insignificant coefficient among females. Based on the estimated effect of column 6, males who passed as white live 10.5 months longer versus their male siblings. This effect is comparable to the main results of the paper.

Appendix Table A-1 - Summary Statistics of BUNMD Data

	Full Sample			Family Sample		
	Observations	Mean	SD	Observations	Mean	SD
BUNMD Data:						
Death Age (Months)	33424962	816.4133	200.372	32209	807.2339	190.535
Birth Year	33424962	1928.3245	15.8193	32209	1929.2335	14.9587
Death Year	33424962	1996.8594	7.5633	32209	1997.0001	7.3611
Any Passing	33424962	.0007	.0261	32209	.3171	.4654
Within Family SD of Passing	-	-	-	32209	.5571	.0793
Within Family Percentage Discordant of Passing	-	-	-	32209	.9993	.0273
Female	33424962	.4607	.4985	32209	.5088	.4999

Appendix Table A-2 - Main Results Using BUNMD Data

	Outcome: Age at Death (Months)						
	Full Sample of BUNMD Data			Family Sample of BUNMD Data			
	Both Genders	Males	Females	Both Genders	Both Genders	Males	Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Passing	2.0398	6.6084**	-1.2808	4.6545***	4.4513***	10.5833***	.0365
	(1.824)	(2.989)	(1.1836)	(1.1173)	(1.1783)	(2.5046)	(2.0358)
Observations	33424962	18024749	15396384	30735	30473	10349	10962
R-Squared	.8071	.7868	.8123	.79	.8631	.8914	.8703
Mean DV	816.413	774.961	864.973	811.749	812.741	775.376	862.825
Family Fixed Effects					×	×	×
Individual Controls	×	×	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual control includes a dummy for gender.
*** p<0.01, ** p<0.05, * p<0.1

Appendix B

In Appendix Table B-1, we explore the robustness of the results. In column 1, we replicate the main results (column 6 Table 2) to have a benchmark comparison. In the following columns, we keep the fully parametrized model of column 6 and add more covariates. In column 2, we interact birth-state fixed effects with individual education and occupational income score dummies to allow for time-invariant characteristics of states to flexibly vary by individuals of different socioeconomic status. In column 3, we interact birth-month with birth-year fixed effects to account for the influence of birth seasonality in later-life health (Abeliansky & Strulik, 2020; Vaiserman, 2021). In column 4, we add dummies for month of death to account for seasonality patterns in mortality (Marti-Soler et al., 2014; Seretakis et al., 1997). In column 5, we add a wide array of additional individual covariates, including dummies for marital status, employment status, homeowner status, wage, and number of children. The estimated coefficients are quite comparable to that of column 1.

Next, we explore the robustness of the functional form. Specifically, we replace the outcome with the log of age-at-death in column 6. The coefficient suggests that passing is associated with 1.1 percent higher age age-at-death, almost identical to the implied percentage change from the mean in column 1. In columns 7 and 8, we replace the outcome with binary variables indicating living beyond ages 70 and 75, respectively. the coefficients imply 3.8 and 10.3 percent rise in the probability of living beyond 70 and 75 years, respectively.

We show the robustness of standard errors in columns 9 and 10. In column 9, we use Huber-White robust standard errors. In column 10, we employ two-way clustering at the family and birth-year level. In both cases, the coefficients remain significant at 1 percent level.

Appendix Table B-1 - Robustness Checks

	Outcome: Age at Death (Months)				
	Column 6 Table 2	Adding County-of-Birth FE	Adding Birth-State by Covariates FE	Adding Birth-Year by Birth-Month FE	Adding Death-Month FE
	(1)	(2)	(3)	(4)	(5)
Passing	9.40111***	10.50957***	9.36884***	10.45883***	9.64549***
	(3.16342)	(3.81541)	(3.20512)	(3.39946)	(3.1512)
Observations	4674	4503	4644	4509	4674
R-Squared	.73222	.77071	.74061	.77948	.73407
Mean DV	915.614	915.480	915.494	912.232	915.614
	Adding more individual Covariates	Outcome: Log of Age at Death	Outcome: Age at Death > 70 Years	Outcome: Age at Death > 75 Years	Clustering at Family and Birth-Year
	(6)	(7)	(8)	(9)	(10)
Passing	8.27036**	.01117***	.02826*	.05162***	9.40111***
	(3.21934)	(.00361)	(.01507)	(.01627)	(2.79607)
Observations	4674	4674	4674	4674	4674
R-Squared	.73465	.72817	.6603	.68046	.73222
Mean DV	915.614	6.812	0.726	0.530	915.614

Notes. Standard errors, (except for column 12) clustered on birth state, are in parentheses. All regressions include family fixed effects, state-by-year-of-birth fixed effects, and individual controls. Individual controls include dummies for education and socioeconomic status. Additional individual covariates of column 7 include marital status, number of children, wage, employment status, labor force status, and house ownership.
*** p<0.01, ** p<0.05, * p<0.1

Appendix C

In the main analysis of the paper, we used the method of Abramitzky-Boustan-Eriksson (ABE) based on NYSIIS standardized names as the linking rule across historical censuses. In Appendix Table C-1, we use an alternative rule, i.e., ABE-exact names, for linking. We observe very similar coefficients compared with those in columns 2-6 of Table 2.

Appendix Table C-1 - Replicating the Main Results Using an Alternative Criteria of Matching the Historical Censuses

	Family Sample, Outcome: Age at Death (Months)			
	(1)	(2)	(3)	(4)
Passing	9.53463***	8.20404***	9.53114***	9.16024***
	(2.80797)	(2.88894)	(2.9122)	(3.08591)
Observations	4951	4951	4951	4951
R-Squared	.4486	.45077	.75406	.75433
Mean DV	910.488	910.488	910.488	910.488
Family Fixed Effects			×	×
Individual Controls		×		×
State-Year of Birth FE	×	×	×	×

Notes. Standard errors, clustered on birth state, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.

Appendix D

Appendix Table D-1 replicates the results of Table 6 for the full sample. For most outcomes, we observe a similar pattern of results. The only anomaly is the effect of column 8 that those who passed move to counties with a lower occupational income score. However, similar to the family sample, we observe larger benefits of passing among migrants than non-migrants.

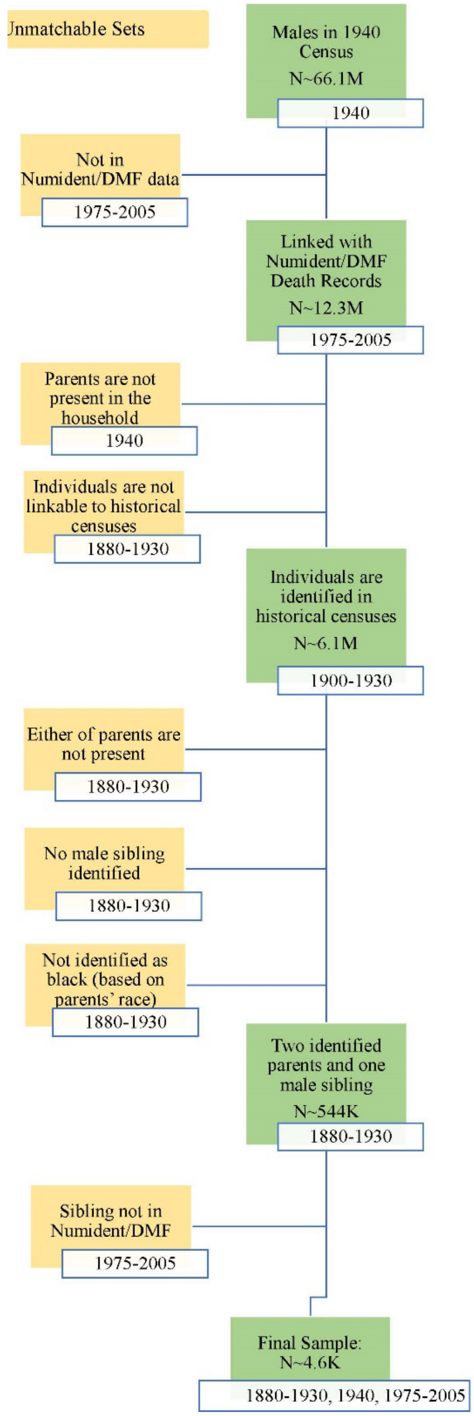
Appendix Table D-1 - Exploring the Effects on Migration, County Attainments, and Heterogeneity across Migrants, Using the Full Sample

	Outcomes:				
	Cross State Migrant	Cross County Migrant	Distance btw County-of-Birth and 1940-County (mi)	Log Distance btw County-of-Birth and 1940-County (mi)	Live in Urban Area 1940
	(1)	(2)	(3)	(4)	(5)
Passing	.02182***	.28775***	84.69535***	.27114***	-.02245***
	(.00473)	(.01137)	(6.76317)	(.02408)	(.00811)
Observations	6055091	6055091	5795788	2479683	6055091
R-Squared	.07784	.09019	.0672	.13083	.17481
Mean DV	0.683	0.452	131.950	4.795	0.535
	1940-County Share of Blacks	1940-County Average Share of Low Educated People	1940-County Average Occupational Earnings Score	Age at Death (Months), Subsample of Migrants	Age at Death (Months), Subsample of Non-Migrants
	(6)	(7)	(8)	(9)	(10)
Passing	-.01086***	-.00047	-.13851	9.8215***	6.11302***
	(.00376)	(.00178)	(.14059)	(.63282)	(.5959)
Observations	6055091	6055091	6055091	1637940	4416620
R-Squared	.56717	.37818	.40214	.37683	.4105
Mean DV	0.084	0.612	43.175	945.456	929.447
Individual Controls	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix E

In Appendix Figure E-1, we show the steps toward constructing the final sample. The left set of boxes show the subsamples that were excluded in each step. The green boxes show the survived subsamples. Below each box, we refer to the dataset from which the selection occurred. Moreover, in green boxes, we show the number of individuals who survived each step.



Appendix Figure E-1 - Illustration of Sample Selection Steps from the Original Population to the Final Sample

Appendix F

The death window of DMF/Numident data covers deaths that occurred between 1975-2005. One concern of this death year selection relates to the merging procedure of death records and census records. Since longevity has improved significantly over the early 20th century cohorts, the endogenous appearance of cohorts in the linked data could imply under/over estimations in our results. For instance, if earlier cohorts (e.g., those born before the sample median of 1915) who passed for white are less likely to be linked, one conclusion is that they have earlier mortality, i.e., prior to 1975. Therefore, our results may over-estimate the true passing-longevity relationship. On the other hand, if later-born cohorts who pass are less likely to be in the linked data, one may deduce that their longevity is higher and they face delayed mortality. Therefore, the effects are underestimated. We can empirically test these possibilities by exploring the association between successful linking between census and death records and passing. In so doing, we use the original cohorts of black people in historical censuses who are linked to the 1940 census. We link them to DMF/Numident data and generate a successful merging dummy that equals one if the records are merged and zero otherwise. We the implement OLS and family fixed effect models to examine passing-successful-merging associations.

The results are reported in columns 1 and 2 of Appendix Table F-1. With the inclusion of family fixed effects, we find a negative association, equivalent to about 16 percent reduction from the outcome mean. One explanation for this result is that those who pass likely change their names. Since name commonalities are the primary criteria for linking census and death records, it is not surprising to observe a negative association. In the next columns, we examine this association among earlier (cohorts born before 1915) and later (born after 1915) cohorts. Compared to the mean of the outcome, earlier cohorts reveal 24 percent lower match while later cohorts have 8 percent lower match.

In Appendix Table F-2, we examine the passing-longevity relationship across earlier and later cohorts in OLS and family fixed effect models. In columns 1-2, we replicate the main results for the full sample. Column 4 suggests five months increase in longevity of those who pass for whites among siblings born before 1915. This smaller coefficient (relative to the benchmark of column 2) point to the potential earlier mortality influence. Moreover, column 6 suggests an effect quite similar to the main results for later-born cohorts.

Appendix Table F-1 - Passing and Successful Merging

	Outcome: Successful Merging					
	Full-Sample	Full-Sample	Birth Cohorts ≤ 1915	Birth Cohorts ≤ 1915	Birth Cohorts > 1915	Birth Cohorts > 1915
	(1)	(2)	(3)	(4)	(5)	(6)
Passing	.04092***	-.03616***	.02566***	-.03907***	.08923***	-.02562***
	(.00048)	(.00272)	(.00053)	(.00301)	(.00104)	(.00656)
Observations	6273928	381152	3193635	188854	3080293	135873
R-Squared	.06707	.52939	.04409	.53811	.08327	.51293
Mean DV	0.088	0.237	0.076	0.160	0.101	0.319
Family Fixed Effects		×		×		×
Individual Controls	×	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table F-2 - Passing and Longevity for Recent and Earlier Cohorts

	Outcome: Age at Death (Months)					
	Full-Sample	Full-Sample	Birth Cohorts ≤ 1915	Birth Cohorts ≤ 1915	Birth Cohorts > 1915	Birth Cohorts > 1915
	(1)	(2)	(3)	(4)	(5)	(6)
Passing	12.18744***	10.49579***	11.50681**	9.37312	12.20406**	11.83247**
	(3.71032)	(4.055)	(5.77481)	(5.8747)	(4.8598)	(5.68587)
Observations	3004	3004	1269	1269	1735	1735
R-Squared	.45157	.76852	.29876	.72704	.26775	.67672
Mean DV	911.896	911.896	975.097	975.097	865.670	865.670
Family Fixed Effects		×		×		×
Individual Controls	×	×	×	×	×	×
State-Year of Birth FE	×	×	×	×	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix G

One factor to consider in the main analysis sample is the presence of biological and adopted children. The census does not provide exact relationship between children and their mothers or fathers. However, it allows us to observe the relationship between a child and the household head (e.g., spouse, child, adopted child, stepchild, grandchild, etc.). We use this information to explore the association between passing and being a (presumably) biological child in the household. Column 1 of Appendix Table G-1 suggests that those who passed are 6 percentage-points more likely to be a biological child, off a mean of 0.92. To assess the influence of this relationship on the results, we exclude all children who are not marked as "child" (hence, presumably, biological children of parents) in the sample and replicate the main results in column 2 of Appendix Table G-1. The results are almost identical to the main results of the paper.

Appendix Table G-1 - Passing among Biological Children Only

	Outcomes:	
	Biological Relationship with the Household Head	Age at Death (Among Biological Children Only)
	(1)	(2)
Passing	.05694***	9.99452***
	(.00648)	(3.451)
Observations	4654	3962
R-Squared	.81511	.72955
Mean DV	0.920	918.086
Family Fixed Effects	×	×
Individual Controls	×	×
State-Year of Birth FE	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix H

Passing could be a choice driven by shades of skin color that allows individuals to convince census enumerators and other community members to accept them as white individuals. While we do not have access to phenotype data, the census makes a distinction between "Black/African American" and "Mulatto" who are considered mixed race with presumably lighter skin color. One idea is that these individuals are more likely to pass, suggesting that passing is more practicable among those with relatively lighter skin color. We explore the association between being recorded as "Mulatto" and passing in Appendix Table H-1. The family fixed effect model of column 2 suggests an increase of 1.7 percentage-points, off a mean of 0.49. However, the coefficient is statistically insignificant.

Appendix Table H-1 - The Association between Passing and Being Mulatto

	Outcome: Passing	
	(1)	(2)
Being Recorded Mulatto in	-.02735	.01725
Historical Censuses	(.02521)	(.13114)
Observations	4654	4654
R-Squared	.20864	.40327
Mean DV	0.491	0.491
Family Fixed Effects		×
Individual Controls	×	×
State-Year of Birth FE	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix I

One possible mechanism to facilitate the acceptance of passing by the white communities is to change names. There are specific and recognized names used more often (or exclusively) by black people which makes it harder for the individuals carrying those names to pass. Studies suggest some short-run and long-run effects of having a distinctively black name (Fryer & Levitt, 2004; Goldstein et al., 2022; Kreisman & Smith, 2023).

In this appendix, we examine the association between passing and a measure of "black" name. We use the database of black names compiled by Goldstein et al. (2022) which calculate a "black name index" (BNI) for each first name in the death records. The BNI varies between zero (exclusively white name) to 1 (exclusively black name). We use restricted-access full-count 1940 census which contains individuals' names and merge it with the final sample of siblings and the BNI database. Cross-data merging limit the sample to 3,558 observations of which 2,673 identify within-family variations. We implement OLS and family fixed effect regressions to examine the passing-BNI associations. The results are reported in Appendix Table I-1. We find that those who pass are significantly more likely to have a lower BNI, with and without family fixed effects. For instance, those who passed have a BNI that is 0.04 units lower than their siblings, off a mean of 0.57. Their BNI is 8 percentage-points more likely to have a value less than 0.5, a 20 percent rise from the mean.

In Appendix Table I-2, we replicate passing-longevity regressions while controlling for individuals' BNI, which could be a proxy for parental behaviors that are correlated with the individual's likelihood of passing and also later life health of the individual (compared with his/her sibling). We observe a 27 percent reduction in magnitude of family fixed effect results compared to the effect of column 6 of Table 2.

Appendix Table I-1 - The Association between Passing and Black Name Index

	Family Sample, Outcomes:			
	Black Name Index	Black Name Index	Black Name Index<0.5	Black Name Index<0.5
	(1)	(2)	(3)	(4)
Passing	-.03021***	-.0354***	.06393***	.08032***
	(.00805)	(.00875)	(.02132)	(.02314)
Observations	2673	2673	2673	2673
R-Squared	.20805	.67774	.20236	.67762
Mean DV	0.574	0.574	0.390	0.390
Family Fixed Effects		×		×
Individual Controls	×	×	×	×
State-Year of Birth FE	×	×	×	×

Notes. Standard errors, clustered on birth state, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** $p<0.01$, ** $p<0.05$, * $p<0$.

Appendix Table I-2 - The Association between Passing and Longevity Controlling for Black Name Index

	Outcome: Passing	
	(1)	(2)
Passing	7.39383	6.8224
	(4.56551)	(4.60407)
Observations	2673	2673
R-Squared	.75891	.75922
Mean DV	922.150	922.150
Family Fixed Effects		×
Individual Controls	×	×
State-Year of Birth FE	×	×

Notes. Standard errors, clustered on Family, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix J

In section 2 and Appendix E, we discussed the process of sample selection which was based on a rigorous linking across several censuses and death records. One concern is that the measurement errors caused by mismatches in cross census linking rules might confound the estimates specially if passing resulted in name changes. We posit that the mismatches in cross census linking could be detected by comparing other characteristics of individuals that are not considered the automated linking algorithm. Specifically, we use parental birth state and birth year information (which are not used in the construction of linking rules) and compare them across linked-censuses. If there is a mismatch in the reported birth year or birth state of mother or father, it is possible that the record is the result of a mismatch. We should keep in mind that this is not a definite mismatch but could also be the result of misreporting or enumeration errors. We remove these individuals with conflicting information on parental birth state and birth year and replicate the main results. Appendix Table J-1 and Appendix Table J-2 reports the results for the subsample that removes observations with inconsistent maternal and paternal birthplace and birth year information, respectively. The OLS results of columns 1-2 for the full sample and columns 3-4 for the family sample provides point estimates that are very comparable to the main results. However, when we include family fixed effects in columns 5-6, we observe considerably larger coefficient sizes. If those inconsistencies reflect measurement errors, then these measurement errors bias the coefficients downward and our main results underestimate the true effects.

Appendix Table J-1 - Passing Racial Identity and Old-Age Longevity Removing Inconsistencies of Mother's Birthplace and Birth Year

	Outcome: Age at Death (Months)					
	Full-Sample		Family Sample			
	(1)	(2)	(3)	(4)	(5)	(6)
Passing	9.13645***	9.06678***	9.63474***	9.50668***	16.32775***	15.53601***
	(.46909)	(.46867)	(3.26162)	(3.32249)	(3.949)	(4.08043)
Observations	4678559	4679047	3638	3638	2949	2949
R-Squared	.41953	.4195	.42284	.42319	.74615	.74764
Mean DV	923.953	923.973	905.617	905.617	897.888	897.888
Family Fixed Effects					×	×
Individual Controls		×		×		×
State-Year of Birth FE	×	×	×	×	×	×

Notes. Standard errors, clustered on birth state, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table J-2 - Passing Racial Identity and Old-Age Longevity Removing Inconsistencies of Father's Birthplace and Birth Year

	Outcome: Age at Death (Months)					
	Full-Sample		Family Sample			
	(1)	(2)	(3)	(4)	(5)	(6)
Passing	9.17595***	9.10962***	8.72143***	8.7435***	12.9513***	12.63728***
	(.45061)	(.45016)	(3.18782)	(3.26124)	(3.7234)	(3.84511)
Observations	4755045	4755524	3776	3776	3151	3151
R-Squared	.42095	.42092	.42787	.42819	.75087	.75195
Mean DV	924.981	925.000	908.591	908.591	900.824	900.824
Family Fixed Effects					×	×
Individual Controls		×		×		×
State-Year of Birth FE	×	×	×	×	×	×

Notes. Standard errors, clustered on birth state, are in parentheses. Individual controls include dummies for education and socioeconomic status.
*** p<0.01, ** p<0.05, * p<0.1