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Mortality Risk Among Black and White Working Women: The Role of Perceived Work Trajectories

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Abstract

Objective—Drawing from cumulative inequality theory, the authors examine the relationship between perceived work trajectories and mortality risk among Black and White women over 36 years.

Method—Panel data from the National Longitudinal Survey of Mature Women (1967-2003) are used to evaluate how objective and subjective elements of work shape mortality risk for Black and White women born between 1923 and 1937.

Results—Estimates from Cox proportional hazards models reveal that Black working women manifest higher mortality risk than White working women even after accounting for occupation, personal income, and household wealth. Perceived work trajectories were also associated with mortality risk for Black women but not for White women.

Discussion—The findings reveal the imprint of women's work life on mortality, especially for Black women, and illustrate the importance of considering personal meanings associated with objective work characteristics.

Keywords

perceived work trajectories; mortality; cumulative inequality theory; racial disparities

Work can be salubrious, promoting well-being and a sense of accomplishment, or deleterious, when the worker feels that the job is menial or unfulfilling. It is well established that work can shape psychological outlook and mood, but there is also evidence that work can have long-term effects on health and longevity (Su, 2009; Wickrama, Lorenz, Fang, Abraham, & Elder, 2005). This is not limited to those in hazardous occupations but also extends to professional occupations if the work is experienced unfavorably (Sehlen et al., 2009).

Some occupations appear to be patently favorable or unfavorable, but there is always some degree of evaluation on the actor's part in defining and evaluating his or her local work situation. One calculus for doing so is based on life-course processes—situating one's current position within an occupational history. For instance, transitioning to jobs that are better suited to one's own values and interests is partially responsible for an increase in job

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satisfaction as people age (Padavic & Reskin, 2002). In this sense, young adulthood and middle-age may be especially pivotal in evaluating whether one's line of work holds promise or is perceived as a dead-end job.

A number of studies examine how occupational characteristics may be associated with health and longevity, but most rely on cross-sectional analyses or assess work characteristics at one point in the life course. Recently, however, scholars have begun to study how occupational achievement and mobility are related to longevity, albeit in samples of gifted males (Kern, Friedman, Martin, Reynolds, & Luong, 2009) or Union Army Veterans (Su, 2009). By contrast, the present investigation uses a long-term longitudinal study of women to examine how their work lives, including work mobility, may place them at higher risk of early mortality. Given the distinct patterns of labor force participation between White and African American (hereafter, Black) women during the past half century, we give special attention to racial differences in how women view their work lives and the consequences of work trajectories on mortality.

Over the past several decades, U.S. women's participation in the labor force has increased substantially, and research has identified some of the specific conditions under which work is beneficial to health and survival (Klumb & Lampert, 2004; Pavalko & Smith, 1999). Despite women's general workplace advancement, Black and White women differ considerably in their work trajectories (Padavic & Reskin, 2002). Black women are more likely to face low-status jobs, little room for advancement, lower earnings, and a greater risk of unemployment than their White counterparts (U.S. Department of Labor, 2008). This divergence means that the purported benefits of work may be less likely for Black than for White women.

The present study aims to enhance our knowledge of racial disparities in longevity by examining the long-term consequences of women's work at midlife. We view the link between careers and survival as resting on both objective changes in occupation and income along with more subjective elements of how women view their careers. We use cumulative inequality (CI) theory to examine how work disadvantages lead to the ultimate life course risk— premature mortality—and examine how this risk accumulates differently for Black and White women.

Theoretical Background

Many theories offer insight into how work may affect longevity. Drawing from cumulative disadvantage (e.g., Dannefer, 2003), life course (Elder, 1998), and stress-process theories (Pearlin, Schieman, Fazio, & Meersman, 2005), cumulative inequality (CI) is an emergent theory focused on how inequality is generated in social systems and plays out over the life course (Ferraro & Shippee, 2009). While emphasizing the structural bases of inequality, CI theory also identifies the role of subjective social status. As Schnittker and McLeod (2005) point out, "socioeconomic positions provide more than material resources; they serve as reference points for social comparison" (p. 81).

Two axioms of CI theory are particularly useful for this analysis: (a) life-course trajectories are shaped by the accumulation of risk, available resources, and human agency and (b) the perception of life trajectories influences subsequent trajectories. Resources and people's subjective evaluations of their life trajectories both are major mechanisms driving the long-term consequences of early disadvantage, and the interaction between the two is likewise critical (Ferraro, Shippee, & Schafer, 2009). Indeed, resources may shape people's perceived trajectories, yet resources must be recognized by actors to be activated. Furthermore, one's views and the potential activation of resources may be affected by perceived trajectories.

Social comparison theorists posit that individuals engage in a life-long process of evaluating the "good" and "bad" in their lives (Festinger, 1954; Gilbert, Giesler, & Morris, 1995). In this process, actors develop an awareness of their life circumstances, based on their evaluation of those that surround them and share some likeness to them (Festinger, 1954). Consistent with this premise, CI theory posits that individuals assess life situations relative to those around them and relative to their own biographies (Ferraro et al., 2009). Objective resources and status indicators (e.g., income) are important, but the meanings of these factors are always defined in light of prior experiences (Elder & Shanahan, 2006). Thus, as actors retrospectively evaluate their lives, they align courses of action accordingly (Blumer, 1969; Carstensen, 2006), and so perceptions of status and resources are an integral part of life-course processes in concert with objective factors.

With our examination of racial differences, it may be that the influence of perceived work trajectories differs by race/ethnicity. Although CI theory does not explicitly articulate racial differences, the application here involves stratification on two overlapping domains: socioeconomic and majority–minority (e.g., racial) hierarchies. Racial disparities may lead to premature aging and weathering among Black women (Geronimus, 1992), placing them at additional disadvantage and shaping their perceived trajectories. As such, it seems likely that perceived work trajectories would be more influential for minority than for White women.

Women, Work, and Well-Being

Over the past two decades, disparities in women's health have constituted a growing interest among researchers, often with special attention to how work influences women's health and well-being. Two related literatures are useful for the present investigation. One focuses on the relationship between work and health, with survival being the ultimate health outcome. This body of research examines how occupational conditions such as status, segregation, and stress—typically measured at one point in time—influence survival (e.g., Kivimäki et al., 2002). Findings show that working women generally exhibit better health and lower mortality than nonworking women (Hughes & Dodge, 1997; Klumb & Lampert, 2004). Some have questioned whether this relationship is attributable to selection processes (Pavalko, Gong, & Long, 2007), and others have sought to explain the effects of employment in terms of role patterns, asking whether women's health is influenced by the array of statuses in their lives, including employment, marriage, and/or motherhood (Klat, Sermet, & Le Pape, 2000; McMunn, Bartley, & Kuh, 2006; Weatherall, Joshi, & Macran, 1994). Still others have tested which psychosocial aspects of work may influence health outcomes. For instance, Karasek and Theorell found that perceived demand, personal control, and support in the workplace had a positive effect on health and well-being (Karasek, 1979), reducing the likelihood of myocardial infarction (Karasek et al., 1988) and coronary heart disease (Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981; Theorell & Karasek, 1996).

A second literature, although scant, examines the relationship between women's work attitudes and well-being. Many earlier studies of this relationship appeared at a time when unprecedented numbers of women were entering the labor force and focused on women's reactions to working outside the home (e.g., Repetti, Matthews, & Waldron, 1989). An emerging body of research indicates that subjective perceptions are as powerful at predicting health as objective circumstances per se, or even more so (Demakakos, Nazroo, Breeze, & Marmot, 2008; Operario, Adler, & Williams, 2004; Singh-Manoux, Marmot, & Adler, 2005). In fact, some claim that subjective evaluations of one's circumstances provide a more complex and accurate reflection of his or her social statuses (Singh-Manoux et al., 2005).

Hence, measures of perception are integral to a well-informed assessment of work's effects on health and well-being (Schnittker & McLeod, 2005).

Contextualizing Work for Black and White Women

In explicating why work is beneficial for some and deleterious for others, it is crucial to note the marked differences in the U.S. labor force participation of Black and White women. Black women are more likely to work in lower-paying jobs and service occupations than are White women (Dozier, 2010; U.S. Department of Labor, 2008). Prior research showed higher mortality risk for manual and service workers than for nonmanual workers, which may partially explain the racial disparities in women's mortality (Weatherall et al., 1994; Williams & Jackson, 2005).

Although position in the labor force is central to women's perceptions of their work, a number of other factors may add to the differences in how work influences the health of Black and White women. First, income differentials are critical for understanding the accumulation of disadvantage in the lives of Black and White women (Dozier, 2010). Second, the 1970s was a critical time for the women's liberation movement. Women expected treatment equal to that of men and started experiencing greater pay relative to men (Goldin, 2006). Many Black women, however, were more likely to be in positions that offered little opportunity for advancement (Padavic & Reskin, 2002). Third, racial bias in the workplace may contribute to lower job satisfaction and engender further structural disadvantages for Black women (Hughes & Dodge, 1997; Pavalko, Mossakowski, & Hamilton, 2003). Fourth, the psychosocial characteristics of the types of jobs held by Black women, such as low control and high stress, could have a negative impact on women's work perceptions (Saari & Judge, 2004). Each of these factors is important in its own right, but the combination of them may mean that Black and White women view their work experiences through different lenses (Costello, Wight, & Stone, 2003). Given the status differentials by race, one may expect that work is more consequential to the health and longevity of Black than White women.

Three research questions guide the analysis:

Research Question 1: Do Black women hold less favorable perceptions of their work trajectories than White women?

Research Question 2: Are negative perceived work trajectories associated with higher mortality risk?

Research Question 3: Do the effects of perceived work trajectories on mortality differ for Black and White women?

Method

Sample

This study used data from the National Longitudinal Survey of Mature Women (NLSMW), which was carried out by the Bureau of Labor Statistics. Multistage probability sampling was used to draw a representative sample of civilian, noninstitutionalized women aged 30 to 44 years in 1967, with an oversample of Black women. The NLSMW began by surveying 5,083 women during 1967. Between then and 2003, when 2,231 (43%) of the original respondents were surveyed, the women were interviewed a total of 21 times. Most sample attrition was due to the death of respondents (29.2%), refusals (20%), and failure to locate (6%; U.S. Department of Labor, 2003).

The final sample consisted of 2,181 women (646 Black and 1,535 White), who worked for pay at least part of the time between 1967 and 1977 (questions pertaining to work perceptions were asked only of women who had been employed during at least part of the previous 5 years), tracking mortality through 2003. Compared with the stayers, the attritors were, on average, older and less educated. They also reported less household wealth and lower selfrated health. We used multiple imputation procedures (Royston, 2004) to address item-missing data on variables with greater than 5%.[1] Findings were robust to alternate strategies of handling missing data.

The logic of using the NLSMW for this study rests on three features: (a) long-term longitudinal study with very good follow-up rates and tracking of vital status; (b) repeated measurement of objective and subjective elements of women's employment, occupational mobility, and income; and (c) an oversample of Black women (27%) to test racial hypotheses.

Measures

Mortality—Mortality data were collected from interviews conducted with proxies of deceased respondents. In addition, matches were made for all participants in the baseline survey to the 2003 Social Security Administration Mortality File. We created a measure of mortality using a binary vital-status variable and a duration variable that refers to the number of months from the beginning of study to death or final interview. About 31% of women in the sample died during the study.

Perceived work trajectories—Work perceptions were asked at two time-points, in 1972 and in 1977, probing women's work lives over the previous 5 years. Respondents were asked whether they felt that their work had progressed during the past 5 years, moved backward, or remained the same. The perceived work trajectories variable summarizes the two measures and spans a 10-year period; it ranges from 1 to 5, with 1 = *persistent decline*, 2 = *limited decline*, 3 = *remained the same*, 4 = *limited progress*, and 5 = *persistent progress*. (Preliminary analyses with separate 5-year indicators for perceived work trajectories yielded similar conclusion; thus, we present the more parsimonious approach.)

Although it would be ideal to have these measures repeated throughout the study, they were measured during the first decade only. Nonetheless, these variables tap women's career development until 40 to 54 years of age. This 10-year period of the life course was an important one in the occupational life of this cohort of women—after most had borne their children and during which employment status was more stable than the preceding decade.

Status characteristics and locus of control—Chronological age was measured in years. Black was a binary variable with 1 equal to the name of the variable; self-identified White respondents were the reference group for Black. Education was measured in years of formal education attended. A control for geographic region assessed residence in the South, with 1 equal to the name of the variable and 0 equal to living in other parts of the country (other residential variables were not available). Locus of control was measured using a shortened 11-item version of Rotter's (1966) Internal-External Control Scale, with higher values corresponding to greater levels of external control. The Cronbach's alpha for locus of control is modest ($\alpha = .62$), but this scale has been validated by others (Smith & Dechter, 1991) and, as shown below, is predictive of perceived work trajectories in the NLSMW.

[1]This included 22% missing on household wealth in 2003 and 8% missing on personal income in 2003. Other variables had less than 5% missing data. Imputations were based on the respondent's personal income at baseline, age, race, marital status, education, and occupation.

Employment characteristics—To measure objective employment characteristics, four types of variables were used: type of occupation, employment status, change in occupational prestige (occupational mobility), and spells of unemployment. Type of occupation was measured using 5 binary variables: (a) managerial and clerical; (b) sales; (c) craft, operative, laborers, and farm; (d) private household; and (e) service (see Pavalko, Elder, & Clipp, 1993 for a similar grouping). A binary variable is used to account for full-time employment, with 1 equal to women who worked 40 or more hours per week and 0 equal to those who worked less than 40 hr per week. The analysis also adjusts for change in occupational prestige and unemployment between 1967 and 1977 (respondents were last asked about their work perceptions in 1977). Prestige scores in 1967 (two-digit codes) theoretically ranged from 0 to 97 and were based on income and education distributions associated with occupations identified in the 1960 Census (U.S. Department of Labor, 2003). Occupational prestige 1967-1977 is based on the Duncan Socioeconomic Index, which was created by subtracting women's occupational prestige scores in 1967 from those in 1977 (Duncan, 1961). The analysis also adjusts for spells of unemployment during the first decade. In 1967, 1972, and 1977, women were asked about time spent unemployed in the previous year. Unemployed is a count variable ranging from 0 to 3, with 0 equal to women who reported no unemployment and 3 equal to those who reported unemployment at all three measurement occasions.

Health characteristics—Although there is limited health information at the beginning of the NLSMW, we use two main health indicators to tap initial and changing health status.[2] First, the NLSMW includes a measure of health limitations, which ranged from 1 (*health does not affect work or housework*) to 3 (*health prevents respondent from working*). Second, self-rated health, a widely used global measure of health status, was measured from 1967 to 2003 with four response categories (ranging from 1 = *poor* to 4 = *excellent*). A limitation of the NLSMW for a study of mortality is that relatively few health measures were asked at baseline, but we capitalize on the repeated measurement of selfrated health over the 36-year study, especially because *changing* self-rated health is predictive of mortality (Ferraro & Kelley-Moore, 2001).

Family life—The analyses controlled for several family life variables identified in the literature as related to mortality. These included marital status, number of times divorced between 1967 and 2003, and number of children at baseline. Marital status was measured by a series of binary variables: married, divorced, widowed, and never married, with 1 equal to the name of the variable. We also controlled for those women who were married in 1967 but experienced one or more divorces during the duration of the study (i.e., count variable ranging from 0 to 4). Respondents' total number of children in 1967, when women were 30 to 44 years of age, was also examined.

Income and wealth—Time-dependent covariates for personal income and household wealth capture changes between baseline and 2003.[3] We use personal income (rather than household income) because it helps account for how women's earnings affect work perceptions without potential confounding with changes in household composition or changes in the work trajectories of other household members. Household wealth, however, accounts for family organization and accumulated assets and is likely to influence work perceptions. Personal income and household wealth are presented in thousands.

[2]Although few health measures were included at the beginning of the NLSMW, the lead investigators eventually added health-related measures to enhance the potential of the data for studying the work-health relationship. For instance, body weight was added to the interview schedule in 1986 and smoking status was added in 1989. Although these measures are not useful for mortality experienced during the first two decades of observation, we tested for the influence of these variables during the last 16 years of the study period. Neither was significant in models that included self-rated health; thus, they were omitted from further analysis.

[3]We used income and wealth in 1967 to predict perceived work trajectories in Table 2.

Analytic Plan

Analyses were divided into two main stages. In the first stage, we used ordered logistic regression to examine whether Black women held less favorable perceptions of work trajectories than White women, after adjusting for objective work trajectories, demographic, family-life, and health predictors. We predict perceived work trajectories in 1967/1972 and in 1972/1977, when women were between ages 30 and 44 at baseline and between 40 and 54 in 1977.

Second, to evaluate the relationship between work perceptions and women's mortality over a 36-year period, we estimated a series of nested models for Black and White women. First, we assessed whether work perceptions affected women's mortality, when controlling only for objective work characteristics, status characteristics, and locus of control (Model 1). Second, we added work perceptions to the model (Model 2). Finally, we added in the remaining covariates, including health characteristics and time-dependent covariates for personal income and wealth. Detailed information on the month and year of death allowed for the use of Cox proportional-hazards models.[4] Chow tests were used to test differences in slopes across the two subsamples.

Results

Descriptive statistics and bivariate tests of racial differences are presented in Table 1. About 31% of working women died by 2003. Mortality was higher for Black women than for White women (39% and 27%, respectively, $p < .001$). Black women lived, on average, 32.2 years during the observed period compared with 33.4 years for White women ($p < .001$). On average, most women perceived their work trajectories to be improving ($p < .001$). However, Black women had more negative perceptions of their work trajectories compared with White women.

Respondents were, on average, 37 years old in 1967 and about 29% were Black. White women reported higher levels of education and more internal locus of control. Black women were more likely to work in blue-collar occupations compared with White women. Compared with White women, Black women were overrepresented in private household and service occupations as well as in the category including craft, operative, laborer, and farm occupations. More than 43% of women worked full-time in 1967. For most women, occupational prestige remained fairly stable between 1967 and 1977, although Black women experienced an increase in occupational prestige compared with White women. About 40% of Black women were unemployed between 1967 and 1977 compared with 27% of White women. Black women had lower self-rated health and more health limitations than White women. White women were less likely than Black women to be widowed, divorced, or never married. Black women reported a greater number of divorces and more children over the duration of the study than did White women. White women reported higher personal income and greater net assets compared with Black women. Correlations of all variables presented in Table 1 are displayed in the appendix.

Table 2 presents ordered logistic regression models of women's perceived work trajectories for the total sample and by race. Compared with White women, Black women held less positive perceptions of their work trajectories, having about 25% lower odds of being in positive categories ($OR = 0.748$). Across the 10-year period, higher education, living in the South, a more external locus of control, higher occupational prestige, fewer weeks unemployed, and higher self-rated health were all associated with greater odds of having

[4]The analyses predict all-cause mortality because information on the cause of death is not available.

more positive perceived work trajectories. Some predictors, however, differed across Black and White working women: external locus of control was a positive predictor of perceived work trajectories among Black women, whereas fewer weeks of unemployment and higher self-rated health were associated with more positive perceived work trajectories among White women.

To address our second research question, Cox proportional-hazards models were used to estimate the effects of both measures of work trajectories on mortality risk. We first completed a full-sample analysis but present the race-specific analysis in Table 3 because of several instances of statistical interaction (the full-sample analyses are available on request).

Table 3 presents hazard ratios (HRs) and 95% confidence intervals in three nested models for Black and White women. In Model 1, we examined mortality, including only objective work characteristics, status characteristics, and locus of control. Older age was a significant, positive predictor of mortality for both Black and White women. Among White women, working in sales or service occupations (as compared with managerial or technical) were significant positive predictors of mortality.

Model 2 introduced perceived work trajectories. Perceived work trajectories from 1967 to 1977 had a significant effect on mortality for Black women but not for White women. Black women who perceived that their work had progressed in the past 10 years had a 24% lower hazard of dying by 2003 compared with those who felt that their work was static or had regressed ($p < .05$). This finding supports our expectations regarding the predictive power of perceived work trajectories on mortality, even when controlling for objective work characteristics. (In supplementary analyses, we examined reduced models that excluded the status characteristics and locus of control; again, perceived work trajectories had an independent effect on mortality for Black women only.)

Finally, Model 3 included health characteristics, life-course events, and time-dependent covariates for self-rated health, personal income, and household wealth. With all of the covariates, perceived work trajectories remained a significant predictor of mortality among Black but not White women (addressing Research Question 3). Older age was a consistent negative predictor of mortality among both Black and White women. Working in sales occupations was associated with higher mortality for White women (compared with whitecollar jobs). Also, unemployed White women had higher odds of dying than their employed counterparts. The time-dependent predictor for self-rated health showed that better health was associated with lower mortality although health limitations were associated with higher mortality for White women. Divorced White women were more likely to die than married women. Interestingly, White women who had more children were less likely to die than White women with fewer children. Income and wealth had significant effects on mortality for both Black and White women. Among White women, higher income and wealth decreased the hazard of dying. Among Black women, however, income and wealth had opposite effects on mortality: higher income increased the hazard of dying (although the effect size was very small) although higher wealth was protective for mortality. Although this finding appears counterintuitive, we suspect that this reflects employment selection to some degree or perhaps the stress of higher status (Schieman, Whitestone, & Van Gundy, 2006). At each level of wealth, higher wages could indicate that working more hours did not pay off in a survival advantage but produced more stress for the respondents.

To illustrate the impact of perceived work trajectories on mortality for Black and White women, Figure 1 graphically displays the survival function by negative and positive perceived work trajectories after controlling for all other predictors for each racial group. The *x*-axis refers to survival time in months, and the *y*-axis is the cumulative proportion of

survival. The figure illustrates racial disparity in survival for Black and White women but also shows the protective effect of positive work perceptions. The growing divergence in survival function reflects the long-term impact of perceived work trajectories, especially during the second half of the study.

Discussion

The purpose of this study was to examine mortality risk among working women while incorporating both objective elements of their work and subjective evaluations of their changing work experience. We gave explicit attention to racial differences in perceptions of work trajectories and mortality in light of the differing positions of Black and White women in the world of work. Applying cumulative inequality theory to the study of health and well-being, we anticipated that Black women would be more likely than White women to have negative perceptions of work trajectories due to location in the labor market, lower income, and lower probability of being married. Also, we posited that women's perceptions of their work trajectories would influence mortality. Using the NLSMW, we found that Black women held more negative perceptions of their work trajectories and that negative perceived work trajectories raised Black women's mortality risk, even after controlling for other predictors. Given that the NLSMW spans 36 years, it is remarkable that perceived work trajectories during the first decade of observation had an enduring effect on mortality over succeeding decades; the *long-term* influence of subjective evaluations is noteworthy in this regard.

Although we found support for our expectation that work perceptions are a significant predictor of mortality for Black women, the results were not significant for White women. Based on cumulative inequality theory, we anticipated that both Black and White women's perceived work trajectories would influence mortality but that the effect would be stronger for Black women. The results, however, were unexpected and raise some interesting questions: Why do perceived work trajectories have a long-term influence on mortality risk for Black women but not for White women? Could it be that the role of perceptions is greater for women of lower social status, who have fewer available resources? And does White women's generally higher status soften the effect of perceived work trajectories? Although definitive answers to these questions probably require additional research to confirm or refute the results reported herein, we proffer some generalizations based on these analyses.

It is important to recognize that the work experiences of Black and White women working in the late 1960s and mid-1970s were very different. Compared with White women, Black women possessed fewer resources and were less able to maximize those resources given the societal structure, as evidenced by the types of jobs Black women occupied (U.S. Department of Labor, 2008). Black women were overrepresented in private household and service occupations, rather than better-paid managerial or clerical jobs (Dozier, 2010). Along with other life-course disadvantages, these socioeconomic inequalities negatively influenced Black women's perceptions of their work trajectories and disadvantaged them in terms of later life mortality. Thus, disadvantage that compounds over time may lead to stronger influences of perceptions; in this sense, favorable or unfavorable perceptions may be more consequential to well-being for persons lacking resources.

Second, there is an accentuation effect of early perceptions among Black women. Their occupational disadvantage was clear at the beginning of the study: Black women were much more likely than White women to work in service jobs and in private households—positions that involve nonstandard work shifts and greater health risks (Presser, 2003). Nevertheless, the 1970s ushered in new opportunities for Black women. Those Black women who judged

themselves as making career progress reaped a long-term survival benefit. Beyond changing income and self-rated health, Black women with favorable perceived work trajectories experienced lower mortality risk over the 36 years. Thus, in the face of structural disadvantage, perceptions—whether favorable or unfavorable—are important to health and longevity.

Previous research also showed the importance of subjective evaluations for health outcomes (Demakakos et al., 2008; Operario et al., 2004; Singh-Manoux et al., 2005), but we are unaware of any prospective study that models the relationship between women's work perceptions and mortality. And although research has established racial differences in mortality (Sloan, Ayyagari, Salm, & Grossman, 2010), few studies have discussed perceived trajectories as a potential mediator of this relationship. Yet, as we have shown, omitting perceptions of life trajectories from analyses of the life course may overemphasize social structure while not sufficiently attending to individual experiences. Like Schnittker and McLeod (2005), we believe both are critical for explaining health disparities. Moreover, in this study, the power of perceptions appears to assume greater importance for those most structurally disadvantaged.

Although we believe the present study contributes to a better understanding of the relationship between careers and mortality, it has certain limitations. First, as noted earlier, the NLSMW data have limited health information. We capitalized on the repeated measurement of self-rated health, which enabled us to control for changing health status. We also controlled for health limitations at baseline. However, we are constrained in identifying the specific etiologic processes involved in how perceived work trajectories actually influence mortality. For instance, do unfavorable perceived trajectories raise the risk of selected diseases that are the linked to mortality? We are unable to answer this question with the NLSMW, but it is one that merits attention in future research.

Second, although our measure of perceived work trajectories was somewhat a novel way to tap women's career progress, it was asked only twice during the 36-year span of the study. Because of this limitation, we used various controls to assure that the relationship between work perceptions and mortality was not spurious. Importantly, we implemented time-dependent covariates for both personal income and household wealth to account for changes in material resources.

Third, the observed measures of objective work conditions used in this study are only a subset of the many work-related conditions that may be related to mortality. In addition, job benefits may also be important in predicting mortality. Unfortunately, in the NLSMW, respondents were not asked about job benefits until late in the study. Although it would be ideal to adjust for work-related benefits, implementing time-dependent covariates for income and wealth may account for some of the differences in benefits conferred by various occupations.

Despite the limitations, we believe that these analyses of the NLSMW contribute to our understanding of the consequences of careers on health and longevity, speaking clearly to the power of work perceptions. The results of the current investigation lend partial support to elements of cumulative inequality theory but provide the opportunity to amend other elements. The theory stresses the importance of perceptions for modifying trajectories of disadvantage but gives little context to how this process works. The present research provides evidence that perceptions of life trajectories are particularly important to Black women, who occupy disadvantageous position in American society. Whereas favorable perceived work trajectories were associated with lower mortality risk, these findings point to a *structural context* for the influence of perceptions—a topic that merits further study.

Recognizing the importance of subjective evaluations is important for social and behavioral research, but identifying the conditions under which it is potentiated is an important next step. For both cumulative inequality theory and scholarship on the life course, these findings suggest that subjective evaluations operate along a social gradient. In Sampson and Laub's (2005) life-course perspective on crime, they spoke of personal agency as *situated choice:* "agency cannot be divorced from the situation or context" (p. 38). In this study, we illustrated that not only are work perceptions dependent on the situation or context but also are their consequences linked to the context in which choices are made. For Black women, perceived work trajectories had an enduring effect on long-term mortality risk.

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Appendix

Appendix:

Correlation Matrix of Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Died, 2003	1												
2. Years alive	−0.759	1											
3. Perceived work trajectories, 1967-77	−0.096	0.073	1										
4. Black, 1967	0.121	−0.092	−0.147	1									
5. Age, 1967	0.142	−0.111	−0.044	−0.006	1								
6. Education, 1967	−0.118	0.075	0.275	−0.312	−0.070	1							
7. South, 1967	0.055	−0.047	−0.015	0.405	−0.029	−0.245	1						
8. External locus of control, 1969	−0.030	0.016	0.120	−0.160	−0.067	0.200	−0.056	1					
9. Clerical, 1967	−0.057	0.047	0.110	−0.290	−0.067	0.198	−0.163	0.128	1				
10. Sales, 1967	0.016	0.009	−0.030	−0.111	0.015	0.023	−0.068	−0.011	0.159	1			
11. Craft, operative, laborers, farm, 1967	0.046	−0.053	−0.118	0.053	0.013	−0.294	0.056	−0.116	−0.361	−0.126	1		
12. Private household, 1967	0.056	−0.057	−0.102	0.408	0.042	−0.310	0.265	−0.113	−0.209	−0.073	−0.165	1	
13. Service, 1967	0.057	−0.009	−0.059	0.190	−0.004	−0.173	0.051	−0.024	−0.305	−0.106	−0.241	−0.139	1
14. Full-time, 1967	0.034	−0.031	0.031	0.032	0.064	0.018	0.064	−0.005	−0.063	−0.067	0.121	−0.163	0.061

	1	2	3	4	5	6	7	8	9	10	11	12	13
15. Occupational prestige, 1967-77	0.005	−0.013	0.140	0.050	−0.004	−0.023	0.016	−0.011	−0.168	−0.010	0.121	0.100	0.159
16. Unemployed, 1967-77	0.039	−0.021	−0.131	0.091	−0.104	−0.181	0.057	−0.024	−0.087	−0.021	0.180	0.029	0.048
17. Self-rated health, 1967	−0.121	0.088	0.161	−0.176	−0.087	0.312	−0.131	0.162	0.124	0.039	−0.117	−0.187	−0.054
18. Health limitations, 1967	0.094	−0.067	−0.087	0.011	0.080	−0.122	−0.010	−0.050	−0.070	0.018	0.040	0.053	0.053
19. Divorced, 1967	0.079	−0.075	−0.069	0.188	−0.001	−0.127	0.045	−0.058	−0.050	−0.049	0.029	0.043	0.114
20. Widowed, 1967	0.014	−0.004	−0.019	0.089	0.069	−0.032	0.046	−0.062	−0.048	0.016	0.006	0.068	0.011
21. Never married, 1967	0.023	−0.004	0.015	0.044	−0.057	0.074	0.005	−0.005	−0.021	−0.032	−0.012	0.002	0.001
22. Divorced, 1968-2003	−0.024	0.055	−0.045	0.043	−0.155	−0.004	0.013	0.021	−0.020	0.002	−0.015	−0.003	0.049
23. Number of children, 1967	−0.016	0.023	−0.114	0.229	0.006	−0.293	0.133	−0.098	−0.158	−0.009	0.067	0.215	0.088
24. Personal income, 1967	0.007	−0.020	0.131	−0.062	0.080	0.306	−0.085	0.058	0.079	−0.101	−0.031	−0.179	−0.139
25. Household wealth, 1967	−0.073	0.063	0.060	−0.230	0.064	0.205	−0.084	0.097	0.075	−0.101	−0.065	−0.126	−0.078

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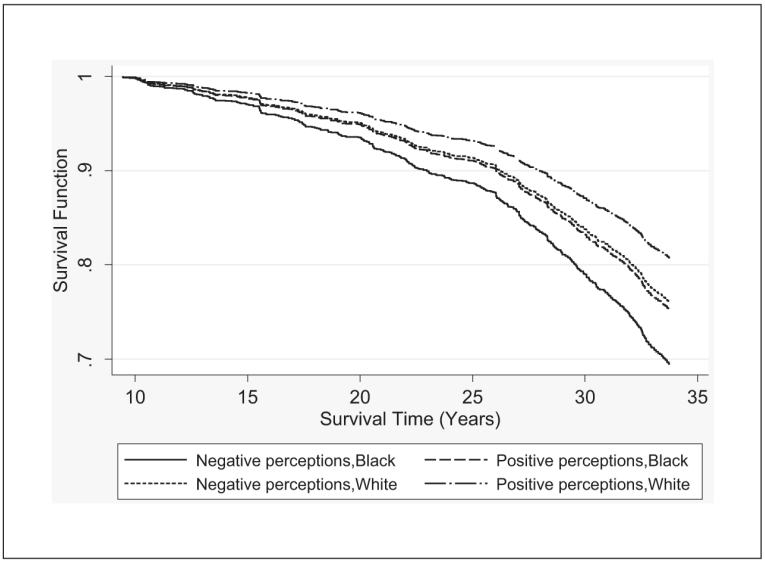

Figure 1.
Survival for Black and White women by perceived work trajectories in the NLSMW, 1967-2003

Table 1

Means and Standard Deviations of Variables by Race in the NLSMW, 1967-2003

Variables	Range	Total	Black	White
Mortality				
Died, 2003	0/1	0.310[a]	0.392	0.274***[b]
Years alive	9.448-36.423	33.059 (5.944)	32.203 (6.515)	33.438*** (5.634)
Work trajectories				
Perceived work trajectories, 1967-77[c]	1-5	3.821 (1.099)	3.587 (1.136)	3.917*** (1.068)
Status characteristics and locus of control				
Black, 1967	0/1	0.293		
Age, 1967	30-44	37.088 (4.318)	37.099 (4.335)	37.083 (4.313)
Education, 1967	2-18	11.437 (2.649)	10.331 (2.966)	11.896*** (2.358)
South, 1967[d]	0/1	0.407	0.696	0.287***
External locus of control, 1969	11-44	31.529 (5.262)	30.281 (5.384)	32.047*** (5.124)
Employment characteristics				
Type of occupation, 1967[e]				
Clerical	0/1	0.307	0.108	0.389***
Sales	0/1	0.057	0.018	0.073***
Craft, operative, laborers, farm	0/1	0.223	0.255	0.210*
Private household	0/1	0.084	0.257	0.013***
Service	0/1	0.171	0.275	0.127***
Full-time, 1967	0/1	0.434	0.465	0.422*
Occupational prestige, 1967-77	−76-77	2.411 (17.603)	3.850 (15.253)	1.821** (18.451)
Unemployed, 1967-77	0-3	0.306 (0.580)	0.392 (0.658)	0.270*** (0.542)
Health characteristics				
Self-rated health, 1967[f]	1-4	3.307 (0.720)	3.134 (0.750)	3.378*** (0.696)
Health limitations, 1967	1-3	1.171 (0.435)	1.175 (0.434)	1.169 (0.435)
Family Life				
Marital status, 1967[g]				
Divorced	0/1	0.121	0.221	0.079***
Widowed	0/1	0.026	0.048	0.017***
Never married	0/1	0.064	0.078	0.058
Divorced, 1968-2003	0/1	0.159	0.185	0.148*
Number of children, 1967	0-18	3.143 (2.324)	3.988 (3.010)	2.792*** (1.863)
Income and wealth				
Personal income, 1967 (US$)[f]	0-15	1.974 (2.270)	1.809 (1.952)	2.044* (2.388)
Household wealth, 1967 (US$)[f]	−46.275-482.500	9.792 (21.901)	2.397 (5.822)	13.383*** (25.628)
N		2,503	734	1,769

[a] Mean (standard deviations in parentheses). All dichotomous variables are scored 0 and 1 (0 = *no or otherwise*). The standard deviation of a dichotomous variable is omitted because it is a function of the mean.

[b] *p* value from χ^2 tests for categorical variables and *t* tests for continuous variables.

[c] Frequency distribution: persistent decline, 5.5%; limited decline, 4.1%; remained the same, 25.8%; limited progress, 32.1%; persistent progress, 32.5%.

[d] Reference group: other regions.

[e] Reference group: professional, technical, and managerial occupations.

[f] Time-dependent covariate.

[g] Reference group: married.

* $p < .05$.

** $p < .01$.

*** $p < .001$ (two-tailed).

Table 2

Ordinal Logistic Regression Models Predicting Perceived Work Trajectories by Race in the NLSMW, 1967-2003

Variables	Total	Black	White
Black, 1967	0.748 **[a] (0.608, 0.921)		
Age, 1967	0.984 (0.966, 1.003)	0.998 (0.964, 1.034)	0.977 * (0.956, 0.999)
Education, 1967	1.119 *** (1.076, 1.164)	1.108 ** (1.036, 1.185)	1.107 *** (1.053, 1.164)
South, 1967[b]	1.402 *** (1.184, 1.661)	1.958 *** (1.388, 2.761)	1.304 ** (1.067, 1.594)
External locus of control, 1969	1.019 * (1.004, 1.034)	1.044 ** (1.016, 1.073)	1.008 (0.991, 1.026)
Type of occupation, 1967[c]			
Clerical	0.959 (0.741, 1.242)	1.048 (0.498, 2.203)	0.967 (0.733, 1.277)
Sales	0.673 (0.453, 1.001)	0.336 ** (0.159, 0.709)	0.580 ** (0.403, 0.834)
Craft, operative, laborers, farm	0.514 *** (0.374, 0.706)	0.336 ** (0.159, 0.709)	0.580 ** (0.408, 0.834)
Private household	0.511 ** (0.334, 0.782)	0.380 * (0.171, 0.845)	0.515 (0.232, 1.145)
Service	0.572 ** (0.410, 0.796)	0.523 (0.250, 1.097)	0.536 ** (0.362, 0.793)
Full-time, 1967	1.052 (0.881, 1.257)	0.733 (0.529, 1.017)	1.188 (0.958, 1.473)
Occupational prestige, 1967-77	1.021 *** (1.017, 1.026)	1.033 *** (1.022, 1.044)	1.020 *** (1.015, 1.025)
Unemployed, 1967-77	0.823 ** (0.718, 0.943)	0.957 (0.760, 1.205)	0.780 ** (0.656, 0.928)
Self-rated health, 1967	1.140 * (1.011, 1.285)	1.012 (0.814, 1.258)	1.220 ** (1.054, 1.411)
Health limitation, 1967	0.949 (0.785, 1.148)	0.663 * (0.464, 0.949)	1.088 (0.868, 1.364)
Marital status, 1967[d]			
Divorced	0.843 (0.657, 1.082)	0.727 (0.499, 1.060)	0.974 (0.686, 1.382)
Widowed	0.947 (0.591, 1.515)	1.122 (0.585, 2.154)	0.815 (0.404, 1.643)
Never married	0.908 (0.645, 1.279)	0.949 (0.542, 1.660)	0.943 (0.604, 1.472)
Divorced, 1968-2003	0.796 * (0.641, 0.989)	0.761 (0.508, 1.140)	0.858 (0.662, 1.114)
Number of children, 1967	1.023 (0.986, 1.060)	0.966 (0.917, 1.018)	1.091 ** (1.034, 1.151)
Personal income, 1967 (US$)	1.046 * (1.002, 1.092)	1.125 * (1.009, 1.254)	1.035 (0.986, 1.086)
Household wealth, 1967 (US$)	0.998 (0.995, 1.002)	0.997 (0.982, 1.012)	0.999 (0.995, 1.002)
χ^2	351.46	176.55	183.92
df	22	21	21
N	2,328	678	1,650

[a] Odds ratio and confidence interval in parentheses.

[b] Reference group: other regions.

[c] Reference group: professional, technical, and managerial occupations.

[d] Reference group: married.

* $p < .05$.

** $p < .01$.

*** $p < .001$ (two-tailed).

Table 3

Cox Proportional Hazards Models for Mortality by Race in the NLSMW, 1967-2003

	Model 1		Model 2		Model 3	
Variables	**Black**	**White**	**Black**	**White**	**Black**	**White**
Status characteristics and locus of control						
Age, 1967	1.085 ***[a] (1.051, 1.120)	1.055 ***[b] (1.030, 1.082)	1.085 *** (1.052, 1.120)	1.054 *** (1.029, 1.081)	1.074 *** (1.039, 1.109)	1.026 * (1.000, 1.053)
Education, 1967	1.004 (0.949, 1.062)	0.952 (0.902, 1.005)	1.016 (0.960, 1.075)	0.956 (0.905, 1.009)	1.016 (0.958, 1.077)	0.990 (0.937, 1.047)
South, 1967[c]	0.809 (0.603, 1.087)	1.129 (0.902, 1.413)	0.858 (0.635, 1.160)	1.137 (0.908, 1.425)	0.820 (0.606, 1.109)	1.094 (0.871, 1.375)
External locus of control, 1969	0.999 (0.974, 1.024)	1.007 (0.987, 1.028)	1.002 (0.977, 1.027)	1.008 (0.987, 1.028)	1.010 (0.985, 1.035)	1.016 (0.996, 1.036)
Employment characteristics						
Type of occupation, 1967[d]						
Clerical	1.516 (0.785, 2.925)	1.275 (0.903, 1.799)	1.494 (0.774, 2.886)	1.273 (0.902, 1.796)	1.298 (0.668, 2.523)	1.217 (0.861, 1.721)
Sales	0.603 (0.136, 2.677)	1.802 * (1.128, 2.878)	0.661 (0.148, 2.941)	1.764 * (1.102, 2.824)	0.488 (0.108, 2.208)	1.716 * (1.066, 2.761)
Craft, operative, laborers, farm	1.516 (0.778, 2.954)	1.418 (0.929, 2.164)	1.377 (0.703, 2.698)	1.401 (0.918, 2.140)	1.377 (0.698, 2.717)	1.299 (0.848, 1.990)
Private household	1.415 (0.704, 2.844)	1.209 (0.417, 3.504)	1.288 (0.637, 2.602)	1.194 (0.412, 3.460)	1.132 (0.554, 2.312)	1.143 (0.391, 3.340)
Service	1.318 (0.688, 2.524)	1.677 * (1.080, 2.603)	1.227 (0.639, 2.358)	1.652 * (1.063, 2.567)	1.183 (0.608, 2.303)	1.555 (0.996, 2.428)
Full-time, 1967	0.950 (0.720, 1.252)	1.159 (0.941, 1.428)	0.939 (0.713, 1.237)	1.164 (0.944, 1.434)	0.914 (0.691, 1.208)	1.078 (0.865, 1.342)
Occupational prestige, 1967-77	1.000 (0.991, 1.010)	0.997 (0.991, 1.003)	1.003 (0.993, 1.013)	0.998 (0.992, 1.004)	1.004 (0.994, 1.013)	0.997 (0.991, 1.003)
Unemployed, 1967-77	0.972 (0.789, 1.199)	1.159 (0.966, 1.390)	0.966 (0.783, 1.191)	1.151 (0.959, 1.381)	1.014 (0.821, 1.252)	1.224 * (1.020, 1.469)
Work trajectories						
Perceived work trajectories, 1967-77			0.860 * (0.763, 0.969)	0.954 (0.866, 1.051)	0.869 * (0.767, 0.983)	0.997 (0.906, 1.098)
Health characteristics						
Self-rated health[e]					1.037 (0.892, 1.205)	0.861 * (0.763, 0.972)
Health limitation, 1967					1.109 (0.833, 1.476)	1.223 (0.991, 1.508)
Family life						
Marital status, 1967[f]						

	Model 1		Model 2		Model 3	
Variables	**Black**	**White**	**Black**	**White**	**Black**	**White**
Divorced					1.253 (0.890, 1.762)	1.502 * (1.083, 2.082)
Widowed					1.526 (0.823, 2.829)	1.098 (0.514, 2.345)
Never married					1.288 (0.782, 2.121)	1.170 (0.728, 1.879)
Divorced, 1968-2003					1.034 (0.711, 1.504)	0.882 (0.644, 1.207)
Number of children, 1967					0.972 (0.927, 1.020)	0.910 ** (0.855, 0.968)
Income and wealth						
Personal income (S)[e]					0.939 *** (0.923, 0.955)	0.967 *** (0.955, 0.979)
Household wealth (S)[e]					1.001 ** (1.000, 1.002)	0.999 *** (0.999, 1.000)
χ^2	33.18	50.72	39.12	51.62	95.54	164.65
df	12	12	13	13	22	22
N	646	1,535	646	1,535	646	1,535

[a] Hazard ratio and confidence interval in parentheses.

[b] Chow test indicates coefficients are significantly different for Black and White respondents ($p < .05$).

[c] Reference group: other regions.

[d] Reference group: professional, technical, and managerial occupations.

[e] Time-dependent covariate.

[f] Reference group: married.

* $p < .05$.

** $p < .01$.

*** $p < .001$ (two-tailed).