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Race Inequities in Men's Retirement

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A multistate life table model is used to identify how labor force experiences and mortality determine the labor force participation rates (LFPRs) and the qualities of the retirement life cycle of Black and White older men. LFPRs and the life cycle measures are compared to assess inequities of retirement access for the racial groups. The results show that Blacks' lower LFPRs are a function of disability. Despite lower LFPRs than Whites, however, Blacks spend a greater portion of their lives both working and disabled, reducing the retirement period. Race differences in the retirement life cycle also are highly sensitive to mortality. Reducing Black mortality to that of Whites would substantially narrow the life cycle differences. The combination of higher disability and mortality rates among Blacks suggests that health is a key determinant of retirement inequity.

MUCH of what is currently known about differences in the work-to-retirement transition is based on labor force participation rates (LFPRs). Older Black men are less likely to participate in the labor force than similarly aged White men (e.g., Parsons, 1980), and among persons out of the labor force, Blacks are more likely to report that they are disabled compared to Whites (Bound, Schoenbaum, and Waidmann, in press; Siegel, 1993). A variety of explanations have been offered to account for these differences. Older Blacks' LFPRs have been attributed, for example, to Social Security disability benefits relative to wage levels (e.g., Parsons, 1980), permanent labor force withdrawal at younger ages carried forward to retirement ages (Welch, 1990), declining job-market opportunities for Blacks (Wilson, 1987), and the economic and psychological benefits among older Blacks of adopting the disabled worker role (Gibson, 1991). In addition, the health of Black middle-aged men is generally worse than the health of White men (Bound et al., in press; Gibson, 1994; Manton, Patrick, and Johnson, 1987). Black men, for example, are more likely to report having difficulties performing various physical activities (Bound et al., in press), and declines in functional abilities are more rapid for Blacks compared to Whites between the ages of 45 and 64 (Gibson, 1994).

Each of these explanations of the race gap in labor force participation hinges on some particular type of labor force behavior. Parson's and Gibson's explanations, although somewhat different theoretically, both suggest that the race gap in labor force participation is due to differences in leaving the labor force because of disability. The confluence of health data also supports this view. And, while Parson's and Gibson's work does not explicitly focus on race differences in the duration of disability, the health data suggest that Blacks suffer from longer spells of disability than Whites, leading to a greater proportion of Blacks being disabled. Welch (1990) suggests that the race gap in older men's labor force participation is less a consequence of behavior at older ages compared to younger ages. Specifically, Welch posits a selection process where younger Black men are more likely to remove themselves permanently from the labor force compared to White men, and this gap in labor force participation moves forward with age. Wilson's argument implies that older Blacks may be more likely to exit the labor force due to the lack of job opportunities and less likely to return should they leave. Whether Blacks are more likely to adopt the disabled status, according to Wilson, is not clear.

While it is impossible to adjudicate fully between these alternative theoretical perspectives, this study provides evidence showing which race differences in labor force behavior determine the race gap in labor force participation. In this manner, we provide some insights into the consistency between the various theoretical perspectives and the behavioral record. A working life table model of labor force participation is developed, showing how the retirement life cycle experiences of Black and White men govern differences in the labor force participation and work disability rates. This model allows us to juxtapose and evaluate a variety of experiences for Blacks and Whites as men approach and enter the retirement years. Do Blacks and Whites differ in their propensity to exit the labor force for non-health reasons? Are Blacks disadvantaged relative to Whites in terms of their ability to return to the labor force? To what extent do race differences in LFPRs depend on differences in the onset and duration of work disability? Are younger Blacks' lower labor supply levels carried forward into the retirement years? What role might differential mortality selection play? These questions signify the types of retirement life cycle experiences potentially accounting for race differences in LFPRs. Moreover, they allow us to examine how qualities of the retirement life cycle itself (e.g., the number of years persons can expect to spend working, retired, or disabled; the expected number of lifetime retirement and disability events; and chances of post-retirement labor force participation) align with the LFPRs of Blacks and Whites.

The qualities of the retirement life cycle provide an alternative and potentially very different benchmark of race inequity (Clogg, 1979). As noted above, labor force participation rates are the standard means to gauge inequity. Equity

would be achieved by equalizing the current labor force attachment of Black and White men — that is, equalizing the proportions of Black and White men in the labor force. Achieving equity in terms of the retirement life cycle implies closing the gap in the experiences of Blacks and Whites over some period of their lives. For example, equity might imply similar years of work, disability, and retirement for Blacks and Whites. Given race differences in mortality, it also might imply similar proportions of life spent in these labor force statuses. As we will show in this analysis, the inequities implied by the race gap in labor force participation are very different from those implied by measures of the retirement life cycle of Black and White men.

Although race differences in the work-to-retirement transition have clear implications for the quality of life of retirement-aged persons, their demand for social services, and the consumption of public pension benefits, current evidence on the retirement life cycle of Blacks and Whites is surprisingly sparse beyond that provided by the general age profiles of labor force participation rates. Smith (1986) provides some preliminary evidence on race differences in the retirement process using data from the 1979 Current Population Survey (CPS). She calculated, for example, that White men aged 55 had a two-year advantage over same-aged Black men in working life expectancy (8 vs 6 years) and their LFPR exceeded that of Blacks by 7.5 percent (82.7 vs 75.1%). White men of this age also exhibited lower rates of movement into and out of the labor force. By age 60, Smith's estimates showed a narrowing of the race gap in working life expectancy (4.5 years for Whites vs 3.3 years for Blacks), although the gap in LFPRs grew (64% for Whites and 50% for Blacks). The race differences in exiting and entry rates also held.

This study extends Smith's foray into this topic in several ways. First, we take advantage of data from a prospective cohort study, the National Longitudinal Survey of Older Men, rather than relying on synthetic cohort data. This allows us to identify how a cohort's mobility experiences determine both the structure of labor force attachment and the qualities of the retirement life cycle. Second, we differentiate nonparticipation in the labor force according to disability to show how self-reported, health-motivated labor force exits as compared to nonhealth-related exits contribute to labor force attachment and the retirement life cycle. Third, we use a multivariate hazard modeling approach to derive race-specific schedules of transition rates — the input to calculate the working life tables for Blacks and Whites. Analytically, this approach allows us to test whether race has a statistically significant effect on specific types of labor force exit and entry experiences. Finally, we use the life table results to show how race differences in the transition rates determine the gap in labor force participation rates as well as differences in the qualities of the overall retirement life cycle for the two race groups. We then compare the inequities of retirement access implied by the labor force participation rates and measures of the retirement life cycle.

Life Table Model and Hypotheses

The life table model considered in this study classifies people according to whether they are in or out of the labor force (see Figure 1). Persons' labor force status is identified using standard CPS criteria, providing the means to link our results with prior studies of race differences in labor force attachment and behavior, as well as with national statistics on the labor force. Persons reporting that they are employed or looking for work in the survey week are classified as being "in the labor force." Persons not currently working and not looking for work are classified as being "out of the labor force." This information can be used to define the standard labor force participation rate. Persons out of the labor force are classified further into nondisabled and disabled groups. Disability is based on respondents' reports that they are *unable* to work for health reasons. For lack of a better term, nondisabled persons out of the labor force are labeled as retired.

Admittedly these states are loosely defined and contain heterogeneous populations. The "retired" population, for example, contains discouraged workers, involuntary retirees, and retirees in the classic sense. Disability is based on self-report, and a relatively large literature has grown up around the validity of self-report data. Some researchers have argued that disability is a socially desirable status adopted by persons forced to leave the labor force involuntarily for non-health related reasons such as plant closure (Harris and Associates, 1977). Others have noted, however, that the work disability status is a significant mortality predictor (Chirikos and Nestel, 1985; Moore and Hayward, 1990), and it is highly correlated with the ADL and IADL functional limitations scales (Bound et al., in press; Gibson, 1991). Recently, research by Bound and his colleagues (in press) suggests that the health problems of disabled workers are real, rather than an excuse by healthy workers to cover up for the lack of labor market opportunities. This does not negate the importance of economic incentives influencing work disability (Parsons, 1980); if disability benefits were eliminated, it is likely that a significant portion of disabled workers would return to work. Importantly for the aims of this study, the work by Bound and his colleagues shows that a significant part of the race gap in labor force attachment reflects differences in health status and functional ability of middle-aged Black and White men.

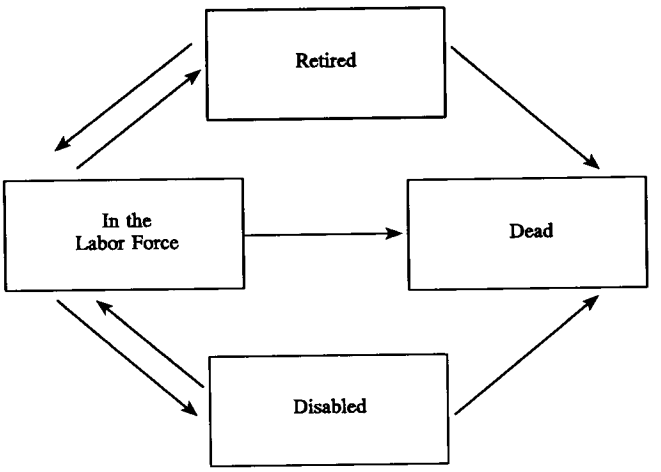

Figure 1. Life table model of labor force participation.

According to the life table model shown in Figure 1, persons are observed as they move both out of and into the labor force. Transitions between retirement and disability are not permitted in this analysis, since very few transitions of this type actually are observed in the data. This lack of movement between disability and retirement also is supported by Gibson's (1991) work, suggesting that once persons take on the disabled status (or identity), the status is rarely "exchanged," and vice versa. In addition, persons leaving the labor force at ages 65 and older are classified in this study as nondisabled, since there are no programmatic advantages for claiming disability. Again, virtually no respondents reported leaving the labor force due to disability at ages 65 and older (despite the likelihood of growing health problems).

What types of race effects should we anticipate using this model? As noted previously, there is considerable agreement that Blacks are more likely than Whites to exit the labor force because of work disability. Despite this agreement, a variety of explanations have been offered. These include the economic incentives provided by disability programs (Parsons, 1980), the abrogation of economic opportunities due to discontinuous careers (Gibson, 1991), the psychological benefits of the disabled worker identity (Gibson, 1991), the overrepresentation of health and functioning problems among Blacks (Bound et al., in press), and the concentration of Blacks in physically demanding jobs (e.g., Farley, 1984). Although there is a tendency in the literature to view these explanations as mutually exclusive and orthogonal, a more accurate view is that health and functioning are bound up with the differential economic opportunities and job characteristics of Black and White men. Black middle-aged men, for example, suffer disproportionately from health problems associated with being on the bottom rung of the social class ladder. Examples of these health problems are hypertension, diabetes, and stroke, and higher rates of alcoholism and obesity (Bound et al., in press; Manton, Patrick, and Johnson, 1987). Black middle-aged men also suffer disproportionately from muscular-skeletal problems (e.g., Chirikos and Nestel, 1985), suggesting an effect of overrepresentation in physically demanding occupations. Given these relationships, it is not surprising that economic incentives and health status have occupied researchers' attention as explanations of the race gap in older men's labor force participation.

Once middle-aged Black and White men become disabled, what should we expect in terms of labor force reentry and mortality? Presuming that the disability status of Blacks reflects more the absence of employment opportunities than the presence of health problems (e.g., Parsons, 1980), one might expect disabled Blacks to have *lower* mortality rates than disabled Whites. Conversely, if health and functioning problems are the driving force behind work disability, there is likely to be little if any race difference in mortality among those who are currently disabled. The line of reasoning with respect to labor force reentry from work disability is more ambiguous. At the risk of overinterpreting Parsons' theoretical model, if the reporting of work disability does not reflect health problems or health problems are only temporary (i.e., not chronic), workers may have difficulty qualifying for disability benefits and be forced to return to the labor force. This would be reflected in higher rates of return to the labor force among disabled Blacks, producing more frequent but shorter spells of disability among Blacks compared to Whites. Gibson's (1991) work suggests the opposite, since she sees the adoption of the disability status (or more accurately, the disability identity) as relatively permanent among Blacks. A third possibility is that if it is indeed poor health prompting Blacks to become disabled at a higher rate than Whites, once persons are disabled, there should be little race difference in returning to the labor force.

Transitions into and out of the "retired" status also may vary by race, although the literature is vague about the direction of the effect. To the extent that this status encompasses discouraged workers and involuntary retirees, for example, Black men are expected to have higher rates of retirement due to poorer economic prospects and their concentration in jobs located in industries vulnerable to economic downturns (e.g., Wilson, 1987). Offsetting this view is the fact that Black men in the labor force are less likely to work in jobs offering private pension coverage and high wages (e.g., Korczyk, 1993). Inadequate retirement income may force large numbers of older Black men to work longer (and in lower status jobs) than White men (Gibson, 1987). For example, data from the New Beneficiary Survey show that Blacks aged 70–79 are much more dependent on earnings as a source of income compared to Whites (29.6% of Blacks and 16.7% of Whites). In addition, presuming that older retired Blacks are viewed by employers as "employees of last resort," labor force reentry is likely to be more common among "retired" Whites than among Blacks.

Mortality may affect the labor force participation rates of Blacks and Whites through differential survivorship according to labor force status. The general body of evidence points to higher mortality risks among Blacks — at least below age 75 — due to race differences in health status (e.g., Manton, Patrick, and Johnson, 1987). Whether this holds across labor force statuses, however, is not clear. If the race difference in mortality is substantially greater among labor force incumbents compared to nonincumbents, race differences in labor force participation rates will be accentuated. Conversely, if the race difference in mortality is greater among nonincumbents, the gap in labor force participation rates will narrow over time. Although research on this issue is sparse, a prior study estimating multivariate models of mortality by labor force status found no significant race effects (Hayward and Grady, 1990). Thus, while we expect race differences in mortality, we do not expect these differences to vary by labor force status.

An alternative explanation for race differences in LFPRs may have little to do with race differences in labor force behavior at older ages. Welch (1990) suggests, for example, that much of the gap at older ages is a reflection of Blacks' long-term labor supply decisions. That is, many older Blacks are out of the labor force due to a choice made at younger ages based on the absence of labor market alternatives. Younger Black men, recognizing the lack of economic opportunity, may select themselves out of the labor market and this status becomes relatively permanent for the remainder of the life cycle. This is similar to Robinson's (1988) demographic argument that much of the race difference in

older men's LFPRs can be attributed to lower levels of labor force participation at younger ages, carried forward into the retirement years (see also Rogers, 1992). To the extent that this explanation accounts for the race gap in older men's labor force participation, theoretical models rooted in behavioral differences of Blacks and Whites at older ages (e.g., Parsons, 1980) are moot.

Data

This study is a cohort-based prospective analysis of mid- and late-career labor force behavior using the National Longitudinal Survey of Older Men (NLS). The NLS is a nationally representative sample of men aged 45–59 in 1966 (N = 5,020) followed for a 17-year period ending in 1983. Labor force histories were developed arraying respondents' age-dependent labor force statuses beginning at baseline and ending at the time at which the respondent left observation. Values are adjusted to reflect respondents' status at exact age x. We assume that only one event occurs within any given one-year age interval. All events, including censoring, are assumed to occur in the middle of an interval, and exposure is adjusted accordingly to calculate central (hazard) rates. The histories are used to create a file of "exposure intervals." The number of person-years of exposure and events for each transition are shown at the bottom of Table 1.

METHOD

Race-specific multistate working life tables of the type shown in Figure 1 are estimated showing the relationship between prevalence rates (i.e., LFPRs) and incidence (or transition) rates for a life table population. In this way, we identify for both race groups the stable (stationary) population state composition (i.e., the LFPRs) and the retirement life cycle (e.g., working life expectancy) implied and that would be replicated by the life table transition (incidence) rates. A more formal treatment of the connection between the prevalence rates of labor force activity and individuals' retirement life cycle experiences can be found in a recent article by Hayward, Crimmins, and Wray (1994).

A series of simulations are used to examine changes in the implied LFPRs and retirement life cycle measures for a given race group that are produced by substituting incidence rates from the other race group. Specifically, we evaluate how the LFPRs and measures of the retirement life cycle for Blacks are altered when we change single "components" of the life table engine (e.g., replacing the disability or mortality rates for Blacks with those for Whites). The simulation begins with the question of whether the effects of race differences in labor force participation at younger ages are carried forward into the retirement years. This question is assessed by changing the radix allocation for Blacks (i.e., how persons are distributed across the labor force states at the "onset" of the process — in this analysis, age 45) to that for Whites. Race differences in the radix allocation reflect differences in the behavioral rates at younger ages stamped on population composition at older ages (Rogers, 1992; Schoen, 1988). This initial simulation is followed by substituting the transition forces for Blacks with those for Whites in the following (arbitrary) order: mortality rates, exiting rates to disability and retirement, and reentry rates from disability and retirement. The implications of each change are evaluated for the race gap in labor force attachment and retirement life cycle experiences. In this fashion, we identify the specific types of behavior responsible for race inequities in both labor force attachment and the retirement life cycle.

Multivariate hazard models are used to derive schedules of age-specific transition rates for the two race groups; the rates are the input used to calculate the multistate life tables. A total of seven models was estimated — one model for each transition shown in Figure 1 (see Hayward and Grady, 1990, for a description of this approach). We assumed that each

Table 1. Hazard Model Parameter Estimates of Labor Force Status Transitions Among Men Aged 45–75 (Standard Errors in Parentheses)

Variable	ILF-RET	ILF-DIS	ILF-MT	RET-ILF	RET-MT	DIS-ILF	DIS-MT
Constant	197.86	260.80	−23.11	−1.79	9.41	3.31	−2.71
	(13.06)	(75.32)	(4.17)	(2.30)	(4.63)	(.881)	(.070)
Age	−10.77	−14.89	.577	.156	−.431	−.112	
	(.663)	(4.12)	(.141)	(.078)	(.146)	(.015)	
Age**2	.188	.276	−.004	−.003	.004		
	(.011)	(.075)	(.001)	(.0007)	(.001)		
Age**3	−.001	−.002					
	(.00006)	(.0005)					
Race (1 = Black)	.086	.400*	.373*	.025	.438*	−.157	−.085
	(.060)	(.148)	(.137)	(.093)	(.148)	(.270)	(.185)
Log-likelihood	−13,682.6	−2,756.8	−3,290.4	−5,277.5	−2,314.5	−598.6	−1,051.0
N events	3,660	501	565	1,503	482	142	273
Exposure	42,486	39,185	42,486	14,180	14,180	4,340	4,340

Notes. All age effects shown are statistically significant. The starred (*) race effects denote statistical significance at the .05 level. Exposure is lower for the transition from in the labor force to disability due to the fact that respondents are not at risk of disability at ages 65 years and older. ILF = in the labor force; RET = retired; DIS = disabled; and MT = dead.

process depended only on age and race, providing a common prediction model across types of events. As discussed later in this article, this was useful to identify those specific transitions significantly affected by race. Although prior research has identified period effects for the mortality experiences of this NLS cohort, no attempt was made to adjust for these effects in the hazard models since temporal shifts in the process are not the focus of this study, and the shifts were experienced similarly by both Blacks and Whites.

We compared alternative parametric forms of the baseline hazard functions (including a "nonparametric" piece-wise exponential form) to identify nonlinearities in the age effects. This led to the specification of polynomial functional forms for five of the seven transitions; the age effect was linear for the transition from disability to the labor force, and no statistically significant age effect was detected for the transition from disability to death. Age rather than duration in the state defines the time axis in the hazard models, providing a common time dimension to integrate the transition rates in the multistate life table model. Race was included as an explanatory variable in the hazard models to identify its effect on each event. Interactions were included to test whether the race effects varied by age (i.e., we tested for nonproportionality); no interaction effects were statistically significant. The hazard model parameter estimates were then used to calculate predicted age-specific rates for each transition for the two race groups.

Two sets of transition schedules were calculated. In the first set, for those transitions where race had no significant effect, transition schedules were based only on a model containing the baseline hazard function (race was deleted from the model); thus, Blacks and Whites were assumed to share common transition rates. The other set was calculated using the race coefficients from all of the models. This was done to assess what portion of the race difference in LFPRs might reflect "noise" as compared to significant differences in behavior. Somewhat surprisingly, the two sets of transition rates yielded almost identical results (see Table 2). The analyses reported below are based on the transition schedules incorporating race effects from all models to approximate more closely race differences in LFPRs in the actual population.

The transition schedules are used as input to calculate the working multistate life tables for Black and White men. We focus on two summary measures from these life tables to characterize the retirement life cycle. The first summarizes the mobility experiences of the life table cohorts in terms of the expected number of retirement and disability events, the number of retirement and disability events reversed by reentering the labor force, and the relative probabilities of dying in each of the labor force states. Race comparisons using this type of measure are used to document possible disparities in the achievement of retirement, the lifetime chances of disability, and the relative ability of Blacks and Whites to reverse disability and retirement exits.

The second summary measure of the retirement life cycle is a population-based expectation of life in each of the labor force states. State life expectancies are calculated to identify the number of years a person of a particular age can expect to spend in the labor force, retired, and disabled. Since the sum of the state life expectancies equals the total life expectancy, we can evaluate what proportion of an individual's remaining life is spent in one or the other of the labor force states. For example, for a person aged 60, what proportion of his remaining life can he expect to spend in retirement, and how does this vary by race? Race inequities in the retirement life cycle thus can be assessed, adjusting for differences in the overall length of life.

Table 2. Point Estimates of Observed and Implied LFPRs, Whites and Blacks, Males 45–75 Years
(Estimates for even age intervals elided from table)

	Observed		Implied[a]		Implied[b]		Difference (B/W RACE)	
Age	Whites	Blacks	Whites	Blacks	Whites	Blacks	Observed	Implied[c]
45	.883	.943	.935	.864	.935	.862	−.060	.073
47	.946	.902	.931	.881	.931	.875	.044	.056
49	.949	.903	.936	.897	.936	.890	.046	.046
51	.935	.889	.935	.901	.935	.894	.046	.041
53	.925	.873	.924	.893	.924	.885	.052	.039
55	.904	.865	.901	.869	.901	.861	.039	.040
57	.873	.801	.857	.824	.857	.813	.072	.045
59	.836	.765	.785	.749	.785	.734	.071	.051
61	.734	.680	.676	.640	.676	.621	.054	.055
63	.563	.516	.534	.504	.534	.479	.047	.054
65	.401	.345	.384	.364	.384	.337	.056	.047
67	.285	.241	.260	.249	.260	.224	.044	.036
69	.235	.218	.180	.174	.180	.154	.017	.026
71	.214	.182	.142	.139	.142	.122	.032	.020
73	.182	.168	.133	.133	.133	.117	.014	.016
75	.154	.114	.098	.102	.098	.138	.040	−.040

[a]Blacks and Whites were assumed to share a common transition schedule when race had no statistically significant effect.
[b]Model schedules were calculated using race coefficients from hazard rate models of all seven transitions.
[c]Based on the implied rates described in note b.

RESULTS

To what extent does race influence specific transitions out of and into the labor force? The hazard results reported in Table 1 show for most transitions that race is not a statistically significant determinant of older men's labor force behavior. The exception is the race effect for disability; as expected, Blacks have a significantly greater chance of becoming disabled. However, Blacks are no more or less likely to retire, or to return to the labor force from disability or retirement. Blacks have elevated mortality risks among both labor force incumbents and retirees, and the race effect is relatively similar across these two labor force status groups. Blacks' life chances, however, are *not* lower than Whites once disabled. Once health has declined to a level precluding working, race no longer carries any advantages or disadvantages for future life chances.

These results narrow the range of possible explanations for race differences in older men's labor force participation rates. The foremost explanation appears to be race differences in disability, although the effects of the radix distribution have yet to be accounted for. That is, Blacks are much less likely than Whites to enter their retirement years as labor force participants. Among Blacks aged 45–49 in 1970, for example, only 86.4 percent were in the labor force, 12.2 percent were disabled, and 1.4 percent were "retired"; these figures were estimated from the 1970 March CPS. Among same-aged Whites, 94.2 percent were in the labor force, 4.7 percent were disabled, and one percent was retired. These race differences could very well be carried forward into the retirement years. It is also noteworthy that these population composition effects appear to be disability effects from earlier ages (i.e., prior to age 45) carried forward to middle-aged men.

The observed and life table generated LFPRs for the race groups are shown in Table 2. As expected, Blacks have lower LFPRs, although the race difference declines with age for both the observed and implied rates. Note that the observed rates are calculated directly from the NLS data, and the estimates for the youngest and oldest age groups are based on comparatively fewer cases than in the middle of the age series due to the panel nature of the data. The implied rates are those calculated using the multistate working life table where the transition schedules were obtained from the hazard model estimates. Differences between observed and implied rates within each race group suggest that the life table-generated prevalence estimates are reasonably good approximations of the observed rates. For Whites, there seems to be some underestimation of the sample estimated LFPRs around age 60 and also at the very oldest ages, 68 years and older. For Blacks, the fit of the implied rates seems even better, with the largest discrepancy occurring at the oldest ages.

Comparing the NLS estimates with the cohort-specific rates calculated by Robinson (1988), the estimates shown here for Whites are quite close to the CPS-based LFPRs. For Blacks, however, the NLS estimates are consistently higher than the CPS-based LFPRs. We suspect that this discrepancy is due principally to higher sample attrition among Blacks out of the labor force. The implication for this analysis is that all race differences in LFPRs (and probably retirement life cycle experiences as well) are conservative.

Although the magnitude of the race difference in LFPRs is not especially overwhelming (the differences, however, are statistically significant), there are substantially greater differences in how the race groups are distributed across the disability and retirement statuses. Table 3 shows this difference based on the life table prevalence measures (the implied rates). Among nonincumbents, the proportion of Blacks who are disabled is greater at all ages. The gap ranges from 15 percent at the youngest ages to 6 percent at the oldest ages. This connotes substantial differences in the meaning attached to nonparticipation across the race groups. White retirees become a majority of nonparticipants between ages 55–56, while Black retirees are not a majority until ages 58–59.

Table 3. Life Table Nonparticipation Rates for White and Black Men Aged 45–75 Years

	Whites				Blacks			
Age	Retired	Disabled	Total	% Disabled	Retired	Disabled	Total	% Disabled
45	.018	.047	.065	72.57	.021	.117	.138	85.12
47	.025	.045	.069	64.63	.025	.100	.125	79.89
49	.022	.042	.064	65.37	.023	.087	.110	79.27
51	.024	.041	.065	63.08	.025	.081	.106	76.40
53	.032	.044	.076	58.04	.033	.081	.115	71.08
55	.048	.051	.099	51.15	.051	.089	.139	63.75
57	.081	.062	.143	43.18	.084	.103	.187	55.01
59	.140	.075	.215	34.74	.145	.121	.266	45.50
61	.238	.086	.324	26.53	.243	.137	.379	35.99
63	.375	.091	.466	19.48	.377	.143	.521	27.54
65	.529	.087	.616	14.15	.524	.139	.663	20.98
67	.662	.079	.740	10.61	.648	.128	.776	16.54
69	.749	.072	.820	8.73	.726	.120	.846	14.20
71	.792	.066	.858	7.71	.764	.114	.878	13.03
73	.805	.062	.867	7.15	.772	.111	.883	12.56
75	.842	.060	.902	6.62	.756	.106	.862	12.25

Note. Estimates for even age intervals elided from table.

How do the various life table components influence the race difference in LFPRs? As suspected, the initial radix distribution contributes to this difference (simulation a in Table 4). By substituting in the White radix distribution, Black LFPRs are boosted toward those of Whites, especially at the younger ages. Given the entropy effects, the consequences of the radix diminish at the older ages such that by the late 50s, there is very little effect. Introducing White mortality experiences (simulation b) has only a minuscule effect on Black LFPRs. This reflects the similar race effect across labor states shown in Table 1. Finally, if Blacks experienced the same disability rates as Whites (simulation c), the initial disadvantages of Blacks would have been overcome by age 61 where the LFPRs for the two race groups become almost identical. The overall conclusion from these simulations is that race differences in disability exits from the labor force are the key factor accounting for race differences in LFPRs at the older ages. Much of the race difference during years leading up to retirement also is a residue of Blacks' health disadvantages incurred at younger ages carried forward.

Race differences in attachment are thus due to two factors: higher disability rates at older ages among Blacks and higher disability rates at younger ages carried forward. What do these factors portend for Blacks' and Whites' retirement life cycle experiences? Further, although mortality differences have little effect on LFPRs, what consequences might they have for the retirement life cycle? Preston (1987) notes, for example, that while mortality rarely influences prevalence rates in the population, it may have profound effects for the individual life cycle.

Table 4. Simulated Changes in LFPRs for a Stationary Population, Single Component Change
(Estimates for even age intervals elided from table)

	Implied		Simulations			
Age	Whites	Blacks	A	B	C	D
45	.935	.862	.931	.862	.866	.863
47	.931	.875	.919	.874	.887	.877
49	.936	.890	.921	.888	.906	.892
51	.935	.894	.917	.892	.913	.896
53	.924	.885	.903	.884	.907	.889
55	.901	.861	.874	.859	.886	.865
57	.857	.813	.823	.811	.842	.820
59	.785	.734	.742	.732	.767	.746
61	.676	.621	.627	.619	.654	.638
63	.534	.479	.483	.477	.508	.503
65	.384	.337	.339	.335	.356	.363
67	.260	.224	.226	.222	.235	.249
69	.180	.154	.155	.152	.160	.174
71	.142	.122	.123	.119	.127	.139
73	.133	.117	.117	.113	.121	.133
75	.098	.138	.139	.135	.140	.105

A: Black labor force and mortality rates; White radix allocation.

B: Black labor force rates and radix; White mortality rates.

C: Black retirement, entry and exit rates, mortality rates, and radix: White disability entry and exit rates.

D: Black disability, entry and exit rates, mortality rates, and radix: White retirement entry and exit rates.

Two types of estimates are shown in Table 5 describing Blacks' and Whites' retirement life cycle experiences, working life expectancy, and the volume of transitions. Smith's (1986) working life expectancy estimates based on CPS data are included for comparison purposes. One thing immediately apparent is that the NLS estimates of life expectancy are substantially lower for Blacks and slightly lower for Whites than those reported by Smith. In part, sampling variability in the NLS probably contributes to these differences. These lower estimates also reflect the fact that labor force status-specific mortality schedules for Blacks and Whites were available for this analysis. Smith was forced to assume, due to data limitations, that mortality was the same across labor force statuses.

The NLS-based estimates show that Blacks aged 45 can expect to work almost two years less than same-aged Whites. They also can expect to spend over 2.5 fewer years retired and almost one year more disabled. By age 55, the gap in working life expectancy narrows to about one year due to closer proximity to retirement, although there is little narrowing of the nonworking life expectancy estimates. Comparing these estimates in terms of total life expectancy for the two race groups provides a means to standardize these estimates (see Table 6). In this context, middle-aged Blacks actually can expect to work a *greater* portion of their lives than Whites, while continuing to spend greater portions of time disabled. Blacks spend less time retired both absolutely and relatively. The standardized estimates suggest that if work and disability are juxtaposed with retirement, Blacks are decidedly less advantaged in maximizing "leisure" late in life.

The estimates of the expected number of lifetime events shown in Table 5 also confirm the extent of older Blacks' disadvantages. Multiple retirements are fairly common among Whites (note the volume of $d_{ir} = 1.06$ is quite high considering the frequency of competing events). Black retirement is much less common. Only 66 percent of Blacks' total exits $[d_{ir}/(d_{ir} + d_{id} + d_{im}) = .9/(.9 + .19 + .28)]$ are retirements compared to 73 percent among Whites. In terms of relative frequency, the expected volume of disability among Blacks aged 45 also is higher than that for Whites. Fourteen percent of Blacks' total exits are disabilities compared to 10 percent among Whites. Blacks are slightly more likely to die in the labor force.

Although race does not affect the risk of reentry, retirement reversals in terms of absolute volume are somewhat more common among Whites than Blacks due to differential exposure. Approximately 43 percent of both Black and White retirements, however, are reversed by reentry. With regard to persons exiting disability, 58 percent of all disability events are eventually reversed by reentry to the labor force among Blacks ($d_{di}/d_{id} = .11/.19$); the figure is somewhat lower among Whites, 50 percent (.07/.14). Disability is far from a permanent status for both race groups. This reflects improvements in health, the ability to locate jobs more coincident with physical abilities, and the difficulties in securing Social Security disability benefits. While there is some temptation to attribute Blacks' marginally higher rates of disability reversal as indicative of overreporting disability initially (i.e., self-reported disability is associated with poor

Table 5. State Life Expectancies and the Expected Number of Lifetime Events at Age X, Estimates From Standard Working Life Tables, Multistate Working Life Tables, and Simulations

	State Life Expectancy			Volume of Events						
	ILF	Retired	Disabled	d_{ir}	d_{id}	d_{im}	d_{ri}	d_{di}	d_{rm}	d_{dm}
Smith's (1986) CPS-Based Multistate Life Table Estimates[a]										
Blacks										
Age 45	13.10	13.40	*	NR	NR	NR	NR	NR	NR	NR
Age 55	6.10	13.40	*	NR	NR	NR	NR	NR	NR	NR
Whites										
Age 45	16.10	13.40	*	NR	NR	NR	NR	NR	NR	NR
Age 55	8.00	13.30	*	NR	NR	NR	NR	NR	NR	NR
NLS-Based Multistate Life Table Estimates										
Blacks										
Age 45	14.57	7.12	2.63	.90	.19	.28	.39	.11	.52	.20
Age 55	7.52	8.08	2.08	.75	.10	.20	.28	.03	.51	.14
Whites										
Age 45	16.74	9.94	1.74	1.06	.14	.26	.45	.07	.61	.12
Age 55	8.61	10.68	1.46	.91	.08	.20	.34	.02	.61	.10
Assumption of No Reentry										
Blacks										
Age 45	12.01	9.57	2.16	.65	.17	.18				
Age 55	4.73	10.24	2.07	.45	.07	.11				
Whites										
Age 45	13.15	12.73	1.70	.73	.12	.15				
Age 55	5.39	13.19	1.57	.54	.06	.09				
Simulation[b]										
Simulation 1A	7.62	8.18	1.95	.93	.19	—	.40	.07	—	—
Simulation 1B	7.99	9.99	2.26	.99	.19	—	.44	.11	—	—
Simulation 1C	7.91	8.61	1.44	.96	.13	—	.41	.10	—	—
Simulation 1D	7.65	7.98	2.11	.87	.19	—	.37	.11	—	—

[a]Smith's estimates for nonworking life expectancy are not differentiated according to retirement and disability statuses.
[b]Life expectancy estimates are evaluated at age 55. Decrements reported for simulations refer to the cumulative number of events since age 45.
[c]NR = not reported.

Table 6. Percent of Life Expectancy in Each State at Age X, Whites and Blacks

	Whites			Blacks		
Age	% ILF	% Retired	% Disabled	% ILF	% Retired	% Disabled
45	58.89	34.98	6.13	59.94	29.27	10.80
47	56.32	37.45	6.24	57.60	31.64	10.75
49	53.37	40.25	6.38	54.76	34.38	10.86
51	49.94	43.49	6.57	51.31	37.60	11.09
53	45.98	47.22	6.79	47.23	41.36	11.42
55	41.49	51.49	7.01	42.51	45.71	11.78
57	36.49	56.31	7.19	37.23	50.67	12.10
59	31.13	61.60	7.27	31.58	56.14	12.28
61	25.69	67.10	7.21	25.94	61.81	12.25
63	20.65	72.34	7.01	20.88	67.12	12.00
65	16.56	76.73	6.72	16.99	71.41	11.61
67	13.70	79.86	6.44	14.51	74.24	11.25
69	12.01	81.76	6.23	13.36	75.67	10.98
71	11.10	82.82	6.08	13.13	76.08	10.79
73	10.53	83.48	6.00	13.42	75.93	10.66
75	9.83	84.20	5.96	13.82	75.63	10.55

Note. ILF = In the labor force.

labor market opportunities and positive psychological benefits), it is also important to keep in mind that self-reported disability status is associated with a very high mortality risk. Moreover, for disabled persons reentering the labor force, over 80 percent continued to report that health limited "the amount or kind of work" regardless of race. Thus, reentry among disabled persons may represent (perhaps forced) accommodation to health problems rather than a "getting better" phenomenon.

To better understand reentry's role in the work-to-retirement transition for the two race groups, a life table model was estimated assuming no reentry. Differences in these results compared to the original multistate estimates give some leverage on this issue. Immediately apparent are the number of years both race groups spend in "post-retirement" jobs, although Whites aged 45 years can expect to spend about one year more in these jobs than Blacks. Note that Blacks' post-retirement work opportunities are curtailed by substantially fewer retirements and greater chances of disability and death. Race is a clear marker of retirement access inequity.

The final set of results shows how the retirement life cycle is altered by eradicating key race differences in the life table engine. Erasing the labor force disadvantages incurred at younger ages, for example, has very little effect on Blacks' total working life expectancy at age 45, but it does increase retirement expectancy slightly while lowering disability expectancy (simulation 1A). Improving mortality substantially increases Blacks' working and retirement life expectancies, with little effect on disability life expectancy (simulation 1B). Finally, lowering disability rates not only would lower Blacks' disability life expectancy, but it also would have a positive effect on retirement life expectancy (simulation 1C). The factor having the greatest impact on extending Blacks' retirement life expectancy is mortality improvement — a variable not generally thought to be policy manipulable — at least in the short term.

DISCUSSION

It is a social fact in American society that fewer opportunities for achievement exist for Black men compared to White men. This is reflected in Blacks' lower educational attainment, lower wages, concentration in physically demanding and intrinsically unrewarding jobs, higher unemployment rates, higher rates of alcoholism and drug use, and higher mortality rates. An extensive literature, has documented these problems especially for Black youth, describing a turbulent transition to adulthood and what is often a truncated life course.

This study shows that Blacks' unequal footing in the labor market persists into the retirement years. Although a variety of explanations have been advanced to account for the race gap in older men's labor force attachment, the pattern of results is most consistent with the argument that race differences in health are the proximal determinant of the gap after age 45 (Bound et al., in press). Blacks' higher rates of disability at both older ages and the disability rates of younger Blacks carried into middle age account for almost all of the race difference in labor force participation rates. Once disabled, Blacks are no more or less likely to die than Whites, suggesting that the adoption of the disability status among Blacks is not simply a socially desirable response to constrained economic opportunities. Moreover, the lack of any significant race difference in labor force reentry among disabled persons suggests that once the disabled status is adopted, it is an equally permanent status for both race groups. The same holds for persons adopting the retired status. Differential economic opportunities for Blacks and Whites do not appear to be a factor stratifying post-retirement work experiences, once disability status is controlled. Our conclusion parallels that of Bound and colleagues in their analysis of race differences in older men's labor force attachment using a variety of nationally representative datasets. Black men's poorer health status is a dominant and proximal factor accounting for their lower labor force attachment.

This does not negate Parsons' (1980) arguments regarding the importance of Social Security disability programs for race differences in older men's labor force attachment. Such programs define a social context which allows individualistic factors such as health status to come into play in determining labor force attachment. Were such programs drastically curtailed, the necessity of working might well increase Blacks' levels of attachment (while simultaneously lowering the overall health of older Black workers). Our analysis also does not contradict Gibson's (1991) argument that Blacks have a greater preference for the disabled worker role due to life-long marginal labor force attachment. What our work suggests is that the poorer health status of older Black men (and the adoption of the disabled worker role) is a reflection of the confluence of social class factors such as life-long poverty or near poverty, and the overrepresentation in physically demanding and unrewarding jobs. Blacks' preferences for the disabled worker role thus are an outgrowth of greater rates of chronic health problems, which, in turn, devolve from social class disadvantages. Such preferences are reinforced at older ages by the continued absence of economic opportunities.

More generally, our analysis points to the importance of considering health status as a proximal determinant of the race gap in labor force participation throughout a significant portion of the career cycle. By extension, a portion of the race gap in career achievement may be a reflection of race differences in health status. In general, social stratification research on race differences in attainment has ignored the constraints that poor health may place on achievement over the career cycle. The results shown here suggest that at least some of the race gap in career attainment is affected by Blacks' lower likelihood of participating in the labor force due to poorer health (differential selection) as well as race differences in the health "stock" of labor force participants.

LFPRs are attractive measures of labor force inequity because of measurement ease, simplicity of interpretation, and their historical longevity as part of federal and local population statistics. Our analysis suggests caution in using these measures, however, when formulating policies to resolve race inequities. That is, LFPRs mask significant differences in Blacks' and Whites' retirement life cycle experiences, experiences which are the crux of manpower and pension policies. For example, viewing labor force inequity through the lens of LFPRs, a logical solution to resolve the race gap in older men's attachment would be to develop policies to increase Blacks' attachment through a reduction in disability. Older Blacks' lower LFPRs foster the perception that middle-aged and older Blacks spend less of their lives in the labor force compared to Whites, an idea reinforced by the fact that significant numbers of younger Black men do not and probably will not participate in the civilian labor force.

The retirement life cycle of Blacks, however, is more complex than the image conveyed by LFPRs. When status life expectancies are compared relative to total life expectancy, Blacks actually spend more — not less — of their lives in the labor force compared to Whites. Moreover, Blacks spend a greater portion of their lives disabled. That portion of older age traditionally described in economic terms as "leisure" is highly circumscribed for Blacks relative to that for Whites. Retirement is more a White experience than a Black experience, while the reverse is true with regard to disability. In contrast to the sorts of policies implied by the LFPRs, the life table analysis shows that erasing race differ-

ences in the retirement life cycle and improving retirement access among Blacks could be accomplished by reducing Black mortality. Policy targets might be the eradication of persistent poverty, higher rates of educational attainment, and job and wage inequality; these factors are the basis for social class differences in health. Note that mortality reduction as a long-term policy goal is not typically addressed by policy makers concerned with equity of retirement access. More common policy tools include pension policies, job training programs, preretirement training programs, and the enforcement of antidiscrimination policies. Although our analysis does not rule out the importance of such tools, our findings do suggest that equity of retirement access is partly a public health issue and almost certainly a function of lifelong poverty and its associated health consequences.

What our analysis cannot address is whether the events and circumstances contributing to race differences in labor force attachment and the retirement life cycle are unique to the period studied. Our data refer principally to the labor force experiences of older Blacks and Whites in the 1970s. There are reasons to suspect that the inequities of this decade are not unique. Race differences in middle-aged men's health and mortality have remained stable or widened in the last several decades; the gap in labor force attachment continues; and residential segregation and income inequality have not diminished (Farley, 1984; Siegel, 1993). This study serves as a benchmark for future research to evaluate changes in the retirement life cycle of Black and White men.

Our results also point to the importance of investigating how health and work are intertwined for Blacks and Whites to better understand race differences in the work-to-retirement transition. Do Blacks and Whites differentially define health conditions as problematic for continued work? What types of physical health conditions arise for the two race groups (including timing, duration, and severity), and how are these physical conditions related to functional limitations? To what extent are the health problems of Black men manifestations of adverse occupational circumstances and lower socioeconomic status? Are Blacks and Whites differentially able to accommodate their health problems due to occupational position or alternative career opportunities? Answers to these questions will enhance understanding of health's role as a key source of the apparent inequity of retirement access for Black and White men.

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