Mass Imprisonment and the Life Course: Race and Class Inequality in U.S. Incarceration

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Although growth in the U.S. prison population over the past twenty-five years has been widely discussed, few studies examine changes in inequality in imprisonment. We study penal inequality by estimating lifetime risks of imprisonment for black and white men at different levels of education. Combining administrative, survey, and census data, we estimate that among men born between 1965 and 1969, 3 percent of whites and 20 percent of blacks had served time in prison by their early thirties. The risks of incarceration are highly stratified by education. Among black men born during this period, 30 percent of those without college education and nearly 60 percent of high school dropouts went to prison by 1999. The novel pervasiveness of imprisonment indicates the emergence of incarceration as a new stage in the life course of young low-skill black men.

Has the growth of the American penal system over the past thirty years transformed the path to adulthood followed by disadvantaged minority men? Certainly the prison boom affected many young black men. The U.S. penal population increased six fold between 1972 and 2000, leaving 1.3 million men in state and federal prisons by the end of the century. By 2002, around 12 percent of black men in their twenties were in prison or jail (Harrison and Karberg 2003). High incarceration rates led researchers to claim that prison time had become a normal part of the early adulthood for black men in poor urban neighborhoods (Freeman 1996; Irwin and Austin 1997). In this period of mass imprisonment, it was argued, official criminality attached not just to individual offenders, but to whole social groups defined by their race, age, and class (Garland 2001a:2).

Claims for the new ubiquity of imprisonment acquire added importance given recent research on the effects of incarceration. The persistent disadvantage of low-education African Americans is, however, usually linked not to the penal system but to large-scale social forces like urban deindustrialization, residential segregation, or wealth inequality (Wilson 1987; Massey and Denton 1993; Oliver and Shapiro 1997). However, evidence shows incarceration is closely associated with low wages, unemployment, family instability, recidivism, and restrictions on political and social rights (Western, Kling and Weiman 2000; Hagan and Dinovitzer 1999; Sampson and Laub 1993; Uggen and Manza 2002; Hirsch et al. 2002). If indeed imprisonment became commonplace among young disadvantaged and minority men through the 1980s and 1990s, a variety of other social inequalities may have deepened as a result.

Although deepening inequality in incarceration and the pervasive imprisonment of

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disadvantaged men is widely asserted, there are few systematic empirical tests. To study how the prison boom may have reshaped the life paths of young men, we estimate the prevalence of imprisonment and its distribution among black and white men, aged 15 to 34, between 1979 and 1999. We also compare the prevalence of imprisonment to other life events—college graduation and military service—that are more commonly thought to mark the path to adulthood.

Many have studied variation in imprisonment but our analysis departs from earlier research in two ways. First, the risk of incarceration is usually measured by an incarceration rate—the overnight count of the penal population as a fraction of the total population (e.g., Sutton 2000; Jacobs and Helms 1996). Much like college graduation or military service however, having a prison record confers a persistent status that can significantly influence life trajectories. Our analysis estimates how the cumulative risk of incarceration grows as men age from their teenage years to their early thirties. To contrast the peak of the prison boom in the late 1990s with the penal system of the late 1970s, cumulative risks of imprisonment are calculated for successive birth cohorts, born 1945–49 to 1965–69. Second, although economic inequality in imprisonment may have increased, most empirical research just examines racial disparity (e.g., Blumstein 1993; Mauer 1999; Bridges, Crutchfield, and Pitchford 1994). To directly examine how the prison boom affected low-skill black men, our analysis estimates imprisonment risks at different levels of education. Evidence that imprisonment became disproportionately widespread among low-education black men strengthens the case that the penal system has become an important new feature of American race and class inequality.

IMPRISONMENT AND INEQUALITY

The full extent of the prison boom can be seen in a long historical perspective. Between 1925 and 1975, the prison incarceration rate hovered around 100 per 100,000 of the resident population. By 2001, the imprisonment rate, at 472 per 100,000, approached 5 times its historic average. The prisoners reflected in these statistics account for two-thirds of the U.S. penal population, the remainder being held in local jails. In 1997, about a third of state prisoners in 1997 had committed homicide, rape, or robbery, while property and drug offenders each accounted for one-fifth of all state inmates. In that same year, more than 60 percent of Federal prisoners were serving time for drug crimes (Maguire and Pastore 2001: 519). Nearly all prisoners serve a minimum of one year, with state drug offenders in 1996 serving just over 2 years on average, compared to over 11 years for murderers. In federal prison, average time served for drug offenders was 40 months in 1996 (Blumstein and Beck 1999:36, 49). These lengthy periods of confinement are distributed unequally across the population: More than 90 percent of prisoners are men, incarceration rates for blacks are about eight times higher than those for whites, and prison inmates average less than 12 years of completed schooling.

Race and Class Inequality

High incarceration rates among black and low-education men have been traced to similar sources. The slim economic opportunities and turbulent living conditions of young disadvantaged and black men may lead them to crime. In addition, elevated rates of offending in poor and minority neighborhoods compound the stigma of social marginality and provoke the scrutiny of criminal justice authorities.

Research on carceral inequalities usually examines racial disparity in state imprisonment. The leading studies of Blumstein (1982, 1993) find that arrest rates—particularly for serious offenses like homicide—explain a large share of the black-white difference in incarceration. Because police arrests reflect crime in the population and policing effort, arrest rates are an imperfect measure of criminal involvement. More direct measurement of the race of criminal offenders is claimed for surveys of crime victims who report the race of their assailants. Victimization data similarly suggest that the disproportionate involvement of blacks in crime explains most of the racial disparity in incarceration (Langan 1985). These results are buttressed by research associating violent and other crime in black neighborhoods with joblessness, family disruption, and neighborhood poverty (e.g., Crutchfield and Pitchford 1997; Messner et al. 2001; LaFree and Drass 1996; Morenoff et al. 2001; see the review of Sampson and Lauritsen 1997). In short, most of the racial

disparity in imprisonment is attributed to high black crime rates for imprisonable offenses (Tonry 1995, 79).

Although crime rates may explain as much as 80 percent of the disparity in imprisonment (Tonry 1995), a significant residual suggests that blacks are punitively policed, prosecuted, and sentenced. Sociologists of punishment link this differential treatment to official perceptions of blacks as threatening or troublesome (Tittle 1994). The racial threat theory is empirically supported by research on sentencing and incarceration rates. Strongest evidence for racially differential treatment is found for some offenses and in some jurisdictions rather than at the aggregate level. African Americans are at especially high risk of incarceration, given their arrest rates, for drug crimes and burglary (Blumstein 1993). States with large white populations also tend to incarcerate blacks at a high rate, controlling for race-specific arrest rates and demographic variables (Bridges et al. 1994). A large residual racial disparity in imprisonment thus appears due to the differential treatment of African Americans by police and the courts.

Similar to the analysis of race, class disparities may also be rooted in patterns of crime and criminal processing. Our analysis captures class divisions with a measure of educational attainment. Education, of course, correlates with measures of occupation and employment status that more commonly feature in research on class and crime (for reviews see Braithwaite 1979; Hagan, Gillis, and Brownfield 1996). Just as the social strain of economic disadvantage may push the poor into crime (Merton 1968; Cloward and Ohlin 1960), those with little schooling also experience frustration at blocked opportunities. Time series analysis shows that levels of schooling significantly affect race-specific arrest rates (LaFree and Drass 1996). While a good proxy for economic status, school failure also contributes directly to delinquency. Whether crime is produced by the oppositional subculture of school dropouts, as Cohen (1955) suggests, or by weakened networks of informal social control (Hagan 1993), poor academic performance and weak attachment to school is commonplace in the biographies of delinquents and adult criminals (Sampson and Laub 1993, ch. 5; Hagan and McCarthy 1997; Wolfgang, Figlio and Sellin 1972). High incarceration rates may therefore result from high crime rates among young men with little schooling.

As for racial minorities, researchers also argue that the poor are perceived as threatening to social order by criminal justice officials (e.g., Rusche and Kirchheimer 1968; Spitzer 1975; Jacobs and Helms 1996). The poor thus attract the disproportionate attention of authorities, either in the way criminal law is written or applied by police and the courts. Consistent with this view, time series of incarceration rates are correlated with unemployment rates and other measures of economic disadvantage, even after crime rates are controlled (Chiricos and Delone 1992). Few studies focus on education, as we do, but class bias in criminal sentencing is suggested by findings that more educated federal defendants receive relatively short sentences in general, and are less likely to be incarcerated for drug crimes (Steffensmeier and Demuth 2000). Thus, imprisonment may be more common among low-education men because they are the focus of the social control efforts of criminal justice authorities.

Inequality and the Prison Boom

While research on offending and incarceration explains race and class inequalities in imprisonment at a point in time, these inequalities may have sharpened over the last thirty years as prisons grew. Some claim that criminal offending at the bottom of the social hierarchy rose with the depletion of economic opportunities in inner cities. Others argue that punitive drug policy and tough-on-crime justice policy—the wars on drugs and crime—affected mostly low-skill minority men.

Increasing crime among low-education men is often seen to result from declining economic opportunities for unskilled workers. Urban ethnographers make this case in studies of drug-related gang activity (e.g., Venkatesh and Levitt 1998; Bourgois 1995). Several researchers also link growing crime in poor urban neighborhoods to increased rates of imprisonment. Freeman (1996) argued that young black men in the 1980s and 1990s turned to crime in response declining job opportunities. All forms of criminal justice supervision, including incarceration, probation and parole, increased as a consequence (Freeman 1996, 26). Duster (1996) similarly argues that the collapse of legitimate

employment in poor urban neighborhoods drew young black men into the illegal drug trade, steeply increasing their risks of arrest and incarceration. These analyses suggest that race and class inequalities in imprisonment deepened with rising inequality in the 1980s and 1990s.

Rising crime—especially drug-related crime—may have fed the prison boom, but crime and imprisonment data indicate the preeminent effect of crime control policy (Blumstein and Beck 1999; Boggess and Bound 1997). Like research on crime, studies of criminal justice policy suggest that race and class divisions in the risks of imprisonment have deepened. The argument seems strongest for the war on drugs. Intensified criminalization of drug use swelled state and federal prison populations by escalating arrest rates, increasing the risk of imprisonment given arrest, and lengthening sentences for drug crimes through the 1980s (Tonry 1995; Mauer 1999). Street sweeps, undercover operations, and other aggressive policing efforts targeted poor black neighborhoods where drugs were traded in public and the social networks of drug dealing were easily penetrated by narcotics officers (Tonry 1995:104–16). If poor black men were attracted to illegal drug trade in response to the collapse of low-skill labor markets, the drug war raised the risks that they would be caught, convicted and incarcerated. As Sampson and Lauritsen (1997:360) observed, trends in drug control policy ensured that "by the 1990s, race, class, and drugs became intertwined."

The forceful prosecution of drug crime formed part of a broader, punitive, trend in criminal justice policy that mandated long sentences for violent and repeat offenders and increasingly returned parolees to prison (Blumstein and Beck 1999). Collectively termed "the war on crime," these changes in criminal sentencing and supervision reflected a historic shift from a rehabilitative philosophy of corrections to crime prevention through the incapacitation of troublesome populations (Feeley and Simon 1992; Garland 2001b). Like the drug war, the war on crime may have disproportionately affected disadvantaged minorities. Wacquant (2000, 2001) argues that racial disparity and the penal system grew in tandem with the economic decline of the ghetto. In this analysis, the "recent racialization of U.S. imprisonment" is fuelled by a "supernumerary population of younger black men who either reject or are rejected by the deregulated low-wage labor market" (Wacquant 2001:83–84). Claims of deepening race and class inequality in imprisonment are also common among non-academic observers (e.g., Parenti 2000; Miller 1996; Abramsky 2002). In sum, this account of the prison boom suggests our first hypothesis: That race and class disparities in imprisonment increased through the 1980s and 1990s.

IMPRISONMENT AND THE LIFE COURSE

In addition to increasing race and class inequalities in incarceration, mass imprisonment may mark a basic change in the character of young adulthood among low-education black men. From the life course perspective, prison represents a significant re-ordering of the pathway through adulthood that can have lifelong effects. Consequently, the prison boom—like other large-scale social events—effects a historically significant transformation of the character of adult life.

Prison as a Life Course Stage

Life course analysis views the passage to adulthood as a sequence of well-ordered stages that affect life trajectories long after the early transitions are completed. In modern times, arriving at adult status involves moving from school to work, then to marriage, to establishing a home and becoming a parent. Completing this sequence without delay promotes stable employment, marriage, and other positive life outcomes. The process of becoming an adult thus influences success in fulfilling adult roles and responsibilities.

As an account of social integration, life course analysis has attracted the interest of students of crime and deviance (see Uggen and Wakefield 2003 for a review). Criminologists point to the normalizing effects of life course transitions. Steady jobs and good marriages offer criminal offenders sources of informal social control and pro-social networks that contribute to criminal desistance (Sampson and Laub 1993; Hagan 1993; Uggen 2000). Persistent offending is more likely for those who fail to secure the markers of adult life. The life course approach challenges the idea that patterns of offending are determined chiefly by stable propensities to crime, that vary little over

time, but greatly across individuals (Uggen and Wakefield 2003).

Imprisonment significantly alters the life course. In most cases, men entering prison will already be "off-time." Time in juvenile incarceration and jail and weak connections to work and family divert many prison inmates from the usual path followed by young adults. Spells of imprisonment—thirty to forty months on average—further delay entry into the conventional adult roles of worker, spouse and parent. More commonly military service, not imprisonment, is identified as the key institutional experience that redirects life trajectories (Hogan 1981; Elder 1986; Xie 1992). Elder (1987:543) describes military service as a "legitimate timeout" that offered disadvantaged servicemen in World War Two an escape from family hardship. Similarly, imprisonment can provide a chance to re-evaluate life's direction (Sampson and Laub 1993, 223; Edin, Nelson, and Paranal 2001). Typically, though, the effects of imprisonment are clearly negative. Ex-prisoners earn lower wages and experience more unemployment than similar men who have not been incarcerated (Western, Kling and Weiman 2001 review the literature). They are also less likely to get married or cohabit with the mothers of their children (Hagan and Dinovitzer 1999; Western and McLanahan 2000). By eroding employment and marriage opportunities, incarceration may also provide a pathway back into crime (Sampson and Laub 1993; Warr 1998). The volatility of adolescence may thus last well into midlife among men serving prison time. Finally, imprisonment is an illegitimate timeout that confers an enduring stigma. Employers of low-skill workers are extremely reluctant to hire men with criminal records (Holzer 1996; Pager 2003). The stigma of a prison record also creates legal barriers to skilled and licensed occupations, rights to welfare benefits, and voting rights (Office of the Pardon Attorney 1996; Hirsch et al. 2002; Uggen and Manza 2002). In short, going to prison is a turning point in which young crime-involved men acquire a new status involving diminished life chances and an attenuated form of citizenship. The life course significance of imprisonment motivates our analysis of the evolving probability of prison incarceration over the life cycle.

The Prison Boom and the Transformation of Adulthood

This account of imprisonment as a stage in the life course describes the effects of incarceration for individuals. In the historic context of the prison boom, incarceration may collectively reshape adulthood for whole birth cohorts. In this way, the growth of America's prisons is similar to other social transformations that precipitated major shifts in life trajectories. Such shifts are often associated with large-scale programs of social improvement like the establishment of public education, or cataclysmic events like depression or wartime. For example, World War Two drew nearly all young able-bodied U.S. men into military service, influencing life chances and the sequence of life stages (Elder 1986; Sampson and Laub 1996). After the war, many young disadvantaged and low-education men enlisted, attracted by programs like the G.I. Bill (Elder 1999). The episodic character of World War Two can be contrasted with the hundred-year emergence of mass public education. The expansion of public education in the United States contributed to an increasingly orderly and compressed transition to adulthood for successive birth cohorts growing up through the twentieth century (Modell, Furstenberg, and Hershberg 1976; Hogan 1981). The substantial, but ultimately stalled, convergence of African Americans on the life patterns of white America is reflected in postwar increases in black high school graduation and college attendance rates (Allen and Jewell 1996). Both the expansion of public education and military service in wartime produced basic changes in the passage from adolescence to adulthood.

Of course prison time is not chosen in the same way as school attendance or military service. Men must commit crime to enter prison. As Sutton (2000) observes, however, a variety of institutions compete for jurisdiction over the life course. Criteria for entry into prison, the military, or school are institutionally variable. During World War Two, the scale of the U.S. war effort ensured that all able-bodied young men were potential servicemen, and most were drafted. As the number of college places expanded during the 1960s and 1970s, young men became potential college students qualifying less on the basis of social background, and more through academic achievement. If accounts of the prison boom are correct, the prison emerged through

the 1980s and 1990s as a major institutional competitor to the military and the educational system, at least for young black men with little schooling. Much more than for older cohorts, the official criminality of men born in the late 1960s was determined by race and class.

Historically, going to prison was a marker of extreme deviance, reserved for violent and incorrigible offenders. Just as the threshold for military service was lowered during World War Two, the threshold for imprisonment was lowered by the wars on drugs and crime. The novel normality of criminal justice sanction in the lives of recent cohorts of disadvantaged minority men is now widely claimed. Freeman (1996:25) writes that "participation in crime and involvement in the criminal justice system has reached such levels as to become part of normal economic life for many young men." Irwin and Austin (1997:156) echo this observation: "For many young males, especially African Americans and Hispanics, the threat of going to prison or jail is no threat at all but rather an expected or accepted part of life." Garland (2001b:2), elaborating the idea of mass imprisonment similarly observes that for "young black males in large urban centers . . . imprisonment . . . has come to be a regular predictable part of experience." All these claims of pervasive imprisonment suggest a wholly new experience of adult life for recent cohorts of young disadvantaged men. Aggregate incarceration rates for the whole population are suggestive, but detailed empirical tests are rare.

The widely claimed significance of mass imprisonment in the lives of young African American men suggests two further hypotheses. First, we expect that imprisonment by the 1990s became a modal life event for young black men with low levels of education. Second, we also expect that by the 1990s the experience of imprisonment among African American men would have rivaled in frequency more familiar life stages such as military service and college completion.

CALCULATING THE CUMULATIVE RISK OF IMPRISONMENT

A life course analysis of the risks of imprisonment was reported by Bonczar and Beck (1997) for the Bureau of Justice Statistics (BJS). Using life table methods and data from the 1991 Survey of Inmates of State and Federal Correctional Facilities, Bonczar and Beck (1997) estimate that 9.0 percent of U.S. males will go to prison at some time in their lives. Significant racial disparity underlies this overall risk. The estimated lifetime risk of imprisonment for black men is 28.5 percent compared to 4.4 percent for white men. The risk of entering prison for the first time is highest at ages 20 to 30, and declines significantly from age 35.

The BJS figures provide an important step in understanding the risks of incarceration over the life course, but the analysis can be extended in at least two ways. First, the BJS age-specific risks of incarceration are not defined for any specific birth cohort; instead the incarceration risks apply to a hypothetical cohort that shares the age-specific incarceration risks of all the different cohorts represented in the 1991 prison inmate surveys. This approach yields accurate results if the risk of incarceration is stable over time. However, the incarceration rate and the percentage of men entering prison for the first time grew substantially between 1974 and 1999 (Figure 1). The percentage imprisoned more than doubled during this period. We address this problem by combining time-series data on imprisonment (1964–1999) with multiple inmates surveys (1974–1997). These data allow estimation of cumulative risks of imprisonment to age 30–34 for five-year birth cohorts born between 1945–49 and 1965–69. This approach provides a direct assessment of how the prison boom may have changed the life course of young men.

Second, like virtually all work in the field, cumulative risks have not been estimated for different socio-economic groups. Motivated by claims that the prison boom disproportionately affected the economically disadvantaged, as well as African Americans, we study how the risks of imprisonment differ across levels of education.[1]

While our data sources and specific techniques differ, we follow Bonczar and Beck (1997) in using life table methods. These

[1] At least two other studies estimate cumulative risks of arrest, rather than imprisonment (Blumstein and Graddy 1983; Tillman 1987). Neither of these studies compare risks of arrest by class or across cohorts.

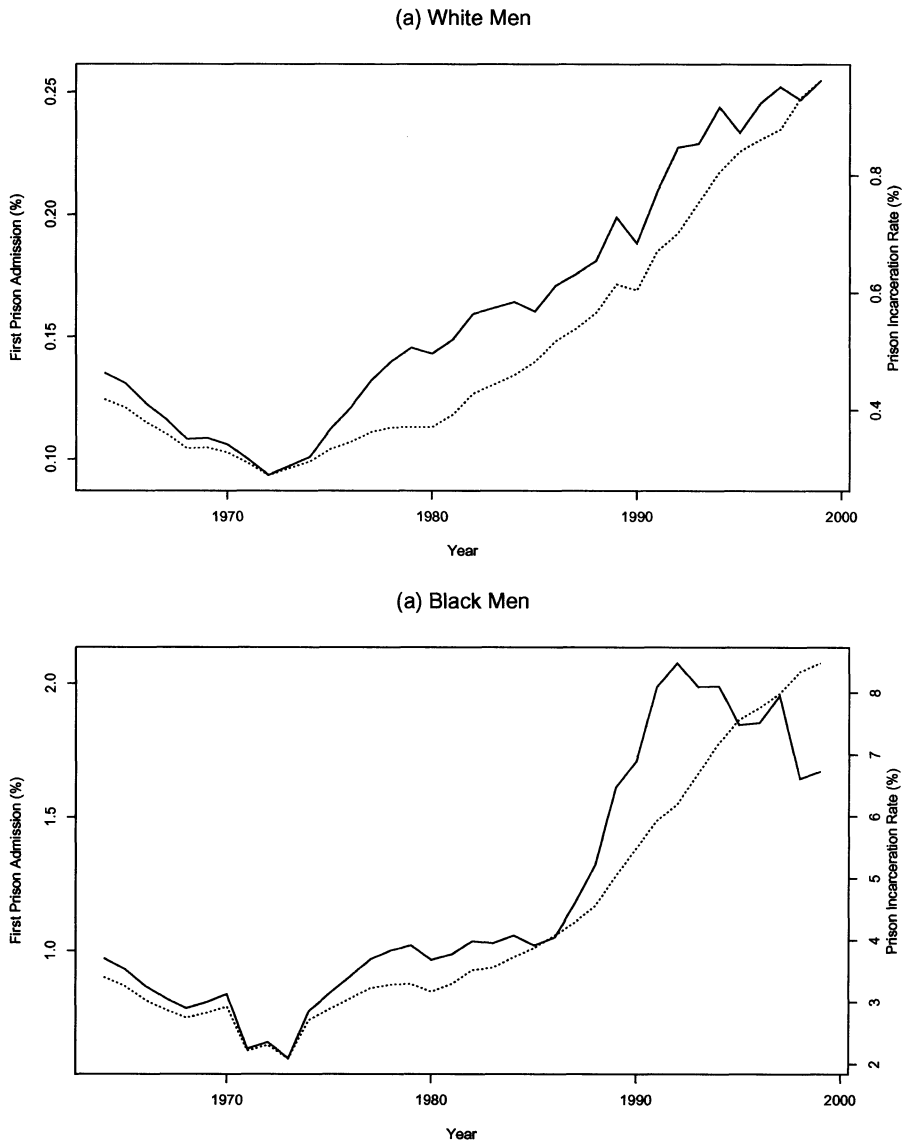

Figure 1. Percentage of Men Admitted to Prison for the First Time (solid line) and Incarcerated (broken line), Blacks and Whites, Aged 18 to 34, 1974 to 1999

methods are used to summarize the mortality experiences of a cohort or in a particular period. The cumulative risk of death, for example, can be calculated by exposing a population to a set of age-specific mortality rates. Life table methods can be applied to other risks including the risk of incarceration. Our estimates are based on multiple-decrement methods in which there are several independent modes of exit from the life table. The analysis allows two competing risks: the risk of going to prison and the risk of death.

Life Table Calculations

Calculations for the cumulative risk of imprisonment require age-specific first-incarceration and mortality rates. The age-specific first-incarceration rate, ${}_nM_x^I$, is the number of people, aged x to $x + n$, entering prison for the first time, divided by the number of people of that age in the population at risk. Estimating age-specific risks of first incarceration requires: (1) the number of people in age group x to $x + n$ annually admitted to prison for the first time,

${}_nF_x$, (2) the sum total of surviving inmates and ex-inmates in that age group admitted in earlier years, ${}_nS_x$, and (3) a population count of those in the age group, ${}_nC_x$. These quantities are used to calculate the age-specific risks of first incarceration in a given year:

$$ {}_nM_x^I = ({}_nF_x)/({}_nC_x - {}_nS_x) \qquad (1) $$

Age-specific mortality rates, ${}_nM_x^D$, are taken from published mortality tables. The combined risk of exit from the table, ${}_nM_x$, is the sum of the risk of first incarceration and the risk of mortality.

$$ {}_nM_x = {}_nM_x^I + {}_nM_x^D \qquad (2) $$

The probability of incarceration, ${}_nq_x^I$, between ages x and $x+n$ is estimated from the age-specific risk:

$$ {}_nq_x^I = [(n)_nM_x^I]/[1 + .5(n)_nM_x] \qquad (3) $$

(e.g., Namboodiri and Suchindran 1987:25). This calculation assumes that new incarcerations and deaths are distributed evenly over the age interval and thus the average incarceration occurs halfway through the interval.

The probabilities of incarceration are then used to calculate the number of incarcerations occurring in the population. Assuming an initial population of men exposed to the age-specific incarceration rates, $l_0 = 100{,}000$, the number incarcerated during the first interval is equal to the number at risk, l_0, times the probability of incarceration, ${}_nq_x^I$. Subtracting those who were incarcerated or died, ${}_nd_x$, gives the number of people alive and not yet incarcerated at the beginning of the next age interval, l_{x+n}. For the five-year age intervals we use below, the number incarcerated in each subsequent interval can then be calculated:

$$ {}_nd_x^I = ({}_nq_x^I)(l_x),\ x = 15, 20, 25, \text{ and } 30;\ n = 5. \qquad (4) $$

The cumulative risk of incarceration from age 15–19 to 30–34 is the sum of incarcerations over the initial population,

$$ \text{Cumulative Risk} = \sum_x {}_nd_x^I/l_0. \qquad (5) $$

Estimating the Parameters of the Life Table

For a specific race-education subgroup, the critical quantity for calculating the cumulative risk—the number of first-time prison admissions for a cohort in age group x to $x + n$—is not directly observed but can be estimated by:

$$ {}_n\bar{F}_x = (P_t)({}_nk_x) \qquad (6) $$

where P_t is the size of the prison population in year t corresponding to the age group and cohort, and ${}_nk_x$ is the fraction of first admissions in the penal population that entered prison in the past year. The proportion ${}_nk_x$ is estimated using Surveys of Inmates of State and Federal Correctional Facilities. The surveys have been conducted approximately every five years between 1974 and 1997. Inter-survey years were interpolated to provide annual estimates. (All data sources are described in the appendix.)

Because estimates of the proportion of first admissions are based on survey data recorded at a single point in time, inmates incarcerated less than a year are under-counted. Information about brief stays is incorporated with data from the National Corrections Reporting Program (NCRP) (Bonczar and Beck 1997). NCRP data are used to calculate an adjustment factor, ${}_nP_x$, which is a function of the fraction of brief prison stays estimated to have been missed by the inmate surveys. The final estimate of first admissions in a given year is then:

$$ {}_n\hat{F}_x = ({}_n\bar{F}_x)({}_nP_x). \qquad (7) $$

Only correctional data are needed to calculate the number of first admissions but data on the non-institutional population must be used to estimate the risk of imprisonment among those who have never been incarcerated. The probability of first incarceration is the count of first-time prison admissions divided by the population at risk. Estimating the population at risk requires adjusting census data to take account of all prior first admissions of the cohort and the mortality and additional educational attainment of those previously admitted to prison.

The age-specific risk of entering prison for the first time estimated by

$$ {}_n\hat{M}_x^I = ({}_n\hat{F}_x)/({}_n\hat{C}_x - {}_n\hat{S}_x) \qquad (8) $$

where,

$$ {}_n\hat{S}_x = \hat{\sum_t}({}_nF_{t-x})({}_nw_x^t) \qquad (9) $$

and the weight, ${}_nw_x^t$, gives the proportion of the cohort surviving from the beginning of year t to age x to $x + n$. In our analyses the surviving frac-

tion of a cohort is calculated from age 15–19, the first interval of exposure to the risk of prison incarceration. Population counts, ${}_n\hat{C}_x$, are taken from census enumerations and projections reported in the *Statistical Abstracts of the United States* (1974–1999). Mortality data to form the survival rates are taken from life tables published in *Vital Statistics for the United States* by the National Center for Health Statistics.

Cumulative risks of imprisonment are estimated for three levels of education: (1) less than high school graduation, (2) high school graduation or equivalency, and (3) at least some college. Table 1 reports the distribution of black and white men by education for cohorts born 1945–49 and 1965–69. By age 30 to 34, the three-category code roughly divides the black and white male population into the lower 15 percent, the next 35 percent, and the top 50 percent of the education distribution. Census data (1970–1990) are used to estimate population counts at each level of education. To adjust for differential mortality by education we use figures from the National Longitudinal Mortality Study which reports mortality by education for black and white men. These figures are used to calculate multipliers for each age-race group to approximate education-specific mortality rates. Finally the surviving fraction of inmates is adjusted to account for additional education attained after admission to prison. The National Longitudinal Survey of Youth (NLSY) was used to estimate the proportion of inmates who go on graduate from high school or attend college in each subsequent age interval.

We assume that mortality rates for men going to prison are the same as those for non-prisoners and educational inequality in mortality is unchanging. Neither assumption substantially affects our results because mortality rates are low compared to imprisonment rates for men under age 35. Thus, a wide variety of mortality assumptions yield substantively identical conclusions about the risks of imprisonment. For example, the poor health of prisoners and their exposure to violence likely increases mortality risk compared to men who have not been to prison. We conducted a sensitivity analysis in which the mortality rate of men who have entered prison was set to twice that for those who had never been to prison; under this assumption the results are essentially identical to those reported below.

Although we combine a wide variety of data to estimate the cumulative risks, our key data source is the *Survey of Inmates of State and Federal Correctional Facilities*, 1974–1997. Descriptive statistics from the surveys show that the state prison population became more educated between 1974 and 1997, increasing the number of high school graduates from 38 to 60 percent (Table 2). The percentage of whites in prison also declined, due largely to the increasing share of Hispanic men in state prison.

Instead of using life table methods, an individual's cumulative risk of imprisonment could be observed directly in a panel study in which a respondent's imprisonment status was updated at regularly-scheduled intervals. The NLSY approximates this design, although incarceration status is only recorded at the time of survey interview and data are available for a relatively small cohort born between 1957 and 1964. NLSY figures are compared to our estimates below.

Table 1. Percentage of Non-Hispanic Men at Three Levels of Educational Attainment, Born 1945–1949 and 1965–1969, in 1979 and 1999

	White Men (%)	Black Men (%)
Born 1945–1949 in 1979		
Less than high school	12.3	27.3
High school or equivalent	32.9	38.2
Some college	54.8	34.5
Born 1965–1969 in 1999		
Less than high school	7.5	14.2
High school or equivalent	33.4	43.0
Some college	59.1	42.8

Note: Cell entries adjust for the incarcerated population, adding prison and jail inmates to the counts at each level of education. Data from the Current Population Survey.

Table 2. Means of Demographic and Admission Variables from State and Federal Surveys of Correctional Facilities, Male Inmates, 1974–1997

	State					Federal	
	1974	1979	1986	1991	1997	1991	1997
First Admissions (%)	43	62	58	62	63	71	70
Age (years)	30	29	31	32	33	37	37
Education							
High school dropout (%)	62	51	52	42	40	24	26
High school/GED (%)	27	35	33	46	49	48	50
Some college	11	14	16	12	11	28	24
Race or Ethnicity							
White (%)	45	42	40	35	33	39	30
Black (%)	47	47	45	46	46	29	38
Hispanic (%)	6	10	13	17	17	28	27
Sample size	8741	9142	11397	11157	11349	4989	3176

RESULTS

The Prevalence of Imprisonment

The full table for non-Hispanic black and white men, born 1945–49 and 1965–69, illustrates the life table calculations (Table 3). The risk of first-time imprisonment is patterned by age, cohort, and race. In contrast to crime where offending peaks in the late teens, the risk of first-time imprisonment increases with age and peaks for men in their late twenties. Not just an event confined to late adolescence and young adulthood, men in their early thirties remain at high risk of acquiring a prison record. The life table also clearly indicates cohort differences. Between ages 25 and 29, black men without felony records had almost a 10 percent chance of imprisonment by the end of the 1990s (Table 3, column 3). This imprisonment risk is 2.5 times higher than that for black men at the same age born twenty years earlier. The probability of imprisonment for white men was only one-fifth as large. High age-specific risks among recent birth cohorts of black men sum to large cumulative risks. Black men born 1945–1949 had a 10.6 percent chance of spending time in state or federal prison by their early thirties. This cumulative risk had climbed to over 20 percent for black men born 1965–69. The cumulative risk of imprisonment grew slightly faster for white men. Among white men born 1965–1969, nearly 3 percent had been to prison by 1999, compared to 1.4 percent born in the older cohort (Table 3, column 7).

Table 4 reports cumulative risks for different birth cohorts and education groups and compares these to the usual prison incarceration rates. Incarceration rates are highly stratified by education and race. High school dropouts are 3 to 4 times more likely to be in prison than those with 12 years of schooling. Blacks, on average, are about 8 times more likely to be in state or federal prison than whites. By the end of the 1990s, 21 percent of young black poorly-educated men were in state or federal prison compared to an imprisonment rate of 2.9 percent for young white male dropouts.

The lower panels of Table 4 show the cumulative risks of imprisonment. Our estimates are broadly consistent with those from the BJS (Bonczar and Beck 1997) and the NLSY. The NLSY figures and those for the 1965–1969 cohort of white men are in very close agreement. Our estimates for black men, particularly dropouts, are higher than the NLSY figures, but lower than those calculated by the BJS. This discrepancy between data sources may be due to under-counting of imprisonment in the NLSY (prison spells between survey interviews are not recorded), and survey non-response.

Like incarceration rates, the cumulative risks of imprisonment fall with increasing education. The cumulative risk of imprisonment is 3 to 4 times higher for high school dropouts than for high school graduates. About 1 out of 9 white male high school dropouts, born in the late 1960s, would serve prison time before age 35 compared to 1 out of 25 high school graduates. The cumulative risk of incarceration is about 5

Table 3. Life Tables for Cumulative Risks of Prison Incarceration and Mortality for Non-Hispanic Men Born 1945–49 and 1965–69

Age (years) (1)	${}_nM_x^I$ (2)	${}_nq_x^I$ (3)	${}_nl_x$ (4)	${}_nd_x^I$ (5)	N (6)	Cumulative Risk (7)
White Men						
Born 1945–1949						
15–19	.0006	.0032	100000	318.5	318.5	.32
20–24	.0008	.0040	99444	393.4	712.0	.71
25–29	.0008	.0040	98768	396.3	1108.3	1.11
30–34	.0006	.0030	97429	289.0	1397.3	1.40
Born 1965–1969						
15–19	.0008	.0039	100000	394.6	394.6	.39
20–24	.0007	.0033	99392	332.5	727.1	.73
25–29	.0024	.0118	98847	1163.2	1890.4	1.89
30–34	.0021	.0105	96817	1018.2	2908.6	2.91
Black Men						
Born 1945–1949						
15–19	.0040	.0197	100000	1972.9	1972.9	1.97
20–24	.0064	.0313	97747	3056.8	5029.7	5.03
25–29	.0078	.0379	94291	3569.1	8598.8	8.60
30–34	.0045	.0222	88504	1962.6	10561.4	10.56
Born 1965–1969						
15–19	.0042	.0206	100000	2064.4	2064.4	2.06
20–24	.0084	.0409	97742	3997.3	6061.7	6.06
25–29	.0205	.0964	93448	9006.6	15068.3	15.07
30–34	.0137	.0657	82720	5436.6	20504.9	20.50

Note: Cumulative risks are for incarcerations (in the presence of mortality).

${}_nM_x^I$ = age-specific incarceration rate

${}_nq_x^I$ = probability of incarceration in the interval

${}_nl_x$ = number at risk (adjusted for mortality)

${}_nd_x^I$ = number of incarcerations in the interval

N = cumulative number of incarcerations

times higher for black men. Incredibly, a black male dropout, born 1965–69, had nearly a 60 percent chance of serving time in prison by the end of the 1990s. At the close of the decade, prison time had indeed become modal for young black men who failed to graduate from high school. The cumulative risks of imprisonment also increased to a high level among men who had completed only 12 years of schooling. Nearly 1 out of 5 black men with just 12 years of schooling went to prison by their early thirties.

It might be challenged that growing imprisonment risks among black dropouts results from increasing educational attainment. While more than a quarter of all black men born 1945–49 had not completed high school by 1979, the percentage of high school dropouts had fallen to 14 percent by 1999 (Table 1). The high school dropouts of the late 1990s may be less able and more crime-prone than the dropouts of the late 1970s. If the selectivity of education were influencing imprisonment risks we would also expect increased imprisonment among college-educated blacks, as college education became more common. However, risks of imprisonment among college-educated black men slightly declined, not increased. We can also guard against the effects of selectivity by considering all non-college men, whose share of the black and white male populations remained roughly constant for our period of study. When figures for dropouts and high school graduates are pooled together, the risk of imprisonment for non-college black men aged 30–34 in 1999 is 30.2 percent compared to 12.0 percent in 1979.

Prison time has only recently become a common life event for black men. Virtually all the increase in the risk of imprisonment falls on those with just a high school education. For non-college black men reaching their thirties at the end of the 1970s, only 1 in 8 would go to

Table 4. Imprisonment Rate at Ages 20 to 34, and Cumulative Risk of Imprisonment, Death, or Imprisonment by Ages 30 to 34 by Educational Attainment, Non-Hispanic Men

	All (1)	Less than High School (2)	High School/ GED (3)	All Noncollege (4)	Some College (5)
Imprisonment Rate (%)					
White Men					
1979	.4	1.0	.4	.6	.1
1999	1.0	2.9	1.7	1.9	.2
Black Men					
1979	3.2	5.7	2.7	4.0	1.5
1999	8.5	21.0	9.4	12.7	1.7
Cumulative Risk of Imprisonment by Ages 30–34					
White Men					
BJS	3.0	—	—	—	—
NLSY	4.3	11.3	3.7	5.1	1.5
1979	1.4	4.0	1.0	2.1	.5
1999	2.9	11.2	3.6	5.3	.7
Black Men					
BJS	24.6	—	—	—	—
NLSY	18.7	30.9	18.8	19.3	7.2
1979	10.5	17.1	6.5	12.0	5.9
1999	20.5	58.9	18.4	30.2	4.9
Cumulative Risk of Death or Imprisonment by Ages 30–34					
White Men					
1979	3.8	7.8	3.5	4.9	1.5
1999	5.0	14.0	5.5	7.7	1.7
Black Men					
1979	15.6	23.8	11.6	17.8	8.7
1999	23.8	61.8	21.9	33.9	7.4

Note: The Bureau of Justice Statistics (BJS) figures are reported by Bonczar and Beck (1997) using a synthetic cohort from the Survey of Inmates of State and Federal Correctional Facilities (1991). The National Longitudinal Survey of Youth (NLSY) figures give the percentage of respondents who have ever been interviewed in a correctional facility by age 35 (whites N = 2171, blacks N = 881). The NLSY cohort was born 1957–1964. The 1979 cohort is born 1945–1949; the 1999 cohort is born 1965–1969.

prison, and just 1 in 16 among high school graduates. Although these risks are high compared to the general population, imprisonment was experienced by a relatively small fraction of non-college black men born just after World War Two.

The final panel of Table 4 adds mortality risks to the risks of imprisonment. Again, non-college black men born in the late 1960s experience high risks. Estimates show that one-third die or go to prison by their early thirties. The table also indicates that the risk of imprisonment is much higher than the risk of death, so the results are not significantly altered by the addition of mortality.

Trends in Race and Class Disparities

The changing risks of imprisonment across cohorts can be described by a regression that writes the age-specific risk of first imprisonment (y) as a function of age, education, and race. For age group i (measured by a 4-point scale, A_i, for 15–19 years, 20–24 years, 25–29 years, 30–34 years), in education group j (measured by $\boldsymbol{E}_j$, a vector of dummy variables for high school dropouts and those with some college), race k (indicated by a dummy variable for blacks, B_k, and birth cohort l (indicated by the vector of dummy variables, $\boldsymbol{C}_l$, for cohorts 1950–55 to 1965–69),

$$\log y_{ijkl} = \alpha + \beta A_i + \boldsymbol{\gamma}'\boldsymbol{E}_j + \delta B_k + \boldsymbol{\lambda}'\boldsymbol{C}_l + \varepsilon_{ijkl}. \quad (10)$$

The model is fitted with a least squares regression. This basic model is augmented with cohort interactions to study whether race and class differences in imprisonment increased over time.

Table 5 reports results for the interaction model. The main effects in column (1) show variation in the risk of imprisonment for the oldest birth cohort, born 1945–49. The positive effect for age reflects the peak years of imprisonment risk in the late twenties. The education effects indicate that, for the oldest cohort, men who attend college have the same risk of imprisonment as high school graduates, net of the effects of age and race. High school dropouts, however, are about four times ($e^{1.38} \approx 3.97$) more likely to go to prison than high school graduates. There is also strong evidence of racial disparities in the risk of imprisonment for men born 1945–49, as black men are about 5.4 times more likely to go to prison than white men.

The changing risks of imprisonment are described by columns (2) to (5) in Table 5. The cohort main effects increase in size, and 20 years after the birth of the 1945–49 cohort, the imprisonment risk has more than doubled, $e^{.76} \approx 2.1$. The age-imprisonment gradient also became steeper. While incarceration risks grew by 73 percent for each five-year age category in the oldest cohort, born 1945–49, the age effect had grown to 160 percent by the late 1990s. Imprisonment disparities by education also changed significantly. Through the 1980s and 1990s, a large gap in imprisonment risks opened between the college-educated and high school graduates. While this gap was nearly zero for men aged 30–34 in 1979, high school graduates were about four times more likely to go to prison than men with college education by the late 1990s. The differential risk of imprisonment between dropouts and high school graduates remained stable. Estimates of race effects show no significant change in the relative risk of black incarceration. In sum, the risks of imprisonment generally increased for all groups, at all ages; racial inequality in imprisonment remained stable, but educational inequality in imprisonment increased.

Imprisonment Compared to Other Life Stages

Finally, we compare imprisonment to other life experiences that mark the transition to adulthood. We report levels of educational attainment, marital and military service histories for all and non-college men, using data from the

Table 5. Regression of Log Risk of Prison Incarceration, Non-Hispanic Black and White Men, Born 1945–1969

		Cohort Interactions			
	Main Effects	1950–1954	1955–1959	1960–1964	1965–1969
	(1)	(2)	(3)	(4)	(5)
Intercept	–.73**	.16	.22	.59*	.76**
	(4.50)	(.69)	(.96)	(2.59)	(3.34)
Age	.55**	.11	.19	.41**	.41**
	(7.55)	(1.03)	(1.85)	(4.04	(4.06)
Less than High School	1.38**	–.06	.14	.10	.12
	(6.98)	(.22)	(.51)	(.37)	(.43)
Some College	–.03	–.17	–.41	–1.48**	–1.42**
	(.14)	(.61)	(1.45)	(5.29)	(5.08)
Black	1.69**	–.04	–.11	–.36	–.26
	(10.46)	(.16)	(.48)	(1.59)	(1.13)

Note: The *t* statistics appear in parentheses. Age is coded in five-year categories, ages 15–19 = –1.5, 20–24 = –.5, 25–29 = .5, 30–34 = 1.5. Coefficients for the intercept in columns (2)–(5) are cohort main effects.

$R^2 = .95$, N = 120

*$p < .05$; **$p < .01$

2000 census. To make the incarceration risks comparable to census statistics, our estimates are adjusted to describe the percentage of men, born 1965–69, who have ever been imprisoned and who survived to 1999.

The risks of each life event varies with race, but racial differences in imprisonment greatly overshadows any other inequality (Table 6). Among all men, whites in their early thirties are more than twice as likely to hold a bachelor's degree than blacks. Blacks are about 50 percent more likely to have served in the military. However, black men are about 7 times more likely to have a prison record. Indeed, recent birth cohorts of black men are more likely to have prison records (22.4 percent) than military records (17.4 percent) or bachelor's degrees (12.5 percent). The share of the population with prison records is particularly striking among non-college men. Whereas few non-college white men have prison records, nearly a third of black men with less than a college education have been to prison. Non-college black men in their early thirties in 1999 were more than twice as likely to be ex-felons than veterans. This evidence suggests that by 1999 imprisonment had become a common life event for black men that sharply distinguished their transition to adulthood from that of white men.

DISCUSSION

This analysis provides evidence for three empirical claims. First, imprisonment has become a common life event for recent birth cohorts black non-college men. In 1999, about 30 percent of such men had gone to prison by their mid-thirties. Among black male high school dropouts, the risk of imprisonment had increased to 60 percent, establishing incarceration as a normal stopping point on the route to midlife. Underscoring the historic novelty of the prison boom, these risks of imprisonment are about three times higher than 20 years earlier. Second, race and class disparities in imprisonment are large and historically variable. In contrast to claims that racial disparity has grown, we find a pattern of stability in which incarceration rates and cumulative risks of incarceration are, on average, 6 to 8 times higher for young black men compared to young whites. Class inequality increased, however, as a large gap in the prevalence of imprisonment opened between college-educated and non-college men in the 1980s and the 1990s. Indeed, the lifetime risks of imprisonment roughly doubled from 1979 to 1999, but nearly all of this increased risk was experienced by those with just a high school education. Third, imprisonment now rivals or overshadows the frequency of military service and college graduation for recent cohorts of African American men. For black men in their mid-thirties at the end of the 1990s, prison records were nearly twice as common as bachelor's degrees. In this same birth cohort of non-college black men, imprisonment was more than twice as common as military service.

In sum, excepting the hypothesis of increased racial disparity, our main empirical expectations about the effects of prison boom on the life paths of young disadvantaged men are strongly supported. Because racial disparity in imprisonment is very high and risks of imprisonment are growing particularly quickly among non-col-

Table 6. Percentage of Non-Hispanic Black and White Men, Born 1965–1969, Experiencing Life Events and Surviving to 1999

Life Event	White Men (%)	Black Men (%)
All Men		
Prison Incarceration	3.2	22.4
Bachelor's Degree	31.6	12.5
Military Service	14.0	17.4
Marriage	72.5	59.3
Noncollege Men		
Prison Incarceration	6.0	31.9
High School Diploma/GED	73.5	64.4
Military Service	13.0	13.7
Marriage	72.8	55.9

Note: The incidence of all life events except prison incarceration was calculated from the 2000 Census.

lege men, the life path of non-college black men through the criminal justice system is diverging from the usual trajectory followed by most young American adults.

The high imprisonment risk of black non-college men is an intrinsically important social fact about the distinctive life course of the socio-economically disadvantaged. Although the mass imprisonment of low-education black men may result from the disparate impact of criminal justice policy, a rigorous test demands a similar study of patterns of criminal offending. Increased imprisonment risks among low-education men may be due to increased involvement in crime. If patterns of offending follow economic trends, declining wages among non-college men over the last 20 years may underlie the growing risk of imprisonment. Researchers have examined the consequences of race differences in offending for official crime and imprisonment, but relatively little is known about educational differences in offending within race groups. To determine whether the shifting risks are due to policy or changing patterns of crime, we thus need to develop estimates of crime rates for different race-education groups.

Mass imprisonment among recent birth cohorts of non-college black men challenges us to include the criminal justice system among the key institutional influences on American social inequality. The growth of military service during World War Two and the expansion of higher education exemplify projects of administered mobility in which the fate of disadvantaged groups was increasingly detached from their social background. Inequalities in imprisonment indicate the reverse effect, in which the life path of poor minorities was cleaved from the well-educated majority and disadvantage was deepened, rather than diminished. More strikingly than patterns of military enlistment, marriage, or college graduation, prison time differentiates the young adulthood of black men from the life course of most others. Convict status inheres now, not in individual offenders, but in entire demographic categories. In this context, the experience of imprisonment in the United States emerges as a key social division marking a new pattern in the lives of recent birth cohorts of black men.

APPENDIX. Data Sources For Life Table Calculations

Survey of Inmates of State and Federal Correctional Facilities, 1974, 1979, 1986, 1991, 1997 (BJS 1990, 1997, 1994a, 1993; BJS and Federal Bureau of Prisons 2001; Federal Bureau of Prisons 1994b). Probability samples of state and federal prison populations providing information about first admission status, race, age, and education of prisoners.

Number of sentenced prisoners under jurisdiction of State and Federal correctional authorities (Maguire and Pastore 2001:507). These yearend counts of the state and federal prison population formed the base used to calculate age-specific first admission rates.

Statistical Abstracts of the United States, 1964–1999. The *Abstracts* provided annual population counts by age and race.

Public Use Microdata 1% Sample of U.S. Population, 1970–2000 (Bureau of the Census 1991, 1994, 1998; Ruggles and Sobek 2003). Census data were used to estimate population counts of black men in different birth cohorts. Census data were interpolated to obtain figures for inter-census years.

National Corrections Reporting Program (NCRP), 1983–1997 (BJS 2002). NCRP data provides information on all admitted and released prisoners in 32–38 states. These data are used to calculate all admissions from new court commitments between July 16 and July 15 of the following year with sentences of at least 1 year. We also identify all admissions during that period that were discharged before July 15. Our adjustment factor, ${}_{n}p_{x}$, is the number of admissions divided by the number of admissions minus the number of discharges.

Vital Statistics for the United States (National Center for Health Statistics 1964–1999). *Vital Statistics'* annual age-specific mortality rates for black and white men formed baselines that were adjusted for the three education categories.

U.S. National Longitudinal Mortality Study (Rogot, Sorlie, Johnson and Schmitt 1993). These data were used calculate multipliers to form mortality rates at different levels of education.

National Longitudinal Survey of Youth (Center for Human Resource Research 2000). These data were used to calculate the educational mobility of men who had been imprisoned. The mobility data were used to decrement popula-

tion counts of high school graduates and college attendees by estimates of those who had already experienced imprisonment at a lower level of education.

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