

Mass Incarceration, Family Complexity, and the Reproduction of Childhood Disadvantage

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In this article we examine the link between family complexity—measured by noncustodial parenthood and multiple-partner fertility—and incarceration. In 2012, close to 2.6 million children, or roughly one in twenty-five minors, had a parent in jail or prison. The risk of having a parent currently or ever incarcerated is disproportionately concentrated among black children and children of high school dropouts, many of whom are noncustodial parents. Variation in question wording, differences in length of exposure to parental incarceration, and the measurement of residential parenthood in household-based sample surveys converge to produce different estimates of race and class inequality in having a parent currently or ever incarcerated, when compared to similar estimates of parental incarceration from inmate surveys. Drawing on data from multiple sources and the development of a new method for the estimation of multiple-partner fertility among inmates, we consider how race and class inequality in parental incarceration may contribute to family complexity and the reproduction of childhood disadvantage.

Keywords: incarceration; fertility; parenthood; family; sampling; inequality

Four decades of growth in the prison and jail population represents a critical institutional intervention in the lives of American families. Close to 2.3 million Americans are behind bars, which represents 1 percent of the adult population (Pew 2008). Over half of all prisoners have children under the age of 18,

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and about 45 percent of those parents were living with their children at the time they were sent to prison (Glaze and Maruschak 2010). As a consequence, on any given day, more than 2.6 million children, or roughly one in twenty-five minors, in the United States have a parent in prison or jail, and far more have had a parent incarcerated at some point during their childhood (Wildeman 2009; Pettit, Sykes, and Western 2009).

David Garland (2001) coined the term “mass incarceration” to characterize extraordinarily high incarceration rates in the United States. Mass incarceration is a contemporary and distinctly American development that disproportionately affects disadvantaged subgroups of the population. Until the mid-1970s, the incarceration rate in the United States was similar to the incarceration rate in France and Germany, in addition to other industrialized nations (Whitman 2003). Widespread shifts in policing, prosecution, and criminal justice policy at the local, state, and federal levels have fueled growth in incarceration, especially for non-violent property and drug offenders, and the growth of incarceration has been concentrated among people with low levels of education. By the late 2000s the United States incarcerated a higher fraction of its population than any other advanced-industrialized country, and the incarceration rate in the United States was more than ten times the incarceration rate in Sweden, Norway, Slovenia, Finland, and Denmark (Walmsley 2011). Among young black men without a high school diploma, imprisonment has become a normative life event (Pettit and Western 2004).

The impact of parental incarceration on children has been increasingly studied (Hagan and Dinovitzer 1999; Geller et al. 2009, 2011, 2012; Wildeman 2014, 2010; Wakefield and Wildeman 2011). Yet identifying the causal effects of incarceration on families and children is not an easy task because incarceration is so highly correlated with other markers of disadvantage. In fact, Arditti and colleagues (2012, 2005) find that families of inmates were at risk for financial and mental health instability even prior to incarceration, emphasizing how incarceration elevates the risks of hardship among the already vulnerable. Nonetheless, a growing body of evidence suggests that incarceration levies financial, social, and psychological costs that extend well beyond the individual incarcerated (Wakefield and Wildeman 2011), and that the psychological and social stigma associated with having a family member in prison or jail contributes to family complexity and undermines the social fabric of urban communities (e.g., Braman 2004).

In this article we investigate race and educational inequalities as they relate to parental incarceration, and we consider how parental imprisonment contributes to family complexity. The contours of inequality in exposure to the criminal justice system vary dramatically in relation to how parenthood is conceptualized and

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measured. Different operational definitions of a family unit may complicate national estimates of parental incarceration. Estimates that rely on definitions of parenthood as biological generate much higher rates of parental incarceration, especially among already disadvantaged groups, than estimates that define parenthood by coresidence or legal custody. Incarceration may also contribute to family complexity through its effects on marital instability, single parenthood, residential instability, noncustodial parenthood, and multiple-partner fertility. We consider how two dimensions of family complexity—noncustodial parenthood and multiple-partner fertility—relate to race and class inequality in parental incarceration. We further examine how mass incarceration may explain the reproduction of social inequality across generations through its effects on family complexity. Proposed research and policy prescriptions focus on improving the measurement of parental incarceration in national surveys and devising targeted interventions for families with a parent behind bars.

Measuring Mass Incarceration and Family Complexity

There are empirical and conceptual reasons to think that family structure and parental incarceration are highly correlated, thereby reinforcing family complexity and childhood disadvantage. Incarceration removes individuals from households, placing them in institutions that circumscribe their potential to establish or maintain meaningful relationships with partners and children. Empirical work shows that incarceration is associated with an increased risk of single parenthood, separation, and divorce (Lopoo and Western 2005); higher probabilities of repartnering (Turney and Wildeman 2013); reductions in teen and male fertility (Kamdar 2007; Sykes and Pettit 2009); and a range of adverse outcomes for children of incarcerated parents (Wakefield and Wildeman 2011). However, little theoretical work explores the ways family complexity shapes, and is shaped by, parental incarceration through mechanisms associated with measurement, coresidence, and multiple-partner fertility.

There are two primary ways that scholars estimate children's exposure to parental incarceration. The first uses demographic methods and inmate data to estimate rates and risks of having a parent incarcerated for different sociodemographic groups (Wildeman 2009; Pettit, Sykes, and Western 2009). This method begins with annual counts of inmates and relies on information from periodic surveys of inmates who self-report on the number and ages of their children to estimate the fraction of inmates who have children and, conversely, the number of children who have (or have had) a parent incarcerated. These estimates are not limited to parents who have established custody, coreside with children prior to incarceration, provide financial support for children, or have meaningful social relationships with children. In sum, estimates of exposure to parental incarceration generated from self-reports of inmates illustrate the potential reach of the criminal justice system but do not identify the meaning—or consequence—of parental incarceration for children because little is known about the incarcerated parent's relationship with his or her children.

The second way that scholars estimate children's exposure to parental incarceration is through data gathered in sample surveys of the general population, typically of children or caregivers. For example, data from the National Survey of Adolescent Health (Add Health) suggest that 15 percent of children in the United States have had a biological father in prison or jail (Hagan and Foster 2012). Data from the National Survey of Children's Health (NSCH) show that 7 percent of minor children have coresided with a parent or guardian who served time in prison or jail after her or his birth (authors' estimates; for more on this see Table 3). These types of survey data rely on child or caregiver reports about "adverse childhood experiences," including whether a child or her or his caregiver recalls that a parent had ever been incarcerated.

We hypothesize that survey-based estimates of parental incarceration will be lower than estimates derived from inmate data, and we also suspect they will exhibit less race and class inequality. One key reason is that household-based surveys are subject to acute forms of sample selection bias that exclude the most disadvantaged segments of the population and underestimate race and class inequality (Pettit 2012). Another reason to expect lower estimates from household-based surveys is that family complexity—or factors associated with noncustodial parenthood or multiple-partner fertility—might lead partners of incarcerated parents to underreport current or previous incarceration of their partner, and minors or their caregivers may not acknowledge nonresidential, or noncustodial, incarcerated parents. It may be possible that children of inmates may not know whether, when, or for how long a parent is or was incarcerated. If a child or a caregiver does not have a meaningful relationship with the criminally involved parent or former partner, the survey respondent may not know or report exposure to parental incarceration, especially if the respondent experienced stigma as a result of having a parent or partner behind bars. Insofar as noncustodial and multiple-partner fertility are disproportionately concentrated among people of color and those with low levels of education, family complexity may reduce race and class inequalities in the measurement of children's exposure to parental incarceration in household survey-based estimates.

There are important theoretical reasons to expect the relationship between family complexity and incarceration to vary across race and social class. Wilson (1987) originally posited and documented a link between the effects of unemployment, single parenthood, and incarceration on family formation in urban cities. Others argue that the loss of a father to incarceration changes the family's status to that of a single-parent family, ushering in effects similar to those brought on by the death of a parent or divorce (Hagan and Dinovitzer 1999). We contend that incarceration is likely to be associated with family complexity through its impacts on household instability and fertility. Although family complexity can be measured in a number of ways that have changed over time (Furstenberg, this volume; Manning, Brown, and Stykes, this volume), we consider how incarceration affects custodial, or residential, parenthood and multiple-partner fertility in the (re)production of complex families.

First, family complexity may be increasing as a result of diminished earnings and employment prospects associated with having spent time in prison or jail.

The inability to contribute economic resources to the household may strain family relationships, thereby making romantic and parent-child relationships more tenuous. Existing scholarship indicates that the relationship between custodial and noncustodial parents matters for child visitation and bonding, particularly for former inmates. Men's poor economic opportunities—shaped by previous contact with the criminal justice system—structure former inmates' involvement in the lives of their children (Waller 2002), with half of incarcerated fathers expected to live with their children after release (Foster and Hagan 2007). Yet fathers' involvement in their children's lives may be limited due to reduced employment prospects and the inability to contribute to the financial well-being of their children (Waller 2002; Geller et al. 2009). Geller and colleagues (2011) demonstrate that fathers' ability to contribute to the financial well-being of the family is curtailed even after release from prison or jail, increasing the risk that children of inmates will be pushed into kinship care or the foster care system (see also Freudenberg 2001). The particular family form children are likely to experience will depend on the length of parental incarceration, terms of parole, and the quality of the relationship between parents.

Second, incarceration may increase the risk of experiencing multiple-partner fertility for both released inmates and their former partners. While the stigma associated with having a criminal record may bar former inmates from housing, employment, and voting (Pager 2003; Pager and Quillian 2005; Edin and Kefalas 2005; Alexander 2010; Uggen and Manza 2002; Western 2006; Pettit 2012), reproduction may be one domain of social life where the consequences of imprisonment are limited, particularly for demographic groups where incarceration is a normative experience. Upon release, inmates may seek to normalize noneconomic and familial aspects of the life course within their control, which may include having additional children with new partners (Sykes and Pettit 2009). Life-course theories of crime show that marriage and stable unions are a turning point in lives of criminally involved men (Sampson and Laub 1995; Edin, Nelson, and Paranal 2002; Sampson, Laub, and Wimer 2006), raising the possibility that additional reproduction may follow within newly formed relationships.

Furthermore, the dissolution of marriage and cohabitation associated with incarceration (Western, Lopoo, and McLanahan 2004; Lopoo and Western 2005) may be associated with multiple-partner fertility if the unincarcerated partner has additional children with someone other than her or his incarcerated partner—during or after the inmate's jail or prison term—or if the incarcerated partner has additional children with someone other than her or his former partner; while the fertility opportunities of inmates are limited while incarcerated, upon release inmates may have children with new partners. Rates of multiple-partner fertility, therefore, may be highest among people who have experienced criminal justice contact because maintaining relationships are both financially and psychologically costly during periods of incarceration (Comfort 2008). Scholarship has yet to document trends and rates of multiple-partner fertility among inmates, and in the analyses that follow, we show growing race and class differentials in multiple-partner fertility among the incarcerated.

Data, Measures, and Methods

We begin our investigation into the relationship between mass incarceration and family complexity by providing estimates of children with a parent incarcerated, the risks of having a parent imprisoned or incarcerated during childhood, and the percentage of inmates who experience multiple-partner fertility. We compare estimates of having a parent currently incarcerated or ever imprisoned derived from inmate data with those derived from newly available, nationally representative household-based survey data, paying close attention to how race and class inequalities in family structure and living arrangements might help to explain discrepancies between sources. We then use data from periodic surveys of inmates to consider the effects of incarceration on family complexity, measured by multiple-partner fertility.

Estimates of children's exposure to having a parent incarcerated or imprisoned derived from inmate data are generated by first estimating the number and distribution of children with a parent currently incarcerated or ever imprisoned. Information about the penal population is gathered periodically from surveys of inmates, weighted in proportion to the size of the respective prison and jail population. We use data from the Survey of Inmates of Local Jails ([Survey of Jail Inmates, for 1972 and 1978], 1983, 1989, 1996, 2002), the Survey of Inmates of State Correctional Facilities (1974, 1979, 1986, 1991, 1997, 2004), and the Survey of Inmates of Federal Correctional Facilities (1991, 1997, 2004). We apply survey weights to estimate proportions of inmates who are parents of minor children within year, sex, race/ethnic, age, education, and facility groups. We linearly interpolate between survey years for these grouped data, weighted by annual Bureau of Justice Statistics counts, to construct annual estimates of the number of children exposed to parental incarceration for all sociodemographic groups. We distinguish between incarceration in local, state, or federal correctional facilities; and imprisonment, the latter of which is typically characterized by at least a year in custody in a state or federal prison.

To calculate parental incarceration rates or the lifetime risk of having a parent incarcerated, these estimates are weighted in proportion to information about population size. Information about population size comes from the March Current Population Survey (CPS). The March CPS collects data, annually, on a sample of 50,000 to 60,000 Americans living in households. The data include measures of sex, age, race, and ethnicity, and our estimates assume that the household-based population closely approximates the total population of minor children.

Household-based estimates of having had a parent incarcerated come from the 2011–2012 National Survey of Child Health (NSCH).¹ NSCH data are collected by the National Opinion Research Center (NORC) at the University of Chicago on behalf of the Centers for Disease Control and Prevention (CDC). The NSCH randomly sampled telephone numbers (cell phone and landline) to locate households with children aged 0–17, and within each household one child was randomly selected to be the subject of interview. The 2011–2012 survey includes a special supplement on adverse childhood experiences that asks

questions about parental incarceration, exposure to violence, and other markers of disadvantage. Specifically, the NSCH asks the survey respondent, “Did [Focal Child] ever live with a parent or guardian who served time in jail or prison after [Focal Child] was born?” Thus, the question represents a lifetime risk of parental incarceration, but is restricted to coresidential parents or guardians. More than 95,600 child-level interviews were completed, and when weighted, NSCH estimates represent the noninstitutionalized population of minors in the United States.

We examine multiple-partner fertility using data from Surveys of Inmates (listed above). The data measure both the number and ages of each child—up to six or ten children depending on the year the survey was administered. The age distribution of children and the sequence of age reporting are used in a new, exploratory method to estimate multiple-partner fertility in population surveys that do not inquire about the number of partners or children indexed to a particular partner.

Measures

We are particularly interested in how exposure to criminal justice contact and multiple-partner fertility varies by race and educational attainment. Race and educational attainment were coded similarly in the inmate and household-based survey data for consistency. We compare non-Hispanic whites, non-Hispanic blacks, and Hispanics. Small sample sizes preclude comprehensive analysis of other racial and ethnic groups. We code education as not completing high school (LTHS), having a high school diploma or equivalency degree (HS), and having at least some college (college). The measurement of parenthood differs across data sources. Inmate surveys ask inmates about the number and ages of their children. The surveys ask whether the inmate lived with minor children at the time of incarceration but do not ask about specific children with whom the inmate was coresiding. The household-based survey data from the NSCH, however, specifically defines parental incarceration in relation to whether a minor child *ever lived* with a parent or guardian who served time in jail or prison. We take advantage of these discrepancies in question wording to illustrate how the relationship between incarceration and family complexity varies by race and education.

Method

We begin by reporting the risk of parental incarceration in local, state, or correctional facilities. Following Glaze and Maruschak (2010), we first estimate the number of parents in prison or jail who had minor children by applying the distribution of parents found in correctional surveys to aggregate data on penal population counts from the Bureau of Justice Statistics. For each year, the estimated number of parents by gender and race is multiplied by the number of minor children reported by male and female inmates. The estimates are then summed by gender and reported as totals. We assign children the race/ethnicity of their incarcerated parent. We include tables that show the number of inmates

with minor children (0–17 years old), the total number of children, and percentage of minor children with a parent in prison or jail. We use estimates of the noninstitutionalized, or total, population (described above) to form the rates.

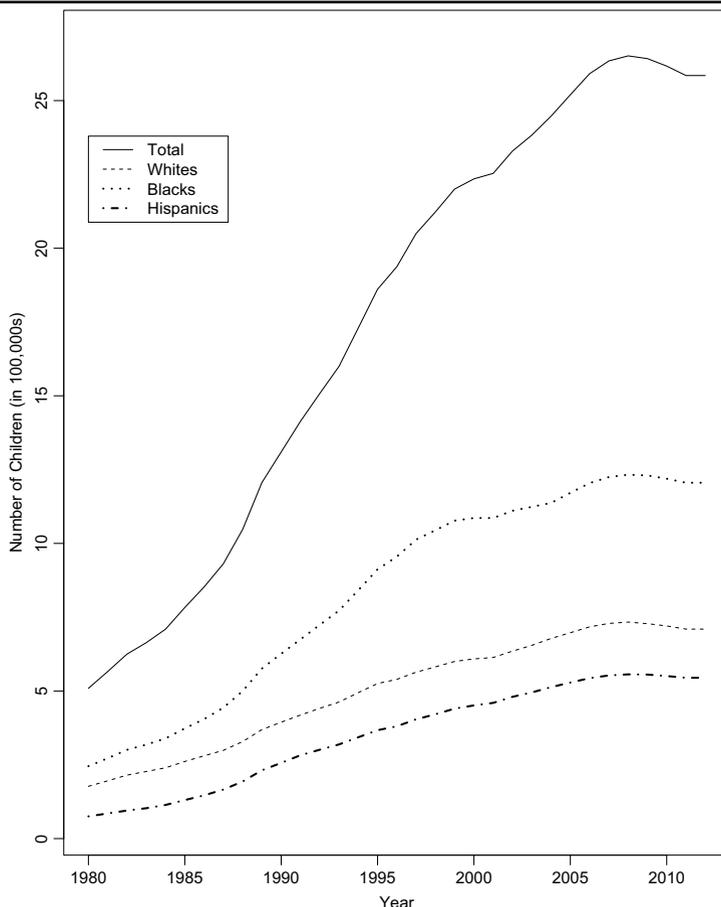
We estimate the cumulative risk of parental imprisonment for children by race/ethnicity and parental educational attainment for cohorts born since 1960–1964, making slight adjustments to methods outlined in Wildeman (2009). We follow Wildeman's method and use the Natality Detail File from National Vital Statistics Registry to generate the educational distributions of parents of children of different birth cohorts; however, we extend the age of minors at risk of experiencing parental incarceration from 14 (Wildeman 2009) to 17 (Pettit, Sykes, and Western 2009). Further details on our methodology and additional data used to produce these estimates can be found in other work (Pettit, Sykes, and Western 2009; Pettit 2012).

To estimate multiple-partner fertility, we rely on a rich set of information in the Surveys of Inmates; these surveys collect the ages of up to ten children reported by inmates. However, the inmate questionnaire does not index each child or their ages to different partners of the inmate, and there are no questions about multiple-partner fertility. Despite this limitation, we develop a new, exploratory method that takes advantage of what we call age reporting discontinuity (ARD) to estimate multiple-partner fertility in inmate surveys administered after 1980. This method is designed to estimate the number and proportion of inmates who have children with multiple partners.

ARD assumes that parents report the ages of children with each partner in a linear, ascending or descending manner (i.e., oldest to youngest or youngest to oldest) because of how they have indexed and recall each child's age with a partner. When the ages of the children become discontinuous and move in the opposite direction of initial reporting, we argue that such age discontinuities represent births with other partners. We have devised alternative ways of extending and refining this method using additional assumptions and statistical methods; however, baseline estimates of ARD are presented as discussed above.

Although multiple-partner fertility is typically defined as having two or more children with two or more partners (Guzzo, this volume), because ARD is an indirect method of detection based on trends in the age reporting of children, we require inmates to have at least three children of different ages for the detection of nonlinearities to generate conservative estimates of multiple-partner fertility. For instance, consider an inmate who has four children and reports their ages sequentially as 10, 9, 8, and 14. Our method would treat the first three ages as sequential, linear, descending reports of children with the first partner, and the last child (of age 14) as being from another partner because the 14-year-old's age is outside the preexisting trend. While it is possible that each of the four children is from a different partner, our method would detect at least one of these children based on the age reporting discontinuity. In this example, the actual incidence of multiple-partner fertility would be greater than we detect, but the overall prevalence would be closely approximated. As a heuristic, Table A1 in the appendix displays twenty-five cases of inmates reporting the ages of their children (up to ten children), the number of age reporting discontinuities, and whether the inmate is expected to have experienced multiple-partner fertility based on those discontinuities.

FIGURE 1
 Number of Minor Children with a Parent Incarcerated by
 Race, United States, 1980–2012



SOURCE: Authors’ calculations using data from the Survey of Inmates and the Bureau of Justice Statistics.

Results

The number of children in the United States with a parent incarcerated has increased fivefold since 1980 but has leveled off in recent years as incarceration rates have begun to decline. Figure 1 shows the number of minor children with a parent incarcerated by race. In 1980, roughly half a million children had a parent behind bars. By 2012, nearly 2.6 million children had at least one parent in prison or jail. While the number of children with a parent incarcerated has increased for all racial groups, black children experienced the fastest and largest growth in parental incarceration. In 1980, there were 245,000 black children with

TABLE 1
 Cumulative Risk of Parental (Paternal + Maternal) Imprisonment by Age 17 by Parents' Educational Attainment (in the Presence of Mortality)

	Total	Less than High School	High School	Some College
1980				
N-H white	0.4	1.2	0.5	0.1
N-H black	2.9	5.5	2.2	1.2
Hispanic	1.7	2.3	1.3	1.0
1990				
N-H white	1.3	3.4	1.5	0.5
N-H black	8.2	15.1	6.5	4.4
Hispanic	4.8	5.6	3.8	4.4
2000				
N-H white	3.0	7.5	3.4	1.3
N-H black	20.0	37.6	16.7	9.4
Hispanic	10.3	13.3	8.8	5.4
2009				
N-H white	3.9	14.6	3.7	1.4
N-H black	24.2	62.1	16.1	9.9
Hispanic	10.7	17.4	6.8	4.8

SOURCE: Authors' calculations using data from the Survey of Inmates, Current Population Survey, and the Bureau of Justice Statistics.

NOTE: The 1980 cohort is born 1960–1964; the 1990 cohort is born 1970–1974; the 2000 cohort is born 1980–1984; and the 2009 cohort is born 1989–1993.

a parent in custody; by 2012, that figure had more than quintupled to over 1.21 million children, only slightly less than the combined total of white and Hispanic children with a parent in prison or jail. By 2012, fully one in nine black children under age 18 had a parent in prison or jail on any given day.

The risk of having a parent imprisoned in a state or federal correctional facility for at least a year at some point during childhood has also grown over time and exhibits even greater inequality by race and education than do point-in-time estimates of incarceration. Table 1 compares the risk of parental imprisonment by age 17 for children born prior to penal expansion and for children born during its height. In 1980, less than 0.5 percent of white children and less than 3 percent of black children experienced parental imprisonment by age 17. By 2009, those numbers had increased dramatically; approximately 4 percent of white children and a quarter of black children had a parent in prison at some point in their childhood. The numbers are staggering for children with poorly educated parents. Among recent cohorts of children of high school dropouts, 14.6 percent of white and 62.0 percent of black children had a parent who went to prison before they reached age 17.

The estimates presented above suggest that recent cohorts of black children are over six times more likely to have had a parent in prison than white children.

And among those with poorly educated parents, black children are upwards of 4 times more likely than white children, and almost 3.5 times more likely than Hispanic children, to have a parent imprisoned. Our estimates suggest that roughly three out of five black children of parents who did not finish high school can expect one or both parents to spend at least a year in prison.

While data from inmates show that both point-in-time estimates of parental incarceration and the lifetime risks of parental imprisonment have increased since 1980, it is unclear whether household-based surveys produce similar estimates. Pettit (2012) shows that the institutionalization of specific segments of the population produces a form of social exclusion that distorts the progress of African American men and, in doing so, conceals significant race and class inequality in estimates of educational attainment, employment, wages, and voter participation. Yet it is unclear whether the same social exclusion in the sampling frames of household-based social surveys distorts and conceals race and class inequality in residential parenthood associated with incarceration.

Household-based survey data from the NSCH generate very different estimates of children's exposure to parental incarceration than estimates derived from inmate data (discussed above). The top panel (Panel A) of Table 2 compares estimates of parental imprisonment derived from inmate data with estimates of coresidential parental incarceration derived from household-based survey data. NSCH survey data generate significantly higher rates of parental incarceration among white children, but lower rates of parental incarceration among black and Hispanic children than estimates from inmate data suggest. Perhaps even more importantly, NSCH data show much less inequality in parental incarceration by parental education than is found in lifetime risks.

How then do we explain differences in exposure to parental imprisonment or incarceration between inmate and NSCH survey data? One possibility is that estimates derived from inmate data do not distinguish between residential and nonresidential parenthood, unlike estimates from the NSCH. Additionally, household-based sample surveys such as the NSCH may underestimate the lifetime risk of parental incarceration because children in the sample experience different exposure rates up to age 17, unlike estimates from the inmate data where we can limit incarceration or imprisonment to the last year for the age of each child. Also, differences in question wording about parental incarceration among these data sources—current (inmate) versus ever (NSCH) incarcerated—may further exacerbate differentials between these two quantities of parental incarceration, in addition to unobserved reporting errors (e.g., under-reporting due to stigma). We shed light on these questions by presenting a series of panels that attempt to reconcile exposure and measurement differences between estimates derived from inmate data and household-based NSCH survey data.

Table 2 displays the exposure of parental incarceration among minor children by the race and education of their reporting parent in both inmate and NSCH data during 2012. As discussed above, Panel A, Table 2 reports the percentage of minor children with a parent who has ever been imprisoned or incarcerated. The left side of the panel reports estimates from inmate data (also shown in Table 1), and the right side of the panel reports estimates from NSCH data.

TABLE 2
 Exposure to Parental Imprisonment from Inmate and
 NSCH Survey Data, by Race and Education

	Inmate Data			NSCH Survey		
	Non- Hispanic White	Non- Hispanic Black	Hispanic	Non- Hispanic White	Non- Hispanic Black	Hispanic
Panel A: Exposure to parental imprisonment						
Less than high school (LT HS)	14.6	62.1	17.4	17.1	19.6	7.1
HS	3.7	16.1	6.8	10.7	13.0	6.5
College	1.4	9.9	4.8	3.2	7.9	5.6
Total	3.9	24.2	10.7	6.1	11.4	6.4
Panel B: Lifetime risk of parental incarceration, adjusting for differences in exposure length in survey data						
LT HS	14.6	62.1	17.4	16.6	18.7	9.1
HS	3.7	16.1	6.8	11.8	17.6	6.3
College	1.4	9.9	4.8	3.7	8.0	5.9
Total	3.9	24.2	10.7	6.8	13.5	7.4
Panel C: Lifetime risk of parental incarceration, adjusting for coresidence in inmate data						
LT HS	10.1	46.1	13.8	16.6	18.7	9.1
HS	2.3	9.2	3.7	11.8	17.6	6.3
College	1.0	5.0	2.9	3.7	8.0	5.9
Total	2.6	15.9	7.6	6.8	13.5	7.4

SOURCE: Authors' calculations using data from the Survey of Inmates, Bureau of Justice Statistics, and the National Survey of Children Health.

Panel B considers whether the discordance between inmate and NSCH estimates of race and education inequality in incarceration is an artifact of differences in childhood exposure. Young children in sample surveys such as the NSCH are likely to have lower exposure risk to parental incarceration because of the number of person-years lived at the time of survey administration, compared to children referenced in inmate data where we can estimate the lifetime risk of parental incarceration for minors exposed to the same underlying risk. To resolve this issue, Panel B compares lifetime risks of parental incarceration by age 17, after limiting the NSCH survey data to minors ages 15–17. Overall, NSCH estimates for all race and ethnic groups increase (compared to Panel A) and come closer to estimates derived

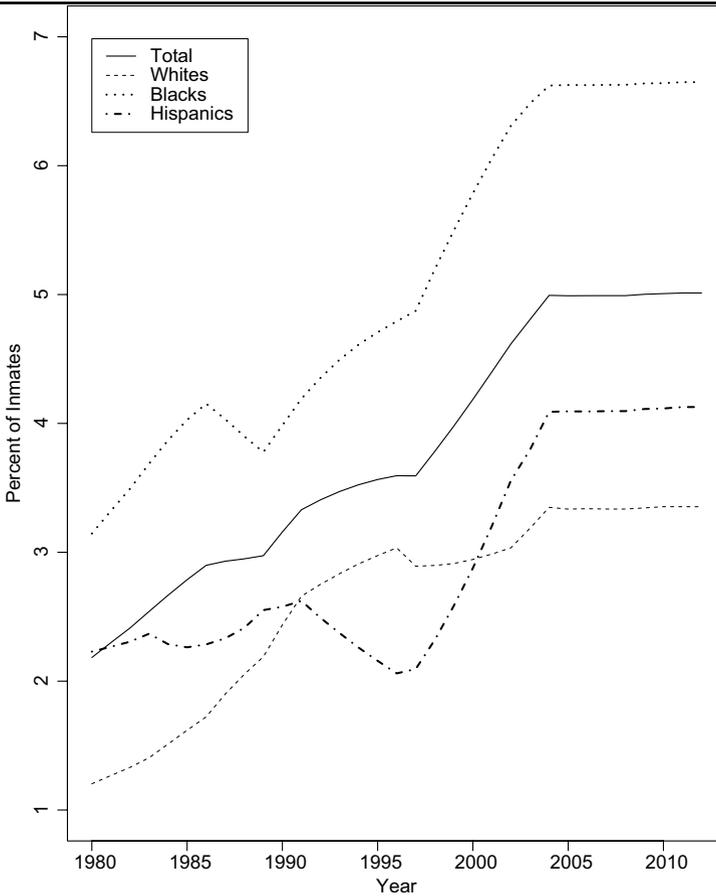
from inmate data. This adjustment, however, does little to reconcile large differences in the measurement of educational inequality in exposure to parental imprisonment or incarceration between inmate and NSCH estimates. Panel B continues to show relatively high rates of parental incarceration among whites across all education levels, relatively low rates of parental incarceration for black and Hispanic children, and dramatically lower rates of parental incarceration among black and Hispanic children with parents who have dropped out of high school.

Another possibility for discrepant estimates is that the NSCH asks about coresidential parental incarceration while inmate data do not allow us to distinguish between residential and nonresidential parental incarceration. We calculate the within race-class proportion of children who lived with their incarcerated parents in inmate data and then apply each grouped mean to the lifetime risk estimates reported in the inmate-derived quantities of Panel B. The result is Panel C, which attempts to produce more closely approximated estimates from inmate and NSCH data. In the aggregate, NSCH-derived estimates of childhood exposure to parental incarceration for black and Hispanic children are remarkably close (a 2.4-percentage-point difference for blacks and a 0.2-percentage-point difference for Hispanics) to inmate-derived estimates restricted to parents who lived with their children prior to incarceration. For whites, however, NSCH data generate estimates of parental incarceration more than double the risk estimated by inmate data, 6.8 percent compared with 2.6 percent.

Yet the illusion of measurement consistency for racial groups is overshadowed by inconsistencies in education differences. Educational inequality in measurement between sources is particularly dramatic and is consistent with arguments that emphasize acute sampling bias in household-based surveys (Pettit 2012). NSCH survey-based estimates of parental incarceration suggest relatively little educational inequality, for black and Hispanic children, in the risk of parental incarceration. Moreover, NSCH survey estimates suggest only 18.7 percent of black children with parents with less than a high school diploma will witness the incarceration of a coresidential parent, while inmate data suggest close to half will have a coresidential parent imprisoned. While it is possible that differences between inmate and NSCH survey estimates are due to the contemporaneous (inmate) and retrospective (NSCH) reporting of childhood living circumstances, it is also possible that multiple-partner fertility may explain part of the gap. For instance, an inmate may have children in multiple families, which represents one incarceration in the inmate data; however, given that household-based sample surveys exclude the most disadvantaged members of the population due to institutionalization (Pettit 2012), it is unclear whether the incarcerated parent would be reported by all families or households, thereby leading to the underreporting of parental incarceration in household-based surveys such as the NSCH.

If there are race and education differences in having births with more than one partner for inmates and their unincarcerated partners, multiple-partner fertility would explain some fraction of the associated error between estimates derived from inmate and household-based survey data, as observed in Table 2. The NSCH data do not inquire about multiple-partner fertility or the ages of each minor child in the household, but inmate data allow for such an analysis.

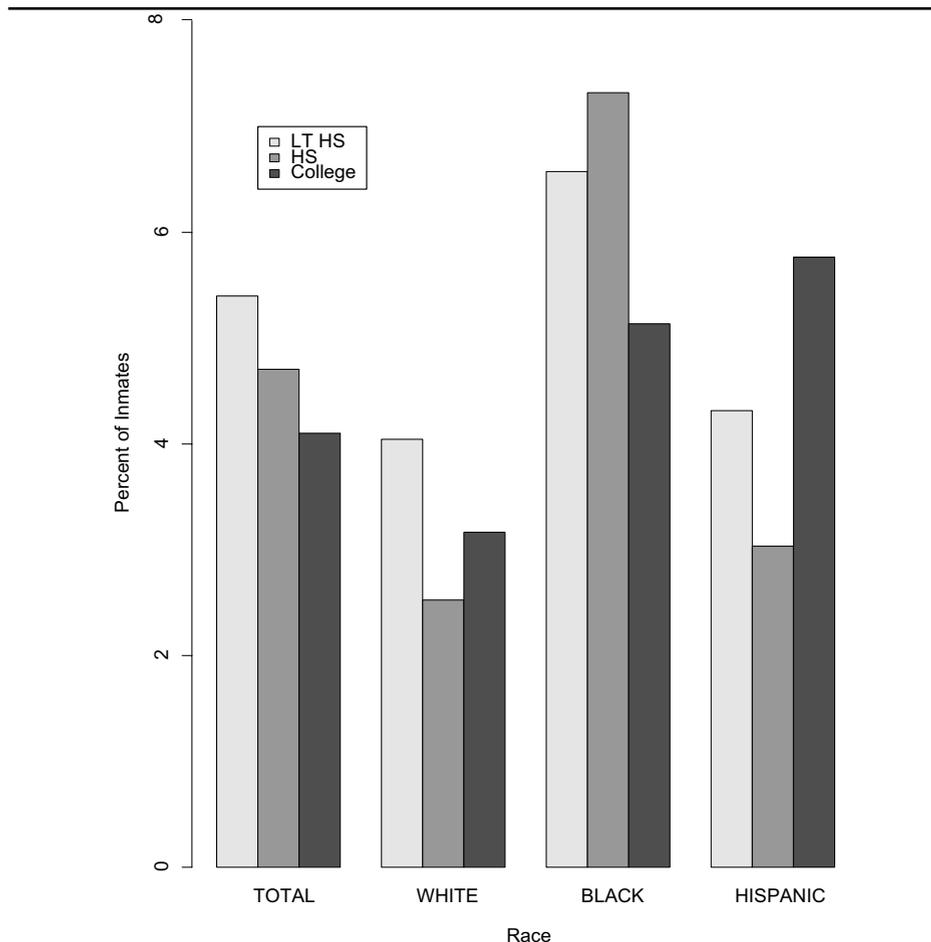
FIGURE 2
 Percentage of Inmates with Multiple Partner Births by Race, United States, 1980–2012



SOURCE: Authors' calculations using data from the Survey of Inmates and the Bureau of Justice Statistics.

Figure 2 displays the fraction of inmates who have children with multiple partners, using our ARD method. The percentage of inmates likely to have children with multiple partners has risen from approximately 2.2 percent in 1980 to 5.0 percent in 2012. This trend is driven by racial differences in both incarceration and fertility. The trend for black, incarcerated parents is almost parallel to the overall trend but is 1 to 2 percentage points (or up to 50 percent) higher in any given year. For whites, the percentage of inmates thought to have children with more than one partner is much lower, going from a little over 1.2 percent in 1980 to roughly 3.4 percent by 2012, with slight declines periodically. Among Hispanic inmates, the trend markedly departs from whites and blacks, showing a dramatic decline in the early to mid-1990s, followed by a steep surge in the late 1990s.

FIGURE 3
 Percentage of Inmates with Multiple Partner Births by
 Race and Education, United States, 2012



SOURCE: Authors' calculations using data from the Survey of Inmates and the Bureau of Justice Statistics.

Last, we document race and education inequality in multiple-partner fertility among inmates. Figure 3 presents the percentage of inmates with multiple partner births by race and education in 2012. Our indirect estimation method suggests that approximately one in nineteen incarcerated parents with less than a high school diploma has at least three children with two or more partners, compared to one in twenty-five incarcerated parents who have some college education. Although the percentage of inmates that experience multiple-partner fertility declines as educational attainment increases, race complicates the picture of multiple partner births across measures of education, with each group

exhibiting a different trend. For instance, using ARD, we estimate that blacks have the highest percentage of births with several partners, compared to whites and Hispanics; however, high school–educated black inmates are more likely to have more children with multiple partners than the least and most educated black inmates. Conversely, among whites, high school dropouts have the highest percentage of multiple-partner fertility, followed by college- and high school–educated inmates, respectively. Hispanics display another pattern, with the most educated having higher percentages of multiple-partner fertility—1.5 percentage-points (or 35 percent) larger than high school dropouts and almost double that of high school graduates.

While the distribution of multiple-partner fertility for the entire correctional population follows the educational pattern observed in other studies, the overall level is much lower than previous findings. Additionally, the race-education distributions indicate that multiple-partner fertility is greater among higher educated black and Hispanic inmates, which is also contrary to past work. Differences in findings between past work and estimates from ARD may be the result of national surveys that exclude inmates from sample selection or the stringency associated with our indirect method of measuring multiple-partner fertility. Similar to estimates presented in Table 2 on parental incarceration, future research should examine whether inmate and NSCH data—or other household-based surveys—produce similar distributions of incarceration, by race and education, and if equivalent, proceed to compare inmate-derived estimates of multiple-partner fertility using ARD (at specific parities) with estimates derived from other household-based sample surveys, such as the 2002 Male Supplement of the National Survey of Family Growth (NSFG). Point-in-time estimates between these data sources and methodologies may uncover important sources of error in both methodology and data measurement.

Conclusion and Discussion

The reach of the criminal justice system extends well beyond offenders and infiltrates the lives of their children and their families. Just as exposure to the criminal justice system is largely concentrated among black men with low levels of education, children with black or poorly educated parents are disproportionately affected by incarceration. Our estimates of parental incarceration are consistent with previously published work (Wildeman 2009; Western and Wildeman 2009). One in nine black children has a parent incarcerated on any given day, while one-quarter of black children will have a parent spend at least a year in prison. Close to two-thirds of black children who have a parent who did not finish high school will witness that parent's imprisonment. Much of the growth of incarceration and children's exposure to parental incarceration has been fuelled by the criminalization of and custodial sentences for nonviolent property and drug crimes (Tonry 1995; Western 2006; Pettit, Sykes, and Western 2009; Pettit 2012).²

A growing body of research implicates the criminal justice system in fueling family instability and reproducing inequality in family life. Although it is difficult

to disentangle the effects of incarceration from the effects of financial insecurity and instability prior to incapacitation, evidence suggests that parental incarceration has generally negative effects on family stability and indicators of child well-being (e.g., Arditti 2012). While the removal of an abusive parent is in the best interests of children, growth in incarceration has been fueled by nonviolent property and drug offenders who are increasingly likely to be characterized by having low levels of formal education rather than a proclivity to violence.

There is reason to believe that just as incarcerated men and women are stigmatized for having a criminal record long after their sentence is completed (Pager 2003; Alexander 2010), the consequences of parental incarceration are likely to affect children well into adulthood. Policies designed to punish offenders after their sentence undermine the ability of people who are criminally involved to establish stable families, contribute child support, and exercise self-sufficiency and financial independence. Former inmates are routinely disqualified from Pell grants, disqualified from housing assistance, disqualified from whole classes of jobs and occupations, and have imposed upon them fines and fees for use of the judicial system. Partners and children, both literally and figuratively, inherit the legal debts of their incarcerated loved ones (e.g., Harris, Evans, and Beckett 2010).

We are only beginning to understand the consequences of incarceration for families and children, in part, because we have only just begun to collect nationally representative data designed to investigate the implications of incarceration for families and children. Few nationally representative surveys collect information about reasons for father absence, and there are no national statistics produced on the number of children living in single-parent families because of parental incarceration. While data from the National Study of Adolescent Health (Add Health) and the Fragile Families and Child Wellbeing Study have advanced our understanding of the effects of incarceration for families with young children, there is still much we do not know and cannot understand about the consequences of incarceration for children and families from existing large-scale data sources (such as for multiple-partner fertility).

Despite slowing incarceration rates over the past few years, parental incarceration may have lasting implications for family complexity. Criminal justice policies aimed at increasing or reducing inmate populations, as well as understanding the fertility of men and women at risk of imprisonment, are important for estimating and forecasting the number of children likely to experience parental incarceration. The familial complexity introduced by mass imprisonment requires a particular public policy intervention aimed at preventing the reproduction of childhood disadvantage. Without adequate programs and policies to prevent children from slipping into poverty with parental incarceration, the vicious cycle of criminal justice contact across generations will undoubtedly maintain race and class inequality for disadvantaged families (Wildeman and Western 2010).

While children of incarcerated fathers witness parental disempowerment and must contend with the emotional and psychological effects of the abrupt removal of a parent—as well as the quasi-imprisonment associated with the many rules and procedures involved in visiting a parent in correctional facilities (Comfort

2008)—little is known about the social relationships between incarcerated and nonincarcerated parents. Nurse (2004) illustrates how incarcerated fathers' involvement in their children's lives is shaped by the children's mother and suggests that hostility between young parents can have negative implications for children; newer research finds that paternal incarceration increases the probability that the mother will repartner (Turney and Wildeman 2013). Furthermore, when placed within the context of family complexity and multiple-partner fertility, research has yet to investigate if stepsiblings and children from new unions are indirectly subjected to the effects of parental incarceration via their brothers and sisters. Put another way, does having a half brother or sister with an incarcerated parent increase the likelihood of behavioral and other challenges?

The implications of our work, particularly for multiple-partner fertility and residential parenthood, are of great importance for children and siblings who experience parental incarceration. In addition to its effects on family structure, incarceration has direct effects on child well-being. Children of incarcerated fathers are more likely to receive public assistance and more likely to experience material hardship, disruptive residential mobility, and are at greater risk for developmental outcomes such as aggressive behavior (Geller et al. 2012) and higher levels of physical aggression (Wakefield and Wildeman 2011). Boys who experience parental incarceration, for instance, are at an increased risk of developmental delays and behavioral problems (Wildeman 2010; Geller, Garfinkel, and Western 2011). The effects of paternal incarceration are not confined to aggression; children with incarcerated fathers also exhibit increased attention problems, and the experience of parental incarceration is very different and more pronounced than other forms of father absence (Geller et al. 2012).

The consequences for home life are equally compelling. Children of incarcerated parents are at significant risk of homelessness and food insecurity. A research brief on fragile families in America shows that father incarceration increases the odds of child homelessness even after accounting for a multitude of important social background characteristics such as family income, social welfare support, characteristics of the mother, and other measures of housing insecurity (Wildeman 2014). The risk of homelessness for nonwhite children is particularly high, with the odds of black youth experiencing housing instability being 144 percent larger if they have a father incarcerated compared to children who never experienced paternal incarceration. Similarly, the likelihood of food insecurity increases by 4 to 15 percentage points in households where at least one parent has been incarcerated (Cox and Wallace 2013). These markers of social disadvantage have important implications for the reproduction of poverty and inequality in America.

The increasingly complex family forms children experience matter for their childhood and adolescent development. Research shows that almost half of all youths in the correctional system have a parent in the adult system (Mumola 2000), and the likelihood of incarceration is five to six times greater among children with a parent in prison than children of never-incarcerated parents (Springer, Lynch, and Rubin 2000). Yet in households that experience multiple-partner fertility, it is unknown if children with step and half siblings who have a

parent incarcerated are more likely to experience criminal justice contact as adults, compared to step and half siblings who never experienced parental imprisonment. It could be that even more children are at risk of future criminal justice contact later in life due to the multiple-partner fertility of their parents. Such a possibility would mean that there are direct and indirect effects of parental incarceration that diffuse into and across the lives of children from various complex family forms. Given observed class differences in incarceration (Pettit and Western 2004), the consequences of parental imprisonment for these children may serve to decrease their educational attainment during adolescence (Foster and Hagan 2009; Cho 2010; Hagan and Foster 2012), thereby increasing their risk for incarceration as they transition to adulthood.

Ultimately, the trauma of viewing one's mother or father arrested, visiting her or him in prison or jail, and dealing with parental absence raises important social policy issues. First, it is important to quantify precisely the size and distribution of parental incarceration in different data sources including inmate and household-based survey data. Reconciling these divergent estimates is paramount for understanding how many children are likely to experience the markers of social disadvantage. To do so would require adding specific questions on national household-based sample surveys that concurrently gauge the social conditions of children and their parents independent of institutionalization or attachment to households. Second, researchers and policy-makers must decide on where, when, and how to target interventions in the lives of children and their siblings who have parents incarcerated. It is unclear whether interventions at school, home, or in the community can produce the greatest effectiveness in disrupting, redressing, and retarding race and class inequality in the intergenerational transmission of social disadvantage. There is some evidence that extracurricular activities, particularly in the arts, produce large, positive effects that countervail the adverse impacts of parental incarceration on childhood behavior, academic engagement, and educational outcomes of children (Sykes, Gioviano, and Piquero 2013). Other research similarly shows that there are effective parent-training programs aimed at socializing children (Piquero et al. 2009), in addition to successful programs that work to increase a child's self-control and prevent his or her involvement in aggression and delinquency (Piquero, Jennings, and Farrington 2010). Designing social policies for each childhood environment is essential for American children during an age of mass imprisonment and parental incarceration.

Appendix

TABLE A1
Age Reporting Discontinuities (ARD) in Inmate Data to Determine Multiple-Partner Fertility among Inmates

id	N_CHILD	CHILD_1	CHILD_2	CHILD_3	CHILD_4	CHILD_5	CHILD_6	CHILD_7	CHILD_8	CHILD_9	CHILD_10	N_ARD	MPF
1	4	9	2	5	6	.	.	.	.	.	.	1	1
2	6	21	18	18	14	19	10	.	.	.	.	1	1
3	4	18	25	23	27	.	.	.	.	.	.	1	1
4	6	13	11	7	29	27	26	.	.	.	.	1	1
5	6	10	10	5	3	2	7	.	.	.	.	1	1
6	4	7	6	4	5	.	.	.	.	.	.	1	1
7	6	6	5	4	13	5	7	.	.	.	.	2	1
8	5	12	9	15	7	8	.	.	.	.	.	2	1
9	5	9	5	6	3	4	.	.	.	.	.	2	1
10	5	9	6	13	8	17	.	.	.	.	.	2	1
11	8	32	35	31	39	37	40	33	34	.	.	3	1
12	10	29	20	18	21	18	22	20	19	22	19	3	1
13	9	37	31	30	36	29	31	31	29	30	.	3	1
14	0	.	.	.	.	.	.	.	.	.	.	.	.
15	0	.	.	.	.	.	.	.	.	.	.	.	.
16	1	4	.	.	.	.	.	.	.	.	.	0	0
17	1	2	.	.	.	.	.	.	.	.	.	0	0
18	1	5	.	.	.	.	.	.	.	.	.	0	0
19	2	6	2	.	.	.	.	.	.	.	.	0	0
20	3	5	4	1	.	.	.	.	.	.	.	0	0
21	4	11	9	3	2	.	.	.	.	.	.	0	0
22	2	9	8	.	.	.	.	.	.	.	.	0	0
23	6	2	5	8	11	14	16	.	.	.	.	0	0
24	5	12	10	5	4	0	.	.	.	.	.	0	0
25	4	16	14	12	10	.	.	.	.	.	.	0	0

SOURCE: Authors' coding and calculations from the Survey of Inmates data.

NOTE: N_child is the total number of children reported by the inmate; Child_1 through Child_10 are the ages of the children reported; N_ARD is the estimated number of age reporting discontinuities; and MPF is whether the inmate experienced multiple-partner fertility (1 = Y, 0 = N) based on the estimated nonlinearities in the age reporting of children (i.e., N_ARD).

Notes

1. Centers for Disease Control and Prevention, National Center for Health Statistics, State and Local Area Integrated Telephone Survey. 2011–2012 National Survey of Children's Health Frequently Asked Questions. April 2013. Available from <http://www.cdc.gov/nchs/slats/nsch.htm>.

2. These analyses are available upon request from the authors.

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