INCARCERATION AND THE
BONDS AMONG PARENTS
IN FRAGILE FAMILIES

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Abstract

This paper utilizes the Fragile Families and Child Wellbeing Study to investigate if a father's previous incarceration reduces the stability in the relationship between parents who recently had a child. Our results suggest that parents that were non-co-resident at the time of the birth of their child are 19 percent less likely to cohabit 12 months later if the father has been incarcerated. Similarly, non-co-resident couples are 37 percent less likely to be married 12 months after the birth of their child if the father has been incarcerated.

The family life of the poor has changed dramatically over the last thirty years. Rates of divorce have increased by about one-third since 1970 (Statistical Abstract of the United States, 2001, 87) and rates of non-marital childbearing have roughly doubled (McLanahan and Casper 1995, 11). Consequently, the proportion of single parents in the population increased substantially. Among low-education white women aged 25-34, about 8 percent were single parents in 1965 as compared to 19 percent in 2000. Race differences are striking. Among low-education black women aged 25-34, the percentage of single parents increased from 29 to over 50 percent in the 35 years from 1965 to 2000 (Ellwood and Jencks 2001).

Growth in the number of single parent families was matched by rapid growth in the size of the male penal population. The prison population, numbering 200,000 in 1974, increased to 1.33 million by 2001 (Mauer 1999, 20; Beck, Karberg and Harrison 2002, 1). Adding jail inmates to these figures yields a total penal population of 1.97 million inmates. These aggregate figures conceal racial and class inequality. Incarceration rates for African Americans are about seven times higher than those for whites. Non-college men are about six times more likely to be in prison than men who have gone beyond high school (Western and Pettit 2002).

Because incarceration is concentrated among young poorly-educated minority men, penal system growth over the last twenty years emerges as a prime suspect in explaining the growing number of single-parent families in disadvantaged communities. Incarceration is likely to influence the formation of single-parent families directly, by separating children from fathers who are serving time in prison

or jail. Incarceration also contributes to marital strain and makes men unattractive partners for unmarried women, weakening bonds among parents after release.

In this paper we study marriage and cohabitation among men who have been to prison or jail. Using a unique data source, the Fragile Families and Child Wellbeing Study, the analysis investigates the likelihood that a couple is married or cohabiting 12 months after the birth of a child. As the name of our survey data suggests, we study Fragile Families – defined as unmarried parents who are planning to raise their child together. Because the study is based on a sample of nonmarital births in urban areas (and a smaller comparison sample of marital births), the survey respondents are disproportionately poor, black or Hispanic, and involved in the criminal justice system.

Unusually, the Fragile Families data include information from the mothers and the fathers in the survey, providing two key advantages for studying the effects of incarceration. First, men with prison or jail records are likely to be under-represented in social survey analysis, and the Fragile Families design allows us to learn about these men by interviewing the mothers of their children. Second, self-reports of criminal activity and incarceration status may understate respondents' involvement in crime and the criminal justice system. Again, the mothers' reports of fathers' criminal justice status fills an important gap in the survey information about a hard-to-study fraction of the population.

Does Incarceration Weaken Parental Bonds?

Little is known about causal links between incarceration and family relationships, in part because there are relatively few studies of prisoners' families (Hagan and Dinovitzer 1999; Gabel 1992). Earlier research connecting families and crime focuses on the parental origins of offenders. For example, Wilson and Herrnstein (1985) studied the heritability of criminal behavior. Hagan and Palloni (1990) examined whether failed parenting causes character problems in children leading to delinquency and crime. Focusing on adult relationships, some researchers find that the social bonds of marriage reduce the risk of crime and incarceration (Laub, Nagin, and Sampson, 1998). Common to all this research is the presumption that family life affects criminal offending. Few researchers have examined whether causality flows in the other direction—whether involvement in the criminal justice system affects family relationships.

The decision of low-income mothers to marry or remarry depends in part on the economic prospects, social respectability, and trustworthiness of their potential partners (Edin 2000). Incarceration undermines all these qualities. Labor market research shows that male ex-inmates earn less and experience more unemployment than comparable men who have not been to prison or jail (Western, Kling, and Weiman 2001). If ex-inmates are stuck in low-wage or unstable jobs, their opportunities for marriage will likely be limited. Ethnographers find that the stigma of incarceration makes single mothers reluctant to marry or live with the fathers of their children if those fathers have prison or jail records (Edin 2000; Waller 1997). Ecological analysis yields similar results. Sabol and Lynch (1998) report that large

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numbers of female-headed families are found in counties receiving the most returning

prisoners. In short, the stigma and collateral consequences of incarceration shrinks

the pool of possible marriage partners.

Incarceration is also destabilizing for intact relationships. The experience of

imprisonment can produce strong feelings of shame and anger, both for inmates and

their families, providing a source of marital stress after release (Hagan and Dinovitzer

1999, 126-127). The stigma of incarceration may be diminished in communities with

high incarceration rates, but prison or jail time is still massively disruptive. Research

on veterans finds that long periods of enforced separation during military service

significantly raises the risk of divorce (e.g., Pavalko and Elder 1990). We expect that

prison and jail inmates experience similar effects. Other papers in this volume also

point to the civil disabilities associated with a felony record. Besides restricted voting

rights, ex-felons are often barred from public housing and are ineligible for welfare

benefits (Hirsch et al. 2002). Bars on public housing and welfare benefits create

significant impediments to the formation of stable unions among poor couples.

Furthermore, to the extent that incarceration raises involvement in crime or retains

ex-inmates in crime-involved peer networks, marriage and other parental relationship

will also be strained.

Although theory indicates that incarceration negatively affects family

relationships, the marriage prospects of criminal offenders are poor even without

imprisonment. Men who become involved in crime may be egocentric, have little

self-control, and have weak social connections to stable family and economic life.

All of these characteristics would make a man an unattractive partner for women and

undermine a man's commitment to a stable relationship, even in the absence of a prison record. In the data we analyze, couples are also observed at different stages in their relationships, and the risks of divorce or separation will tend to vary with the vintage of the relationship. Unobserved characteristics that are associated with the putative consequences of incarceration provide a key challenge for assessing incarceration's effects. If we fail to consider the influence of variables correlated with incarceration and marriage or cohabitation, our estimates of the incarceration effect will be biased. In sum, there are good reasons to think that incarceration erodes marital relationships, but to understand the effects of incarceration we must acknowledge that criminal offenders are relatively unlikely to form stable unions in the first place.

The Fragile Families Data

The Fragile Families and Child Wellbeing Study is a nationally representative, longitudinal survey of new (mostly unmarried) parents and their children. Data were collected in twenty U.S. cities, stratified by different labor market conditions and varying welfare and child support policy regimes. Unmarried parents were over-sampled by a ratio of about three to one. The total sample size is approximately 4,900 families including 3,700 unmarried couples and almost 1,200 married couples. The weighted data are representative of all births to parents residing in cities with populations over 200,000.

New mothers were first interviewed at the hospital within 48 hours of having given birth. About 60% of fathers were also interviewed in the hospital, and another 15% were interviewed soon after the child left the hospital.

Baseline data were collected between 1998 and 2000. Response rates were 87% for unwed mothers, 82% for married mothers, 88% for married fathers, and 75% for unmarried fathers. The first-year follow-up survey also had high response rates. Among parents who participated in the baseline survey, about 90% of unmarried mothers, 92% of married mothers, 86% of married fathers, and 78% of unmarried fathers participated in the 12-month interview.

The design of the Fragile Families study has several benefits for examining the relationship between fathers' incarceration and family relationships. By following fathers as well as mothers, the capabilities and experiences (including incarceration) of fathers can be studied directly and mother-father relationships can be studied from two points of view. In our analysis below we study the effects of characteristics of mothers and fathers, and the relationship between parents.

Cohabitation and Marriage in Fragile Families

The Fragile Families survey provides detailed information about the status of new parents' relationships. In addition to marital status, the survey records whether the parents are living together or, if not living together, whether they remain on romantic or friendly terms. This information is recorded at the baseline interview when the child is born, and again at the follow-up interview 12 months later. Because our interest centers on the stability of parental relationships, we examine patterns of

marriage and cohabitation at the follow-up interview, controlling for a couple's

relationship status one year earlier.

[Table 1 about here]

Table 1 reports descriptive statistics on relationship status by the race/ethnicity of

the father. The table shows strong race and ethnic differences in marriage rates.[1]

Only 19% of African American fathers are married at the follow-up interview

compared to 33.7% of Hispanics and 60.9% of non-African American, non-

Hispanics. African American fathers are also involved in less stable relationships over

the 12 months from baseline to follow-up. A third of cohabiting couples with black

fathers had dissolved within a year of their child's birth, compared to around 20%

among other couples. Separation rates for married couples, although low, were also

relatively high among black fathers.

Incarceration in Fragile Families

In addition to collecting information about marriage and cohabitation, the Fragile

Families survey recorded information on fathers' contacts with the criminal justice

system.[2] In particular, fathers were asked if they ever served time in a correctional

facility and when they were most recently released. Interviews completed in prisons

or jails were also identified in the survey. Because only a small proportion of

interviews were recorded in correctional facilities, most of our information about

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[1] Recall that the Fragile Families design over-sampled unmarried parents by 3 to 1. Thus the percentage of married parents in these data is much lower than in the population as a whole.
[2] All men imprisoned at the time of the 12-month survey were removed from the analysis as they would obviously be non-resident and have had criminal justice system contact. In addition, all families with one deceased parent were removed from the analysis.

men's imprisonment status is taken from self-reports. A difficulty with these data is that crime and criminal justice system contact may not be completely observed.

Incarceration might be under-observed in two ways. First, some men may be unwilling to record their criminal justice status with the survey interviewer. There is evidence that serious offenses like theft and burglary, and minor offenses, like disturbing public order tend to be under-reported (Babinski et al. 2001; Nagin et al. 1995). Second, criminal offenders are difficult to locate and interview using the standard household sampling frames of survey research. Poor, young, and minority men tend to be under-counted by social surveys; the likelihood of under-sampling is particularly high among men who are involved in crime (Hagan and McCarthy 1997).

Under-reports of crime and undercounting of severe offenders in sample surveys leads to under-estimates of the effects of incarceration. With reporting bias, severe offenders who have been incarcerated would be mistakenly included in the comparison group of non-offenders. Differences between self-reported offenders and non-offenders would be reduced, as a result. Undercounting may also reduce estimated incarceration effects, because those at risk of the longest sentences and the most severe incarceration experiences are missing from the survey data.

[Table 2 about here]

The design of Fragile Families offers some protection against these problems because information about men's incarceration status is obtained from both the male and female respondents in the survey. Data obtained from mothers may improve the measurement of incarceration among fathers. In cases where men report they have never been incarcerated, their partners agree 76% to 91% of the time (Table 2).

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Although this pattern is consistent with the under-reporting of criminal involvement by men found in other research, we should be careful not to simply treat women's reports as having greater validity. For example, women report no incarceration in about 30% of cases where men acknowledge having been to prison or jail. In these cases, it is unlikely that women's reports are more accurate.[3] Consistent with high levels of criminal involvement among under-counted men, women reported that 34.1% (252/738) of the men who were not located for a follow-up interview had been incarcerated. This rate was particularly high among African Americans where 40% of unlocated fathers had been incarcerated.

The validity of the data deserves close consideration where women report that men have been incarcerated, but men deny having ever spent time in prison or jail. In these cases, mothers' accounts of fathers' incarceration may just be flagging bad relationships in which women have little confidence in their partners. We can examine this by studying the reports of incarceration among subsets of fathers who are at risk of crime and involved in bad relationships. We measure father's risk of criminal behavior with items recording his drug and alcohol abuse, and violent behavior. Relationship quality is measured by items indicating fathers who compromise in disagreements, are affectionate, are critical of their partners, and are encouraging of their partners.

[Table 3 about here]

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[3] An independent check on the validity of the incarceration reports might be obtained by a criminal background check on the male survey respondents. Such checks are planned for future research if sufficient consent can be obtained from the respondents.

Table 3 shows that fathers who abuse drugs or alcohol or who are violent, are relatively unlikely to agree with their partners that they have been to prison or jail. Over 20 percent of fathers at high risk of crime disagree with their partners and deny prior incarceration. The results are strongest for violent fathers. In 22.5 percent of cases, violent fathers report no prior incarceration in contrast to the mother's report that fathers had previously been in prison or jail. Couples in poor relationships are more likely to agree about incarceration status, than couples with crime-involved men. For example, men who criticize their partners are no more likely to disagree with their partners about incarceration status than the sample average. The frequency of discrepancies in reported incarceration status is higher in couples with fathers who are discouraging, unaffectionate, or uncompromising. For these couples in poor relationships, however, the frequency of prior incarcerations reported only by mothers remains lower than in couples where the father is involved in crime. A similar pattern of results is provided by men who were not interviewed at baseline. Among non-interviewed men, mothers are more likely to report incarceration for those who are at risk of crime than those in poor relationships. These results support the idea that mother's reports of fathers' incarceration are more likely to indicate criminal offenders in the sample, rather than men involved in troubled relationships.

In the data analysis below we make extensive use of women's reports on prior incarceration status. Men are treated as having been incarcerated if either they report their own prior incarceration, or if the mothers of their children report their prior incarceration. This measurement strategy hopefully reduces the error resulting from survey non-response and men's reporting bias. Coding prior incarceration status in

this way indicates that over one-quarter (27.7%) of the fathers in the Fragile Families

Study have spent some time in prison or jail.

Methods

To study marriage and cohabitation at the follow-up interview we fit multinomial

logistic regressions to a three-category measure of relationship status.[4] The

relationship status variable indicates couples that, at the 12-month follow-up

interview, are (1) not living together, (2) living together, but not married, and (3)

married and living together. Our key predictor is a dummy variable indicating

whether the father was previously incarcerated, according to either the mother's or

father's reports. The sample data consists of couples in which both parents were

interviewed at baseline and the mother was interviewed at 12 months. All variables

were measured at baseline, except for incarceration and relationship status at 12

months.

   We adopt several strategies to control for selection effects due to the non-random

distribution of incarceration. First, in predicting relationship status at the 12-month

interview, we control for relationship status at baseline. This variable will certainly

reflect information about the vintage of the relationship and capture other

characteristics of offenders that affect their fortunes on the marriage market. The

utility of baseline relationship status in helping to identify the causal effect of

incarceration is indicated by its large correlation with the dependent variable and the

treatment variable, incarcerations status. Although most of our variables are measured

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[4] The multinomial logit model assumes that the response categories are conditionally independent (the assumption of the independence of irrelevant alternatives). A Hausman (1978) specification test indicated the data's consistency with this assumption.

at a single time point, we thus use information about relationship status at two time points to help adjust for differences between offenders and non-offenders.

Second, we control for selection on observed characteristics by adding successive sets of independent variables that are correlated both with relationship status and men's propensity to crime and imprisonment. The first set of controls, adjusts for demographic characteristics – the race, ethnicity, and education of the couple and a dummy variable indicating if this was the mother's first birth at the initial interview. Because men with weak attachments to regular work are more prone to crime and unattractive marriage partners, we next control for the mother's report of the father's employment in the year prior to the birth. Crime-involved men, may also make unsuitable partners because they lack the relationship skills necessary to sustain a relationship. Such skills might be undermined by membership in same-sex peer networks and weak attachments to maternal figures in childhood and adolescence. To capture these relationship skills we measure whether the fathers (as reported by the mothers at baseline) in the survey are open to compromise with the mothers, whether they show affection, are likely to criticize the mothers, or are likely to encourage the mother. Finally, in an effort to tap the aggression or low self-control of crime-involved men we also control for men's drug and alcohol use and violent behavior in the relationship.[5]

In some ways, our approach leads to a conservative test of the effects of incarceration on marriage and cohabitation. We treat characteristics like employment

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[5] Fathers were identified as abusing drugs or alcohol if they reported that they had used drugs in the past 3 months or if they drank daily. Fathers were also identified as abusing alcohol if the mother reported that his alcohol or drug use limits his work or friends. Fathers were identified as violent if mother reported that the father hit or slapped her often or sometimes when he was angry.

status and relationship quality as confounding variables that characterize pre-existing deficits in ex-inmates that create obstacles to sustaining family relationships. However, incarceration erodes employment and relationship quality, indirectly contributing to the instability of parental unions. Our data do not let us separate that part of employment, say, that is due to incarceration and that part that is due to a low pre-existing level of productivity. Instead, we assume that all of a man's employability captured in our data reflects characteristics that pre-date incarceration. Similarly, we treat relationship status at baseline as a potential source of bias in estimating the impact of incarceration, but if incarceration affects a relationship at follow-up it is also likely to affect that relationship a year earlier. We will tend to under-estimate the effect of incarceration to the extent that relationship status, employment, and relationship quality are themselves influenced by time in prison or jail.

We take this conservative approach because crime-involved men are likely to bring very significant, observed and unobserved, deficits into family relationships which pose a significant threat to causal inference about the effects of incarceration. From our viewpoint, positive evidence from a relatively stringent test will be more compelling than similar evidence from a weaker test, even if we are led to understate the impact of incarceration.

An alternative approach to the problem of assessing the causal effect of incarceration on union stability involves restricting the analysis to men who are comparable in all respects, except incarceration status. Differences in union stability can then plausibly be related to prior involvement in the criminal justice system and

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not other variables. If we estimate the propensity of each man in the sample to have been to prison or jail, we can divide the sample into groups of men who share similar a priori risks of incarceration. This analysis, based on propensity scores, can yield consistent estimates of causal effects (Rosenbaum 1999). We estimate the propensity of each man in the sample to have been incarcerated as a function of race and ethnicity, age, education, and city of interview. Below we report a propensity score analysis that estimates the incarceration effect on union stability for sample strata that share a similar probability of having been to prison.

[Table 4 about here]

Descriptive statistics for the independent variables, by incarceration status are reported in Table 4. Descriptive statistics show that couples with a male ex-convict are very unlikely to be living together at baseline. In couples where the father has been to prison or jail, only about 53% are living together or married compared to 70% of couples without an ex-inmate father. Consistent with data on racial disparities in incarceration, most of the ex-inmates in the survey (59.3%) are African-American. Men with prison records tend to be slightly younger than the sample average. They also have lower levels of education. The vast majority (81.3%) of men that have been to prison have only a high school education. The economic situation of ex-inmates also appears to be weaker than the sample average, showing lower levels of employment in the previous year. As we would expect, ex-inmates also score relatively poorly on variables measuring relationship skills. While the mothers report that 57% of fathers who have never been incarcerated are willing to compromise, they report that only 44% of ex-inmates demonstrate this trait. Men involved in crime are

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also relatively more likely to be violent and to insult or criticize their partner. Perhaps most striking of all, men with criminal records are more than twice as likely as non-offenders to abuse drugs or alcohol.

Regression Results

Regression results for the full sample are reported in Table 5 for the five different models described above. The table reports the predicted probability of cohabitation or marriage for a hypothetical couple in which the father has never been incarcerated and is not living with the mother at the time the child is born. The incarceration effect gives the change in the predicted probability of cohabitation or marriage associated with spending time in prison or jail. For example, in the simplest model that controls only for the baseline relationship status, the predicted probability of cohabitation a year after a child's birth is .247 for couples with a nonresident father at baseline. Incarceration is estimated to reduce this probability by .063 from .247 to .184. In short, under the baseline model incarceration is estimated to reduce the likelihood of cohabitation by about 25% (.063/.247). Adding demographic characteristics to the baseline specification -- race and ethnicity, education, and an indicator for parity -- has little impact on the incarceration effect. When father's employment status is added to the model, the incarceration effect declines to -.058, about 22% of the predicted probability for couples with a non-incarcerated father. This suggests that at least some of the incarceration effect on cohabitation in the simpler models is due to the relatively low employability of men who go to prison. Adding measures of relationship quality further reduces the estimated incarceration

effect. Under the most complete specification which includes all covariates including controls for drug and alcohol abuse and partner violence, incarceration is estimated to reduce the probability of cohabitation by about .055, or about 19% of the probability for a couple with a never-incarcerated father.

[Table 5 about here]

The pattern of results is slightly different for marital instability. The baseline model (Model 1) shows that the probability of marriage for a couple that is not living together at baseline, is extremely low, just 5.9%. Even though marriage is very unlikely for such couples, incarceration is still estimated to produce a significant reduction in the likelihood of marriage. Under the simplest model (1), we estimate that incarceration reduces the probability of marriage by .031. That is, incarceration roughly halves the likelihood of marriage (.031/.059). This relative effect of incarceration on marriage becomes smaller when other variables are controlled, but the incarceration effect is always statistically significant. In the full model that includes controls for demographic characteristics, father's employment status, measures of relationship quality, and measures of deviant behavior, incarceration is estimated to reduce the probability of marriage by .029. Under the full model, the estimated probability of marriage for a couple with a non-incarcerated father is .079, so incarceration reduces the probability of marriage by about 37% (.029/.079).

Have the control variables successfully adjusted for the non-random distribution of incarceration across the population? The results for cohabitation and marriage suggest that controlling for observed variables, in addition to relationship status at baseline, adds a little explanatory power and slightly reduces the estimated effect of

incarceration. Of course, the estimated incarceration effect may still be confounded with unobserved variables, but we are somewhat reassured that the results are robust for different sets of control variables.

[Table 6 about here]

We can also check on the robustness of the results, by repeating the analysis for different race and ethnic groups (Table 6). If the results for the full sample are being driven just by African Americans, for example, the disaggregated analysis will indicate non-significant results for whites and Hispanics. The effects of incarceration are generally robust across race and ethnic groups. Effects in Table 5 are substantively large in most cases, and only statistically insignificant for blacks, in the case of cohabitation, and for Hispanics in the case of marriage.

These disaggregated results also suggest some key differences in the effects of incarceration. In couples with black fathers, the estimates indicate that incarceration does not significantly reduce the likelihood of cohabitation. If a father has been incarcerated, however, we estimate that the probability of marriage 12 months after the birth of his child is reduced by about 46% (.02/.043). The absolute magnitude of the effect is quite small because marriage is very rare in this group. A different pattern of results can be seen for whites and Hispanics. For white fathers, the effects of incarceration are similar for cohabitation and marriage. In both cases, incarceration is expected to reduce the probability of co-residence by about 40% (.086/.206 for cohabitation and .062/.145 for marriage). For Hispanics, the pattern of results is the opposite of that found for blacks. For blacks, our results indicated that incarceration created a bar for marriage, but not cohabitation. For Hispanics, incarcerated fathers

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are relatively unlikely to be cohabiting, but they marry at much the same rate as fathers who have not been incarcerated.

These results imply that the stigmatic effects of incarceration vary across race and ethnic groups. Because incarceration is common in the poor, African American communities, ex-inmate status may provide a much weaker signal of exceptional unreliability. Put differently, if a woman living in a large city strongly desires co-residence with the father of her child, and he is black, she may have no choice but to discount his incarceration status. The relatively high marriage rate for Hispanic fathers with prison or jail records is harder to interpret. This result may simply be attributable to sampling variability, as pooled analysis shows that the difference in effect for Hispanics whites is not statistically significant.

[Table 7 about here]

A further test of the effects of incarceration is provided by the propensity score analysis which uses predicted probabilities of incarceration for all men to restrict the regression analysis to strata sharing similar propensities to having prison or jail records. Due to numerical instability of the results, only union status at baseline is controlled for these estimates. Baseline status absorbs most of the variation in other covariates, so little is lost by fitting this simple model.

Benchmark probabilities and marginal effects for different quintiles of the propensity score are similar to those obtained for the full sample (Table 7). The estimates indicate that the probability of cohabitation is reduced the most among men with the lowest propensity to be incarcerated. For the three lowest quintiles, incarceration reduces the probability of cohabitation by between a quarter and a third

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among men who are non-resident at baseline. Two out of three of these results are statistically significant, or nearly so, at conventional levels. In the two highest quintiles, incarceration significantly reduces the probability cohabitation by about one-fifth. As before, the proportionate effects of incarceration are larger on marriage than cohabitation. In every propensity score quintile, incarceration is estimated to reduce the probability of marriage by between 40 and 50 percent. In the second quintile, for example, couples that are unmarried at the birth of their child have a 9.1 percent chance of marriage over the next 12 months. If the man has been incarcerated, however, this probability of marriage falls from 9.1 to 5.2 percent. All the estimated incarceration effects on marriage are statistically significant in the propensity score analysis.

The Aggregate Effect of Incarceration on Marriage Rates

The Fragile Families data are informative about the effects of incarceration on marriage and cohabitation, but relatively uninformative about the aggregate effects of incarceration on marriage rates in the population. This is because the marriage rate in the survey was fixed by the sampling design. To estimate the aggregate effects of incarceration on marriage rates in the general population, we can combine our estimated incarceration effects with population statistics on the risks of incarceration and marriage rates. To tailor our analysis to the Fragile Families sample, we focus just on black and white men, aged 30-34, with children, living in metropolitan areas. Using data from the Current Population Survey (1999), we estimate marriage rates for all these men, those without college education, and high school dropouts. Pettit and

Western (2001) estimate cumulative risks of prison incarceration for this birth cohort, at these levels of education. Given data on observed marriage rates, incarceration risks, and the effects of incarceration on marriage, we can calculate the marriage rate we would expect to observe if the risk of incarceration were zero.

This exercise necessarily relies on some strong assumptions. We assume that incarceration risks calculated for the general population are the same as those for men with children. This assumption about incarceration risks is likely to be reasonable because rates of parenthood among inmates are similar to those for the general population at the same levels of age and education. We also assume that the effects of incarceration on marriage, estimated for men with newborn children, are generalizable to men with older children. It is difficult to assess the realism of this assumption, although it seems reasonable to believe that a child's birth temporarily lowers the risk of divorce or separation. If this is true, the incarceration effect estimated for the new parents of the Fragile Families Study might conservatively estimate the incarceration effect on marriage for couples with older children. In any case, our estimates of hypothetical marriage rates at zero incarceration should be interpreted cautiously as a way of quantifying the macro-level implications of our micro-level effects.

[Table 8 about here]

The observed and adjusted marriage rates are reported in Table 8. Given the incarceration effects estimated above, the overall marriage rate for black urban fathers is estimated to increase by about 12% from .40 to .45, in contrast to a 2% increase for white fathers to .594. The racial disparity in incarceration increases the white-black

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difference in marriage and our calculations suggest that the race gap in marriage would decline by about 20% if the incarceration risk were zero. Slightly larger aggregate effects of incarceration on marriage rates are obtained if we examine men with no college education. In this case, the white-black difference in marriage rates is calculated to fall by one-quarter to .15, under a no-incarceration regime. While these effects are reasonably large, we see an extremely large influence of incarceration at the very bottom of the education distribution, among men who have not finished high school. We calculate that marriage rates would increase by about 45% higher among black male dropouts with children, if they faced no risk of incarceration. The white-black difference in marriage rates would be nearly halved, by reducing the incarceration rate to zero. We caution again, that considerable uncertainty accompanies these estimates, but the calculations do suggest potentially large aggregate effects of incarceration on marriage among low-education African American parents in urban areas.

Discussion

This paper has shown that men who have been incarcerated are much less likely to marry or cohabit twelve months after the birth of their children than men who have not been incarcerated. Strong associations between incarceration and non-residence among fathers persist, even after controls are introduced for demographic characteristics, economic variables, relationship skills, and fathers' violence and drug and alcohol abuse. The analysis provides strong evidence that the relative effects of incarceration on marriage and cohabitation are relatively large, on the order of 20 to

40%. The relative effects of incarceration tend to be largest for marriage. Although marriage rates in the Fragile Families data are generally quite low, marriage among ex-inmates is exceedingly rare. This suggests that incarceration creates a much more substantial barrier to marriage than to cohabitation. The results indicate that mothers require more of marriage partners than cohabitation partners (Gibson, Edin, and McLanahan 2002); the stigmatic effects of incarceration are relatively small in the case of cohabitation. At the aggregate level, our simulation exercise pointed to the large negative effects of incarceration on aggregate marriage rates of black parents with very low levels of education.

The analysis also suggests the utility of survey data for studying the social impacts of crime and punishment. Survey data are often seen as presenting two main problems. Self-reports of criminal activity tends to miss more severe offenses, and the household sampling frames of social surveys tend to undercount young socially marginal men who are the most likely to be involved in crime. Against these limitations, special features of the Fragile Families survey have been useful for studying the effects of incarceration. In particular the use of mother's reports of father's incarceration status appears to provide a significantly more complete accounting of the criminal histories of the men in the survey.

More generally, the data analysis indicates the disruptive effects of incarceration on the life course, on the partners and children of ex-inmates, and the public safety of communities absorbing large numbers of returning prison and jail inmates. The data analysis provides evidence of low rates of marriage and cohabitation among ex-inmates both at the time of the birth of the child, and twelve months following the

birth. These results indicate that incarceration is associated with a delayed and disorderly passage through the life course. Marriage and cohabitation apparently occur later, if at all, for ex-convicts. Stable unions for ex-convicts with children also appear to be relatively unusual.

Although incarceration is disruptive for family relationships, it is difficult to judge whether mothers and their children are necessarily worse off without male ex-convicts in the household. Although a substantial body of research finds that father absence is a key cause of child poverty, ex-convicts may have little to offer their children or the mothers of their children. The data analysis shows that men who have been to prison or jail have lower rates of employment and education. They also have poor relationship skills and are more likely to abuse drugs or alcohol and more likely to be violent. Skeptics might argue that such men can provide few of the economic or social supports necessary to improve child well-being.

This argument certainly has merit but it should be qualified in at least two ways. First, many of the economic and social deficits that we associate with ex-convicts are partly products of the experience of incarceration. Serving time in prison or jail exacerbates behavioral problems, limits educational opportunities, and raises the risks of unemployment (e.g., Hagan and Dinovtzer 1999; Western, Kling, and Weiman 2001). Although we treated behavioral characteristics, education, and unemployment as rival sources of variation for the effects of incarceration, the observed deficits of ex-inmates also reflect the consequences of imprisonment.

Second, marriage itself can contribute substantially to desistance from crime (Laub, Nagin, and Sampson 1998). Strong marital bonds help routinize pro-social

behavior and draw men out of the same-sex peer networks that form the social context for criminal offending. A strong marriage thus represents an important step away from a life in crime. Without supports that can compensate for the deficits caused by incarceration and help rebuild marriage markets, poor communities risk being stuck in a high-crime/low-marriage equilibrium. Women in such communities will be understandably averse to marriage because their potential partners bring few social or economic benefits to the table. Men, who remain unmarried or unattached to stable households, are likely to continue their criminal involvement.

In the high-crime/low-marriage equilibrium, incarceration poses a threat to public safety by undermining the crime-preventive effects of marriage. Does the indirect effect of incarceration on crime, through the intervening influence of marriage, outweigh the simple gain in public safety obtained by incapacitating criminals? The answer depends in part on the mix of offenders in any particular community. Research shows that locking up drug offenders does little to reduce crime, although locking up property or violent offenders may produce larger gains in public safety (D'Iulio and Piehl 1995; Zimring and Hawkins1995). In any event, the pool of released offenders in the community is much larger than the population actually incarcerated. For example, in 1999, the prison incarceration rate among non-college black men born 1965-1969 was about 17%, whereas the pool of men that had ever served time in prison was 30% (Pettit and Western 2001). The relatively large pool of ex-offenders, subject to the post-release effects of incarceration, may well overshadow the much smaller pool of current prisoners who are deterred from crime by incapacitation. In sum, we cannot quite conclude that incarceration is a self-

defeating strategy for public safety; but neither should we think that locking up large numbers of criminal offenders necessarily makes communities safer or socially stable.

Finally, we should also be careful about measuring the effects of the prison boom purely in terms of its ultimate effects on crime. The Fragile Families data provides a clear indication that rising imprisonment rates have reduced marriage rates in communities with large numbers of ex-inmates. The secondary effects of low marriage rates extend well beyond the province of crime to influence the economic and physical health of mothers and children, and the social well-being of subsequent generations. While we cannot say for sure that the prison boom has improved public safety in high-crime communities, the negative collateral consequences are almost certainly more far-reaching.

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Table 1. Relationship status at 12-month follow-up interview, by relationship status at baseline interview and father's race/ethnicity, Fragile Families and Child Well-Being Study, 1999-2001.

Follow-up Status	Baseline Status			Total at Follow-up
	Non-Resident	Cohabiting	Married	
African American				
Non-Resident	74.3%	33.4%	7.5%	50.0%
Cohabiting	22.4	55.3	.7	31.0
Married	3.3	11.3	91.8	19.1
Total	100.0	100.0	100.0	100.1
N	912	657	268	1837
Hispanic				
Non-Resident	66.9%	20.2%	2.8%	28.1%
Cohabiting	24.3	62.0	2.8	38.2
Married	8.8	17.8	94.4	33.7
Total	100.0	100.0	100.0	100.0
N	272	534	251	1057
Non-African American, Non-Hispanic				
Non-Resident	75.4%	22.6%	3.0%	19.2%
Cohabiting	18.8	56.9	.4	19.9
Married	5.8	20.5	96.6	60.9
Total	100.0	100.0	100.0	100.0
N	138	288	537	963

Note: Cell entries are based on mother's reports of relationship status in the baseline and follow-up surveys.

Table 2. Percentage distribution of men who have served time in prison
or jail, mother's and father's reports, Fragile Families Study of Child
Wellbeing, 1999-2001.

Mother's	Father's Report			
Report	Non-interview	No prison/jail	Prison/jail	Total
African American				
Non-interview	0.0%	4.8%	6.0%	3.8%
No prison/jail	59.7	76.0	31.9	66.5
Prison/jail	40.3	19.2	62.1	29.7
Total	100.0	100.0	100.0	100.0
N	432	1170	235	1837
Hispanic				
Non-interview	0.0%	2.1%	2.7%	1.8%
No prison/jail	70.6	81.3	27.4	75.7
Prison/jail	29.4	16.6	69.9	22.5
Total	100.0	100.0	100.0	100.0
N	187	797	73	1057
Non-African American, Non-Hispanic				
Non-interview	0.0%	1.2%	4.3%	1.4%
No prison/jail	80.7	90.9	28.0	83.6
Prison/jail	19.3	7.9	67.7	15.1
Total	100.0	100.0	100.0	100.0
N	119	751	93	963

Table 3. Differences in Mother's and Father's Reports of Father's Prior
Incarceration Status by measures of criminality and relationship
quality.

Incarceration According to:	Respondents Agree		Respondents Disagree			Father Missing	
Mother	Yes	No	Yes	No		Yes	
Father	Yes	No	No	Yes	N	–	N
Full Sample							
	8.6%	73.6%	13.8%	4.0%	3017	34.1%	738
Drug/Alcohol Abuse							
Yes	16.5	57.1	21.1	5.4	503	53.4	103
No	7.0	77.0	12.2	3.8	2475	30.6	608
Violent							
Yes	17.5	57.5	22.5	2.5	80	48.5	80
No	8.6	73.7	13.6	4.1	2786	33.9	676
Compromises							
Yes	7.7	77.4	11.3	3.6	1620	26.0	296
No	10.3	67.9	17.1	4.7	1244	41.3	407
Affectionate							
Yes	8.4	75.0	12.5	4.1	2318	29.7	464
No	10.8	65.8	19.6	3.8	546	42.9	240
Critical							
Yes	8.5	73.7	13.5	4.2	2784	34.6	29
No	18.8	57.6	23.5	0.0	85	34.5	680
Encouraging							
Yes	8.2	75.9	12.0	3.9	2180	29.6	436
No	10.9	65.0	19.6	4.5	688	42.6	272

Table 4. Means of independent variables for regression analysis by incarceration status, Fragile Families Study of Child Wellbeing.

| | | Ever Incarcerated | |
| | | Yes | No |
Variable	Full Sample	Yes	No
Married at Baseline	.273	.085	.345
Cohabiting at Baseline	.382	.441	.360
First Birth	.387	.353	.401
Father's Characteristics			
Black	.476	.593	.431
Hispanic	.274	.243	.286
White	.206	.133	.234
Other	.044	.031	.049
Age	28.013	26.569	28.567
Less Than HS	.309	.419	.275
HS Education	.341	.394	.320
Some College	.235	.174	.258
College Graduate	.115	.013	.154
Worked Last Year	.819	.762	.841
Will Compromise	.535	.437	.574
Expresses Affection	.778	.716	.803
Insults/Criticizes	.968	.955	.973
Encourages	.731	.649	.763
Abuses Drugs/Alcohol	.166	.267	.127
Violent when Angry	.032	.051	.024
Mother's Characteristics			
Black	.459	.565	.419
Hispanic	.270	.234	.283
White	.231	.174	.252
Other	.040	.026	.046
Age	25.382	23.613	26.059
Less Than HS	.320	.428	.279
HS Education	.303	.350	.285
Some College	.256	.201	.277
College Graduate	.121	.021	.159
N	3867	1070	2797

Table 5. Estimates of the marginal effects of incarceration on the probabilities of cohabitation and marriage, full Sample, Fragile Families and Child Wellbeing Study. Omitted category is non-coresident.

	Cohabitation		Marriage		
Controlling for:	Predicted Probability	Incarceration Effect	Predicted Probability	Incarceration Effect	N
(1) Relationship at baseline	.247	−.063 (.015)	.059	−.031 (.006)	3867
(2) Race, ethnicity, education, first birth	.254	−.063 (.016)	.070	−.029 (.007)	3757
(3) Father employed last year	.267	−.058 (.017)	.075	−.030 (.008)	3635
(4) Compromises, affection, criticizes	.281	−.054 (.018)	.079	−.030 (.009)	3447
(5) Drug/alcohol abuse, violence	.284	−.055 (.019)	.079	−.029 (.009)	3410

Note: Predicted probabilities give the probability of cohabitation/marriage vs. non-residence. Predicted probabilities are calculated for non-resident, never-incarcerated fathers. (Standard errors in parentheses.)

Table 6. Estimates of the marginal effects of incarceration on the probabilities of cohabitation and marriage, by race and ethnicity, Fragile Families and Child Wellbeing Study.

Race/Ethnicity of Father:	Cohabitation		Marriage		N
	Predicted Probability	Incarceration Effect	Predicted Probability	Incarceration Effect	
(1) African American	.258	−.022 (.024)	.043	−.020 (.008)	1641
(2) White	.206	−.086 (.037)	.145	−.062 (.035)	870
(3) Hispanic	.328	−.085 (.038)	.120	−.023 (.024)	899

Note: All models control for relationship at baseline, education of couple, first birth, father's employment, relationship skills, drug and alcohol abuse, and violence. Whites are defined as non-African American, non-Hispanics. Predicted probabilities give the probability of cohabitation/marriage vs. non-residence. Predicted probabilities are calculated for non-resident, never-incarcerated fathers. (Standard errors in parentheses.)

Table 7. Estimates of the marginal effects of incarceration on the probabilities of cohabitation and marriage by propensity score quintile, Full Sample, Fragile Families and Child Wellbeing Study. Omitted category is non-coresident.

| Propensity Score Quintile | Cohabitation | | Marriage | | |
	Predicted Probability	Incarceration Effect	Predicted Probability	Incarceration Effect	N
(1)	.218	−.069 (.052)	.075	−.039 (.024)	773
(2)	.219	−.054 (.034)	.091	−.039 (.019)	746
(3)	.239	−.079 (.032)	.061	−.028 (.013)	786
(4)	.272	−.057 (.033)	.054	−.019 (.012)	730
(5)	.263	−.049 (.031)	.029	−.013 (.008)	754

Note: Predicted probabilities give the probability of cohabitation/marriage vs. non-residence. Predicted probabilities are calculated for non-resident, never-incarcerated fathers. (Standard errors in parentheses.)

Table 8. Risks of imprisonment for men by age 30-34, observed marriage rate for urban male parents, 30-34, and adjusted marriage rates assuming zero incarceration.

	Cumulative Risk of Imprisonment	Observed Marriage Rate	Adjusted Marriage Rate
All			
Blacks	.205	.400	.450
Whites	.029	.584	.594
W-B Difference		.184	.144
Non-College			
Blacks	.302	.334	.399
Whites	.053	.534	.550
W-B Difference		.200	.151
H.S. Drop outs			
Blacks	.589	.296	.434
Whites	.112	.529	.565
W-B Difference		.233	.131

Note: To calculate the adjusted marriage rate, race-specific effects of incarceration on marriage were taken from Table 5. Incarceration was assumed to reduce marriage rates by .46 among blacks and .43 among whites. The adjusted marriage rate is m/([1-I] + Ib), where m is the observed marriage rate, I is the cumulative risk of imprisonment, and b is the effect of incarceration on marriage.