Parental Incarceration, Child Homelessness,
and the Invisible Consequences of Mass Imprisonment

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ABSTRACT

The share of the homeless population composed of African Americans and children has grown since the early 1980s, but the causes of these changes remain poorly understood. This article implicates mass imprisonment in these shifts by considering the effects of recent paternal and maternal incarceration on child homelessness using data from the Fragile Families and Child Wellbeing Study. These are the only data that represent a contemporary cohort of the urban children most at risk of homelessness, establish appropriate time-order between recent parental incarceration and child homelessness, and include information about prior housing. Results show substantial effects of recent paternal (but not maternal) incarceration on the risk of child homelessness. Furthermore, these effects are concentrated among black children. Taken together, findings provide support for two important conclusions. First, when these large individual-level effects are combined with massive increases and racial disparity in the risk of parental imprisonment, it becomes transparent that the prison boom has been a key driver of the dramatic increases in the risk of homelessness for black children. Thus, while economic downturns bring to mind the effects of foreclosure and eviction on homelessness, mass imprisonment may have played a role in the growth of the population of homeless African American children even during the economic boom of the late 1990s. Finally, paternal and maternal incarceration lead children down parallel paths of severe disadvantage. While maternal incarceration increases the risk of child foster care placement, paternal incarceration increases the risk of child homelessness.

On any given day, 664,000 Americans are homeless (U.S. HUD 2009). Although the homeless population has increased since the early 1980s, for the average American, the risk of being homeless on any given day remains small (Lee, Tyler, and Wright 2010; Shlay and Rossi 1992). Since daily risks of homelessness accumulate over the life-course, however, the risk of ever being homeless is much larger. Fully 6.5 percent of the adult population has ever been homeless (Link et al. 1995:352). Although changes in the size of the homeless population merit attention, compositional shifts in this population are even more striking. Classic accounts of the homeless focused on the single, white men who once made up most of this population (Bahr and Caplow 1974). Yet starting in the early 1980s, the share of the homeless population composed of African Americans and children rapidly began to grow (Dennis, Locke, and Khadduri 2007; Hopper 2003; Rog and Buckner 2007). These shifts are expressed in risks of child homelessness that would have been unthinkable even in the not-so-distant past. According to the most recent data, two percent of American children are homeless each year (National Center on Family Homelessness 2009). According to one relevant analysis, furthermore, black children ages 0-4 in New York City were between 29 and 35 times more likely to have stayed in a shelter in the last year than were white children of the same age (Culhane and Metraux 1999:227-228).

Increases in homelessness among children—especially black children—are consequential in part because homelessness compromises child wellbeing. Like homeless adults, homeless children are exposed to more infectious diseases as a result of not being housed (Haddad et al. 2005). Similarly, homeless children have difficulty continuing their schoolwork, run high risks of abuse, and suffer more mental health problems due to their lack of housing (Buckner 2008; Lee et al. 2010; Rafferty, Shinn, and Weitzman 2004; Vostanis, Grattan, and Cumella 1998). If these negative effects ripple out into the future, child homelessness could imperil wellbeing

throughout the life-course, thereby exacerbating racial inequality in America. Compositional shifts in the homeless population, moreover, signal broad changes in the vulnerability of African American children. Understanding the causes of these shifts may therefore shed light upon the broader social forces shaping social stratification and marginalization in America.

Despite the importance of uncovering the causes of changes in the rate of homelessness and the composition of the homeless population, knowledge in this area remains limited. Though research shows that changing economic conditions and social policies, deindustrialization, the increasing share of children growing up with a single parent, and the housing squeeze all played central roles in these shifts (Hopper 2003; Jencks 1994; Lee et al. 2010), no research has yet to consider whether the prison boom also played a role.[2] This inattention is unfortunate for two reasons. First, dramatic increases in the lifetime risk of parental imprisonment for black children coincide with similarly dramatic increases in the risk of homelessness for black children (Wildeman 2009). Second, a substantial body of research shows that parental incarceration exacerbates childhood disadvantage (Comfort 2007:275-279; Murray and Farrington 2008; Wakefield and Uggen 2010:397-398; Western and Wildeman 2009; Wildeman and Western 2010).[3] Unfortunately, only one study tests whether parental incarceration increases the risk of

[2] I use the terms "the prison boom", "mass imprisonment", and "mass incarceration" interchangeably throughout the course of this manuscript. According to David Garland (2001:1-2), mass imprisonment has two essential features:

> One is sheer numbers. Mass imprisonment implies a rate of imprisonment and a size of the prison population that is markedly above the historical and comparative norm for societies of this type…The other feature is the social concentration of imprisonment's effects. Imprisonment becomes *mass imprisonment* when it ceases to be the incarceration of individual offenders and becomes the systematic imprisonment of whole groups on the population. (italics original)

[3] This is not to say that effects of mass incarceration on children are exclusively negative, however, as some research suggests that high rates of male incarceration in the African American community have substantially increased women's educational attainment and labor market supply and decreased their risk of having a nonmarital teen birth (Charles and Luoh 2010; Mechoulan 2011), which may enhance the wellbeing of the children these women have. There is also evidence that children of fathers who engage in domestic violence fare better when he is removed from the household (Wildeman 2010), further suggesting that all the effects of parental incarceration may not be negative.

child homelessness (Foster and Hagan 2007), and it neither elucidates the mechanisms through which parental incarceration increases the risk of child homelessness nor uses data well-equipped to decipher whether incarceration causes, or merely correlates with, child homelessness. Since the micro-foundations upon which claims about the macro-level effects of the prison boom on the homeless population have yet to be elaborated, nevermind rigorously tested, it is difficult to know whether the prison boom itself influenced compositional shifts in the homeless population.

This article fills that gap by considering the consequences of parental incarceration for child homelessness. I argue that recent paternal incarceration promotes child homelessness through three mechanisms: by diminishing family finances; by limiting access to institutional and informal supports; and by compromising maternal capacities and capabilities. While I propose that recent paternal incarceration dramatically increases the risk of child homelessness, I suggest that recent maternal incarceration is unlikely to do so. Even though maternal incarceration may harm children more than paternal incarceration does (Kruttschnitt 2010), I argue that foster care intervention (Swann and Sylvester 2006) diverts children of recently incarcerated mothers into homes, however transitory, thereby dampening the effects of maternal incarceration on the risk of child homelessness.[4] Thus, while increases in female imprisonment increase foster care caseloads, increases in male imprisonment promote child homelessness.[5] Crucially for understanding the dramatic increases in the risk of child homelessness among black children, the negative effects of recent paternal incarceration on child homelessness will be concentrated among black children because of their greater underlying vulnerability to the risk of

[4] Throughout the course of this article, I refer to foster care placement as a form of severe childhood disadvantage because the most rigorous assessment to date suggests negative effects for both boys and girls (Doyle 2007).
[5] Ideally, I would also be able to test the relationship between maternal incarceration and foster care placement. Unfortunately, the first five years of Fragile Families and Child Wellbeing do not contain sufficient information on foster care placement and change in foster care arrangements to rigorously test this hypothesis using those data.

homelessness than the Hispanic and—albeit to a lesser degree—white children who experience paternal incarceration. Thus, while troubled economic times bring to mind the effects of foreclosure and eviction (Rugh and Massey 2010) on the risk of child homelessness, I argue that mass imprisonment played a less visible role in the creation of the population of homeless African American children even during the widespread economic boom of the late 1990s.

After advancing this argument, I test my hypotheses using data from the Fragile Families and Child Wellbeing Study. Since these data (1) are representative of the contemporary children at highest risk of paternal incarceration, maternal incarceration, and homelessness, (2) establish appropriate time-order necessary to examine the relationship between parental incarceration and child homelessness, and (3) include measures of prior living situations unavailable in other data, they facilitate the most rigorous empirical test of this relationship to date. In so doing, these data present a unique opportunity to examine whether mass imprisonment has contributed to the exceptional increase in the risk of homelessness for black children or is merely correlated with it.

CHILD HOMELESSNESS IN CONTEMPORARY AMERICA

The Changing Homeless Population

Reliable estimates of the homeless population are notoriously difficult to generate. Nonetheless, scholarly consensus suggests that the homeless population has changed in at least two ways since the early 1980s. First, the size of the homeless population has increased (Dennis et al. 2007; Lee et al. 2010). Although the daily risk of homelessness remains small for the average American, homelessness has become an increasingly prevalent form of social marginalization in America. Second, the composition of this population has shifted. Perhaps most importantly, the share of the homeless population composed of African Americans and families with small children has

grown (Dennis et al. 2007; Hopper 2003; Lee et al. 2010:505; Rog and Buckner 2007). Take New York City, for instance. By the early 1990s, yearly shelter utilization rates of black children under age five exceeded the rates of all other groups (Culhane and Metraux 1999:227-228). Although homelessness typically evokes images of isolated single men (Bahr and Caplow 1974), today it may be as accurate to visualize instead African American single mothers with children.

Such dramatic compositional shifts in the homeless population are important for a number of reasons. Since even brief bouts of homelessness can do long-term harm to adults and children (Dennis et al. 2007; Lee et al. 2010), these shifts could increase racial inequities not only among adults, but among children as well. Effects on health seem especially likely to be large given the high rates of victimization (Hagan and McCarthy 1997; Lee et al. 2010:506), exposure to infectious disease (Haddad et al. 2005), and limited access to health care (Kushel, Vittinghoff, and Haas 2001) suffered by the homeless. Because few Americans are ever homeless (but see Culhane and Metraux 1999; Link et al. 1995), the direct effects of these shifts on the American stratification system should not be overwhelmingly large. But dramatic increases in the share of the homeless population composed of black children provide broad insight into the vulnerability of black children relative to other types of children. In so doing, they enable us to glimpse the shifting contours of the American social stratification system.

To date, research suggests that changes in the structure of American families, the housing squeeze, deindustrialization, and decreasing welfare generosity all played key roles in changing the demographics of homelessness (Hopper 2003; Jencks 1994; Lee et al. 2010; Shlay and Rossi 1992). Although we have a sense that these forces contributed to shifts in the homeless population, existing macro-level research is nonetheless severely limited by the difficulty of measuring the size and composition of this population over a sufficiently long period of time to

parse out causal effects. Take the excellent example of shelter utilization rates discussed earlier, for instance (Culhane and Metraux 1999). Although the precise estimates of the yearly rates of shelter utilization for Philadelphia (1995) and New York City (1990 and 1995) provide profound insights into the composition of the homeless population in these two major American cities, because they are composed of very few data points, it is still nearly impossible to use even these excellent data to decipher the causes of macro-level shifts in the homeless population.

The Causes of Child Homelessness

Given the limitations of macro-level data, an alternative approach to deciphering what forces contributed to compositional shifts in the homeless population is finding an individual-level factor that (1) changed over this period and (2) increases the risk of child homelessness. For instance, if the risk of growing up with a single parent grew over this period (which it did) and growing up with a single parent increases the risk of child homelessness (which it does) then changes in the risk of growing up with a single parent may have contributed to increases in child homelessness. Although imperfect, this solution is one way to identify the broad social forces that increased the rate of child homelessness in the absence of appropriate macro-level data.

Unfortunately, because of the dearth of appropriate longitudinal data and the small share of families who are homeless, it is difficult to differentiate the causes of child homelessness from its correlates. A recent study by Fertig and Reingold (2008) using data from the Fragile Families and Child Wellbeing Study is one exception. Fertig and Reingold (2008) demonstrate that among families living in deep poverty, individual-level factors more strongly predict child homelessness than do city-level ones. Children of nonresident fathers whose mothers had low social support were at especially high risk, but living in public housing and receiving a housing subsidy both

decreased the risk of homelessness (Fertig and Reingold 2008:500-501). Taken together, these results show that access to public housing and a housing subsidy, the presence of the child's biological father, and strong informal supports diminish the risk of child homelessness among urban families. This study provides additional support for theories linking broad macro-level changes (such as the increasing risk of growing up with a single parent) with changes in the composition of the homeless population. But it yields little insight into other coincident social forces, such as the prison boom, that may also have played a role in the shifts in this population.

THE PRISON BOOM AND CHILD HOMELESSNESS

One previously unconsidered contributor to the increasing risk of homelessness among children—especially black children—is the prison boom. In this section, I (1) note that the increases in parental imprisonment were concentrated among black children, (2) review previous research on the connections between (parental) incarceration and (child) homelessness, (3) demonstrate a number of pathways through which paternal but not maternal incarceration may have increased the risk of child homelessness, and (4) suggest that paternal incarceration more substantially increased the risk of homelessness for black children than for other children.

The Changing Demography of Punishment in America

Changes in the lifetime risk of imprisonment for adult men suggest that the prison boom could have increased a child's risk of parental imprisonment (Pettit and Western 2004). Yet estimates of the risk of parental imprisonment and inequality in that risk have only recently been produced. These estimates indicate that the risk of parental imprisonment has increased markedly for black children. The 1990 birth cohort of black children had at least a 25.1 percent chance of

experiencing this event—a risk much higher than the 3.6 percent chance for white children. Estimates also show profound growth in absolute inequality in the risk of parental imprisonment. The absolute black-white gap for children born in 1978 was 12.8 percent; but for children born in 1990, it was 24.2 percent (Wildeman 2009: 271, 273). These estimates have two potential consequences. First, changes in the risk of parental imprisonment may be large enough to have altered the composition of the homeless population. Second, even if parental imprisonment does not increase the risk of homelessness for black children more than it does for other children, therefore, mass imprisonment could still disproportionately harm black children because of the unequal distribution of parental imprisonment by race (Wildeman 2009: 271, 273).

Previous Research on (Parental) Incarceration and (Child) Homelessness

In light of the concentration of incarceration among poor minority men with little education, it is perhaps unsurprising that the bulk of the research on incarceration and homelessness has focused on these men (Gowan 2002; Metraux and Culhane 2004; Lee et al. 2010:510; Metraux, Roman, and Cho 2007; Roman and Travis 2006). Although the data these studies use prevents them from establishing a causal relationship between incarceration and homelessness, each nonetheless provides insight into the mechanisms through which incarceration might cause homelessness. As a recent review concluded, "former inmates wind up with no place to go because of inadequate prerelease preparation, fragile finances, severed social relationships, and barriers posed by their stigmatized identities when seeking employment and housing" (Lee et al. 2010:510).

Thus, despite the difficulty of identifying a precise causal estimate of the effects of incarceration on men's risk of homelessness, the mechanisms linking incarceration and homelessness indicate that some share of the associations demonstrated in previous research

represents a causal effect. The case for a causal link between incarceration and homelessness can be made, but existing research indicates that few children endure a bout of homelessness alongside a previously incarcerated father. One study suggests that most chronically homeless men become so only long after ties to their children have been severed (Gowan 2002:508-510).[6] Thus, although paternal incarceration may increase children's risk of homelessness, the key mechanisms through which it does so likely do not involve them living with their fathers.

Given the preponderance of research on the connections between incarceration and homelessness among adult men, it is unfortunate that we know so little about the effects of parental incarceration on children's risk of homelessness. To date, only one study has directly considered the relationship between parental incarceration and child homelessness (Foster and Hagan 2007). Using Add Health data, this study found that having a father with a history of incarceration was positively associated with a child's having been homeless at any point by their late teens or early twenties, after adjusting for possible confounders (Foster and Hagan 2007). Although, as the first study in this area, this article represents a tremendous advance, it has two major limitations that call for more research. First, it includes little discussion of the mechanisms through paternal incarceration might increase the risk of child homelessness—although it does discuss why paternal imprisonment might harm girls most (Foster and Hagan 2007:421-422). Second, despite the broad usefulness of the Add Health data, they are poorly suited to providing a strong causal test of whether parental incarceration increases the risk of child homelessness because of the sampling frame, measure of homelessness, and lack of key controls.

Starting with the sampling frame, Add Health likely misses many children who have already been homeless or will experience homelessness because it is representative of children

[6] Formerly incarcerated men who are cycling through shelters are likely more connected to their families, but Gowan's (2002:508-510) findings still suggest that not all children with homeless fathers are themselves homeless.

enrolled in grades seven through twelve. Children who drop out of high school are therefore underrepresented. Since we expect children with precarious living situations in middle and high school—and with ever-incarcerated parents, for that matter—to drop out of school, the children of most direct interest likely are somewhat underrepresented.[7] Another limitation of using Add Health data is that two of its measures of homelessness—running away from home and getting kicked out of their house by their parents by ages 18 to 26—may not have led to homelessness (Foster and Hagan 2007:423). Finally, the data are not structured such that the authors can provide a strong causal test of the effects of parental incarceration on child homelessness because they cannot establish appropriate time-order between paternal incarceration and child homelessness while controlling for possible confounders such as prior homelessness, eviction, and incarceration. More research utilizing appropriate data for considering the paternal incarceration-child homelessness relationship and better elaborating the mechanisms through which paternal incarceration might increase the risk of child homelessness, therefore, is needed.

Paternal Incarceration, Maternal Incarceration, and Child Homelessness

Prior research points to a link between paternal incarceration and child homelessness (Foster and Hagan 2007). The mechanisms through which having a father incarcerated influences a child's risk of homelessness, however, have yet to be elaborated. Taken in conjunction with the isolation of many homeless men (Gowan 2002), this inattention to mechanisms makes it difficult to decipher whether paternal incarceration causes or is merely correlated with child homelessness.

[7] This critique would apply to nearly all sampling frames and is not meant to focus solely on the Add Health data. Furthermore, analyses of Add Health data have shown that the missing high school dropouts do not introduce bias into population-level estimates of risky behaviors because of the small proportion of children who drop out of high school (Udry and Chantala 2003). Nonetheless, since children who have been homeless seem especially likely to be underrepresented in school-based samples, the sampling strategy is still somewhat less than ideal in this instance.

In this section, I address this gap by proposing a series of indirect channels through which having a father incarcerated could increase a child's risk of homelessness. In so doing, I establish a framework in which having a father incarcerated increases the risk of homelessness for children even if they are not residing with the father at the time of their homelessness. My basic argument is that paternal incarceration increases the risk of child homelessness *indirectly* by destabilizing already-fragile familial finances, decreasing childrens' access to institutional and informal supports, and diminishing maternal capacities and capabilities. Although maternal incarceration also likely damages family life in similar ways (Kruttschnitt 2010), I argue that having a mother incarcerated will negligibly increase the risk of child homelessness because state interventions into the lives of the children of incarcerated mothers push children into foster care instead (Swann and Sylvester 2006). Thus, paternal and maternal incarceration lead children into different, but parallel, forms of severe marginalization. While paternal incarceration increases the risk of child homelessness, maternal incarceration increases the risk of foster care placement.

Perhaps the most obvious way paternal incarceration could promote child homelessness is by destabilizing already-fragile familial finances. Incarceration disproportionately draws in men with poor job prospects (Pettit and Western 2004) and further diminishes their employability (Pager 2003; Western 2002, 2006). (This is to say nothing of the time when the father is incarcerated, when he cannot contribute financially at all.) Likewise, incarceration is associated with significantly elevated risks of marital dissolution (Apel et al. 2010; Lopoo and Western 2005; Massoglia, Remster, and King *Forthcoming*) and further diminishes the quality of the relationships between parents, regardless of whether or not they are still romantically involved (Edin, Nelson, and Paranal 2004; Nurse 2002, 2004; Swisher and Waller 2008). Since fathers' financial contributions to family life are shaped both by their earnings and their

relationship with the mother, it is unsurprising that paternal incarceration diminishes both the probability of contributing any money to family life and the amount of money contributed, contingent upon contributing anything (Geller, Garfinkel, and Western *Forthcoming*).

But diminished paternal contributions are hardly the only way that paternal incarceration destabilizes familial finances, and they may not even be the most crucial. The accumulation of legal debt also disrupts familial finances "by reducing family income; by limiting access to opportunities and resources such as housing, credit, transportation, and employment; and by increasing the likelihood of ongoing criminal justice involvement" (Harris, Evans, and Beckett 2010:1756). None of these components are irrelevant for the finances of families tied to legal debtors, but two are especially vital for this analysis. First, legal debt negatively impacts credit scores, which are necessary not only for securing loans, but also for securing housing in many housing markets (Harris et al. 2010:1780-1781). Second, in many states, county clerks can garnish the wages of the formerly incarcerated person's spouse and seize joint assets, including homes (Harris et al 2010:1788-1789). The accumulation of legal debt therefore represents a key mechanism through which paternal incarceration damages already-fragile familial finances.

Another cost for families with an incarcerated member is keeping in touch with that family member by making phone calls and visits and sending packages (Comfort 2007:284). Although it is difficult to precisely estimate the average cost of keeping in touch with a family member because most studies considering this topic are based on families who are visiting a loved one, the consensus is that the costs for families are quite steep, contingent upon keeping in touch at all (Comfort 2008; for estimates, see Braman 2004:133; Grinstead et al. 2001:64). Of course, many mothers will discontinue the most costly forms of contact with their incarcerated partner before it drives them into homelessness, so the direct effects of these expenses are

unlikely to be large. Nonetheless, to the degree that these additional expenses destabilize familial finances, which existing research strongly suggests they do (Braman 2004; Comfort 2008; Grinstead et al. 2001), they could make families more vulnerable to becoming homeless as a result of some other shock to family life such as the unexpected loss of a job.

The effects of paternal incarceration on child homelessness, moreover, are not solely attributable to the corrosive effects of incarceration on familial finances. Additional research suggests that the negative effects of incarceration on institutional and informal supports may also play a role in pushing children into homelessness. Recent analyses suggest that for at-risk families, receipt of cash welfare and public housing benefits substantially diminish the risk of homelessness (Fertig and Reingold 2008). Current federal policies, however, ban individuals with a drug felony conviction from receiving cash welfare, food stamps, and subsidized (public) housing (see especially Rubinstein and Mukamal 2002). Thus, if the parents want to reside together and one of them has ever been convicted of a felony, the other parent must choose between having the ever-incarcerated parent live in subsidized housing illegally, and run the risk of losing said housing, or living elsewhere, which may be neither desirable nor financially feasible. This also applies to having a warrant out for one's arrest for even small offenses (such as technical violations of parole). Alice Goffman's (2009:350) fieldwork on men on the run from the law provides a poignant example, as she witnessed a police officer tell the family of one man on the run from the law that if the house they owned had been "a section 8 building they could have been immediately evicted for endangering their neighbors and harboring a fugitive."

Although it is unclear how often incarceration results in the loss of institutional supports such as cash welfare, public housing, and housing subsidies, the consequences of losing those resources may be catastrophic. This is especially the case since the families of incarcerated men

tend to withdraw from social networks in ways that may make them less able to rely on informal sources of support should they need to borrow money to make rent or somewhere to stay following an eviction. As Donald Braman (2004:171) notes, "perhaps the most significant consequence of stigma among families of prisoners…is the distortion, diminution, and even severance of social ties." Since the removal of these vital supports diminishes mothers' ability to respond to shocks in family life by relying on kith and kin, this may also be a mechanism through which paternal incarceration increases the risk of child homelessness.

A final rarely-considered mechanism through which paternal incarceration could increase the risk of child homelessness is by diminishing maternal capacities and capabilities. Although no quantitative research to date has tested the effects of paternal incarceration on maternal wellbeing, ethnographic research paints a stark portrait of the mental health of women left behind by incarcerated men (Braman 2004; Comfort 2008).[8] As Donald Braman (2004:197) notes, "nearly without exception, the women I spoke with who were closest to a prisoner had experienced depression and related their depression, at least in part, to the incarceration of their loved one." Of course, maternal depression need not always lead to homelessness. Nonetheless, ethnographic work shows that in some cases, mothers simply cannot function after their partners are incarcerated. As Megan Comfort (2008:151) notes, one of the women in her study "became homeless due to incapacitating depression after her husband's trial and at the time of her interview had been living for nearly three months in a tent in a public campground with her children and grandchildren." Thus, although rarely discussed, paternal incarceration has the potential to inhibit maternal functioning to the point that she and her children become homeless.

[8] There is, however, some quantitative research on the consequences of sons' incarceration on the mental health of mothers (Green et al. 2006). Thus, to the degree that the partners and children of incarcerated men might need to rely on his mother for aid, this same incapacitating depression could diminish her ability to provide them with aid.

Taken together, previous research points to a host of channels through which paternal incarceration promotes child homelessness. Although research suggests that maternal incarceration often does significant harm to family life (Kruttschnitt 2010), I argue that maternal incarceration will not increase (or only negligibly increase) the risk of child homelessness because the majority of children on the brink of becoming homeless as a result of having their mother incarcerated will be funneled into foster care, thereby blunting any effects of maternal incarceration on child homelessness. Although micro-level research testing whether maternal incarceration causes children's foster care placement is scarce, macro-level research suggests that increases in female imprisonment rates between 1985 and 2000 explain 30 percent of the doubling of foster care caseloads over this period (Swann and Sylvester 2006:324).[9] Many children still experience instability as a result of these placements (Kruttschnitt 2010:35), but placement into a home in conjunction with the state monitoring that comes with this intervention nonetheless diminishes the risk that children of incarcerated mothers become homeless. Thus, I argue that paternal but not maternal incarceration will increase the risk of child homelessness.

Racial Differences in the Effects of Paternal Incarceration on Child Homelessness

Given disparity in imprisonment and the negative effects of paternal incarceration on child homelessness, changes in the American imprisonment rate plausibly increased the share of the homeless population composed of black children—provided the effects are not smaller for black children than they are for other children. In this section, I argue that the effects of paternal incarceration on child homelessness are not only not smaller for black children than other children, but actually *larger*. I argue that this is the case because of (1) the higher propensity to

[9] When the male imprisonment rate and the female imprisonment rate were included simultaneously, the male imprisonment rate no longer had a discernible effect on foster care caseloads (Swann and Sylvester 2006:326).

experience homelessness among African American children and (2) the greater duration of incarceration for African Americans, contingent upon being incarcerated in the first place.

Descriptive differences in the risk of homelessness for black, white, and Hispanic children strongly suggest a greater propensity to experience homelessness for black children than other children. In a study providing maybe the best estimate of homelessness among young children, Culhane and Metraux (1999:228) show that the yearly risks of shelter use for children under the age of 10 are 0.1 percent for whites, 2.0 percent for Hispanics, and 4.0 percent for blacks.[10] Further bolstering these claims is the overrepresentation of African Americans among the homeless, even after adjusting for poverty status (Dennis et al. 2007; Lee et al. 2010:505).[11] Why is the greater propensity to experience child homelessness relevant for this study? Think of the risk of child homelessness as a latent variable in which all children have some underlying risk of being homeless, but only children who cross a certain threshold experience the event.[12] If the underlying propensity to experience child homelessness is equally distributed throughout the population and the effects of paternal incarceration on the mechanisms discussed earlier are also equally distributed throughout the population, then the effects of paternal incarceration on the risk of child homelessness should be equivalent for all groups. Yet if the propensity to experience homelessness is not equally distributed across racial groups, as we know that it is not, then having a father incarcerated will disproportionately lead children with higher underlying vulnerabilities into homelessness. Since we know that African American children have a greater underlying vulnerability to child homelessness than do white or Hispanic children (Culhane and

[10] I derived this estimate by adding risks for ages 0-4 and 5-9 and dividing by two (Culhane and Metraux 1999:228).
[11] Although this greater propensity to experience homelessness could be driven by a host of factors such as lower average wealth (Conley 1999) or a greater reliance on institutional supports such as cash welfare, public housing, and housing subsidies (table A1), researchers have yet to isolate the key drivers of this greater propensity.
[12] For a general discussion of these ideas and their application to other areas, see Long (1997:40-47).

Metraux 1999; Dennis et al. 2007; Lee et al. 2010:505), we might expect the effects of paternal incarceration on child homelessness to be concentrated among African American children.

Beyond racial and ethnic differences in underlying vulnerabilities, research suggests an additional reason paternal incarceration may disproportionately increase the risk of homelessness for black children: the greater mean length of incarceration for black fathers than other fathers, contingent upon being incarcerated. Although there are vigorous debates in criminology about how much the duration of incarceration influences the magnitude of the effects of incarceration (e.g., Kling 2006; Massoglia et al. *Forthcoming*), longer spells of incarceration will likely increase the risk of child homelessness since longer incarceration spells may further diminish familial finances, disrupt institutional and informal supports, and compromise maternal capacities and capabilities. Unfortunately, there are many obstacles to estimating disparities in the mean duration of imprisonment (Patterson and Preston 2008), but substantial racial disparities in incarceration reflect both racial disparities in the probability of incarceration and the length of incarceration (Wakefield and Uggen 2010 discuss disparities in incarceration).[13]

Thus, racial disparities in the effects of paternal incarceration on child homelessness should be driven both by greater incarceration lengths for fathers of African American children and higher underlying vulnerabilities to the risk of child homelessness among the African American population. Substantial disparities in the risk of child homelessness between black children and all other children are exacerbated not only by disproportionate risks of having a father incarcerated, but also by disproportionate consequences of experiencing that event.

[13] Estimating racial disparities in the duration of jail stays may be even more difficult because information about flows in and out of prisons is measured more precisely (through the National Corrections Reporting Program) than is information about flows in and out of jails, making it even more difficult to estimate the mean length of jail stays.

DATA AND METHOD

Data

In order to test my hypotheses, I used data from the Fragile Families and Child Wellbeing Study, a longitudinal birth cohort study following nearly 5,000 children born in urban areas between 1998 and 2000—the majority of whom were born to unmarried parents (Reichman et al. 2001). Initial interviews were conducted with mothers in 20 cities with populations over 200,000 in hospitals shortly after they gave birth. Mothers were then contacted again 12, 30, and 60 months after the birth for interviews. By 60 months, approximately 85 percent of mothers were still in the sample. Fathers were also interviewed, although their response rates were lower. By 60 months, only about 65 percent of fathers were still in the sample. I limited the sample to children who had at least one parent complete both the 30 and 60 month interviews. Doing so yielded a large number of observations (N=3,774), but represents only around 75 percent of the children originally identified in the sample. As the analytic sample represents 75 percent of the children originally identified, missing data is a substantial concern here.[14] Although the results from these analyses are representative of the parental incarceration-child homelessness relationship for at-risk urban children, they are also not representative of the experiences of all American children.

Despite high attrition and not being fully representative of the experiences of American children, these data are uniquely suited to answering my research questions for a number of reasons. First, and most importantly, these are the only data that are both representative of the contemporary children at highest risk of homelessness and have enough cases of recent paternal incarceration, recent maternal incarceration, and child homelessness to conduct statistical

[14] In supplementary analyses, I imposed an additional sample limitation: that the family was living in poverty at 30 months. Limiting the sample thus resulted in a substantial loss of data (N = 1,410), so I do not present those results in the main text. I do, however, show results from a series of models in which the sample was limited in table A2.

analyses. Second, because of the longitudinal nature of the data and the repeated measures of parental incarceration and child homelessness, I am able to establish appropriate time-ordering between the dependent and explanatory variables. Third, because of the uniquely extensive battery of questions about family life included in each wave of the survey, I am able to control for more possible confounders than any prior study in this area. Finally, because many of the parents in the sample have been incarcerated—including a large number who have been incarcerated recently—these data allow me more confidently to identify causal relationships than I could with a sample in which a smaller percentage of parents had ever been incarcerated.[15]

Dependent Variable

The dependent variable measured whether children had been homeless in the last year. Children were coded as having been homeless if they fit the following criteria at 60 months: (1) one parent reported either living in temporary housing, a group shelter, or on the street at the time of the interview or reported that they had stayed somewhere not intended for regular housing—such as an abandoned building or car—for at least one night in the last 12 months; and (2) the same parent reported that they lived with the child all or most of the time. Coding for this variable has been used in prior analyses (Fertig and Reingold 2008), but it has three limitations. First, it provides no insight into the duration of homelessness. Second, it underestimates cases of child homelessness in the last year because it counts staying in a shelter as being homeless only if the child was living in a shelter at the time of the interview. Although this underestimate is unlikely to substantially bias my results, it bears mentioning since it elucidates why risks of child

[15] Thus, although the data are imperfect and were not originally designed to consider the research questions I consider, they still allow me to provide a stronger test of these research questions than any other existing dataset would. (For an excellent related discussion in a different research area, see Dechter and Elder [2004].)

homelessness shown here for a vulnerable group of children are only slightly higher than they are for the population of children in two large cities (Culhane and Metraux 1999:228, 230). Finally, the measure cannot guarantee that the child was living with the parent at the time that they were homeless. This limitation is substantial and should not be overlooked. Nonetheless, additional analyses (table A3) suggest that although the child may not have been living with the parent while they were homeless, this coding provides an excellent measure of *family* homelessness because in more than three-quarters of the families in which the child was coded as homeless, the child was living only with their mother at the time they were homeless. Thus, though imperfect, this measure yields insight into the degree to which recent episodes of incarceration contribute to greater risks of homelessness among families with small children.

Not surprisingly, few children were homeless in the year before the 60 month interview. Only about 3 percent of children in this sample had been homeless (table 1). For children of recently incarcerated fathers, the risk of homelessness was .06; for children not experiencing recent paternal incarceration, the risk was only .02. Differences in the risk for those experiencing and not experiencing recent maternal incarceration were comparable. Children of recently incarcerated mothers were much more likely to have been homeless (.07) than were children not experiencing recent maternal incarceration (.03). At least descriptively, this suggests that both recent paternal incarceration and recent maternal incarceration are associated with elevated risks of child homelessness and that these differences are statistically significant (at the .01 level).

Explanatory Variables

The explanatory variables measure *recent* paternal and maternal incarceration. Children are considered to have experienced recent paternal or maternal incarceration if their mother or father

was reported to be incarcerated at 60 months or to have been incarcerated since the last interview but was not incarcerated at the 30 month interview. When reports about incarceration conflicted, I assumed that the individual had recently been incarcerated. Alternate coding of recent paternal and maternal incarceration did not substantially change results. As table 1 shows, experiencing recent bouts of paternal and maternal incarceration was common for the children considered in this analysis. Approximately 17 percent of the sample experienced a recent bout of paternal incarceration, and about 3 percent of the sample experienced a new maternal incarceration.

[Insert table 1 about here.]

Unfortunately, the time-ordering of the dependent and explanatory variables, while much better than in any previous study of the causes of child homelessness, is still imperfect. In these data, the measure of child homelessness spans the last year (48-60 months) and the measure of recent parental incarceration spans the last 30 months (31-60 months). Thus, child homelessness may have preceded parental incarceration, which would undermine my ability to provide the empirical test I purport to provide. In order to deal with this concern, I conducted a robustness check in which I used recent (but not current) paternal incarceration (31-59 months) to predict current child homelessness (60 months). In so doing, I establish appropriate time-ordering of the dependent and explanatory variables. Results from this robustness check, which are available upon request, showed that paternal incarceration between 31 and 59 months is a positive, significant predictor (at the .01 level) of child homelessness at 60 months after adjusting for basic demographic characteristics.[16] Furthermore, the effects are substantial. The odds of current homelessness for children of recently incarcerated fathers are nearly 11 times ($e^{2.39}$) those of

[16] The effects of recent paternal incarceration became even stronger in a model including all controls, which corresponds to model 6 in table 2. Nonetheless, I choose to discuss the model adjusting for only basic demographic characteristics in the text because of instability in the point estimates for some of the controls included in the comparison model to model 6 in table 2. These results are also available upon request from the author.

comparable children not experiencing recent paternal incarceration.[17] Thus, my results do not appear to be driven by reverse causality. Although the results from this robustness check were stronger than the main results herein, I ultimately opted to present the more comprehensive measure of child homelessness because of the small number of cases of current homelessness.

Control Variables

All analyses include a host of control variables. All controls were drawn from the baseline, 12 month, or 30 month surveys in order to preserve appropriate time-order. Probably the most important controls are measures of a history of paternal and maternal incarceration since a history of incarceration is a robust predictor of future incarceration. Fathers and mothers were considered to have ever been incarcerated by 30 months if they or the other parent reported that they had ever been incarcerated at the baseline, 12 month, or 30 month interviews or they were currently incarcerated at 30 months. As was the case with recent paternal and maternal incarceration, the parent was assumed to have ever been incarcerated if reports conflicted. As table 1 shows, many children in this sample had either a father or mother with a history of incarceration. About 41 percent of children had a father who had ever been incarcerated by 30 months; about 6 percent of children had a mother who had ever been incarcerated by then. Not surprisingly, children experiencing a new paternal or maternal incarceration were far more likely than children not experiencing those events to have a parent with a history of incarceration.

I also adjusted for factors measured at the baseline survey. These include maternal and paternal age (both of which are centered), whether the mother or father dropped out of high school, the child's race (non-Hispanic black, Hispanic, white, and other), the number of other

[17] Since the risk of current homelessness is low, this odds-ratio does not translate to an unreasonably large effect.

children the mother had before the focal child's birth, whether the caretaker was an immigrant, and whether the mother smoked during the pregnancy (Fertig and Reingold 2008). Maternal smoking was coded 0 if she did not smoke while pregnant, 1 if she smoked less than one pack per day while pregnant, and 2 if she smoked more than that while pregnant. As descriptive statistics from table 1 show, children experiencing new paternal and maternal incarceration were disadvantaged relative to children not experiencing those events on nearly all control variables.

I also adjusted for factors measured at the 30 month interview. Importantly, all of these factors were measured *before* the most recent bout of paternal or maternal incarceration took place. These include caretaker self-rated health, whether either parent had a history of drug or alcohol abuse, whether the mother had ever been abused by the father, whether the parents were living together, the ratio of household income to the poverty line, whether the caregiver had difficulty paying their bills, the caregiver's lack of social support, whether the caregiver lived in public housing, received a housing subsidy, or received cash benefits, whether the mother had experienced a major depressive episode in the last year, and the mother's level of life dissatisfaction and stress.[18] The final individual-level controls included in the models were

[18] Caretaker self-rated health was based on caretaker reports of whether their health was excellent to poor. If both parents claimed to live with the child all or most of the time, then the mean of their self-rated health scores was used. This method of averaging scores was also used for the rest of the controls unless otherwise noted. Results did not change markedly when other methods for incorporating controls were used. Either parent was considered to have a drug or alcohol problem if they or the other parent agreed that drugs or alcohol interfered with their work or personal relationships or made it difficult for them to manage their life on a daily basis, or they had such a strong desire to drink that they had to have a drink. Mothers were considered to have been abused by the father if they reported having ever been hurt by the father in a fight since the child's birth. The household income to poverty ratio was constructed by dividing household income by the poverty line in a geographic area for a family of the same size. Difficulty paying bills was based on caretaker reports that they couldn't pay all of their rent or mortgage, couldn't pay all of their gas, oil, or electricity, had their gas, oil, or electricity turned off for nonpayment, or had their telephone disconnected because of lack of payment. Lack of social support ranges from 0 to 4 and was based on whether the caregiver thought they could count on someone to loan them $200, provide them with a place to live, provide emergency childcare, or cosign a loan for $1000 with them. Maternal life dissatisfaction was based on whether mothers responded that they were very satisfied to very dissatisfied overall with their lives. Maternal stress was based on how mothers responded to questions asking them if being a parent is much harder than they thought it would be, they felt trapped by their responsibilities as a parent, taking care of their children was much more work

measures of housing instability drawn from the 30 month interview. In addition to controlling for being homeless at 30 months, I also controlled for the total number of times the child moved between the 12 and 30 month interviews and whether the caregiver had been evicted in the last year for their inability to pay their rent or mortgage at 30 months. Including these controls allowed me to look at change in child homelessness as a result of paternal and maternal incarceration and represents an improvement over prior research in this area, which has used cross-sectional data. All models also include city dummy variables. Including these controls improved model fit only minimally, but I included them because of work showing effects of housing markets and local conditions on homelessness (see especially Lee et al. 2010:509).

As was the case with a history of paternal or maternal incarceration and most baseline characteristics, there were generally substantial differences between children experiencing new paternal or maternal incarceration and not experiencing new paternal or maternal incarceration on measures drawn from the 30 month interview. Table 1 shows these substantial differences. Especially noteworthy were differences in homelessness in the year before the 30 month survey. Children experiencing new paternal or maternal incarcerations were around three times more likely than other children to have been homeless in the year before the 30 month interview.

Unfortunately, the preferred measures of paternal and maternal self-control, which likely have a strong influence on the risk of experiencing incarceration (Gottfredson and Hirschi 1990), are not available until the 60 month interview.[19] This is unfortunate because it leaves it up for debate whether the analysis should adjust for self-control. On the one hand, criminological

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than pleasure, and they often felt tired, worn out, or exhausted from raising a family. Each question was coded from 1 to 4 with one representing the least stress. The answers were then reverse coded and averaged to form the scale.

[19] These measures were based on how parents responded to questions about themselves (and the other parent if they were not interviewed) about how often they did things without considering the consequences, got into trouble because they didn't think before they acted, did things that may cause trouble with the law, lied or cheated, got into fights, and didn't feel guilty when they misbehaved. For more discussion of how these variables have been coded in these data, see recent papers by Geller, Garfinkel, and Western (*Forthcoming*) and Wildeman (2010).

theories suggest that self-control is stable from childhood (Gottfredson and Hirschi 1990), even if adult social ties influence how self-control shapes behavior (Sampson and Laub 1990). According to this perspective, including the controls for paternal and maternal self-control would be appropriate—even if they were measured *after* the most recent bouts of paternal or maternal incarceration. On the other hand, recent research suggests not only that self-control is not as stable as it was once thought to be but also that it may change as a result of incarceration. And though some analyses show an increase in self-control during incarceration (e.g., Mitchell and MacKenzie 2006), the more common opinion is that incarceration diminishes self-control, as individuals adjust to survive the brutalizing prison environment (e.g., Nurse 2002:54-56). Since incarceration might inhibit self-control but also plays a strong role in influencing the risk of incarceration, I chose to exclude those controls from the main results presented in the paper but include them in a series of robustness checks, all of which can be found in table A2.[20]

For a full presentation of the dependent, explanatory, and control variables, see table 1.

Mediating Variables

The mediating variables measure (1) spuriousness, (2) family finances, (3) loss of institutional and informal supports, and (4) maternal capacities and capabilities. The ideal mediators would have been measured after parental incarceration but before child homelessness. Unfortunately, establishing such ideal time-order between dependent, explanatory, and mediating variables in survey research is generally difficult, making it much more of an obstacle to decipher how

[20] Results suggest that adjusting for self-control would have led to somewhat weaker results in logistic regression models but results that were comparable using propensity score models (table A2). Furthermore, they suggest that results from models that adjusted for paternal and maternal self-control and limited the sample to children living in poverty at 30 months would have been stronger in each model than results presented here. Thus, while results may have been somewhat weaker had I adjusted for self-control, the general pattern would have been unchanged.

important a role each measure plays in mediating the relationship considered. Measures of spuriousness include whether between 31 and 60 months either parent was reported to have a drug or alcohol problem and the mother reported new abuse from the father. Measures of family finances include whether there was a resident father at 60 months, the household income to poverty ratio at 60 months, the caretaker's inability to pay bills at 60 months, the number of moves between 42 and 60 months, and whether the mother had been evicted between 48 and 60 months. Although I placed great emphasis on the role of paternal contributions in mediating the paternal incarceration-child homelessness relationship in the background, I did not include a measure of paternal contributions in these models because doing so would have resulted in 300 lost observations (Geller et al. *Forthcoming*) and it seemed unlikely to mediate the relationship after including all other measures of family finances. I am also unable to include measures of changes in legal debt and the expenditures associated with keeping in touch with an incarcerated family member, which is unfortunate since I expect both to be key mechanisms. Measures of institutional and informal supports include lacking social support and losing public housing, a housing subsidy, and cash welfare. Unfortunately, it is difficult to ascertain whether losing such supports represents unmet need or no longer needing them, likely leading me to underemphasize how important these mediators are. The final hypothesized mediator is maternal capacities and capabilities, measured as maternal depression, life dissatisfaction, and stress at 60 months.[21]

Method

The analysis proceeds in three stages. In the first, I consider whether parental incarceration increases the risk of child homelessness and whether any effects are concentrated among African

[21] Descriptive statistics for all measures are available upon request from the author.

Americans using logistic regression models. In the second, I provide further tests of these relationships using propensity score models and yield insight into how powerful unobserved factors shaping both the risk of parental incarceration and child homelessness would have to be to render the relationship nonsignificant. In the third, I consider mechanisms using logistic regression models. I rely on one-sided t-tests throughout since my hypotheses are directional.

In the first stage (tables 2 and 3), I use a series of logistic regression models to consider the effects of recent paternal and maternal incarceration on child homelessness. All models summarized in these two tables (and table 6, which also uses logistic regression models) use clustered standard errors to account for the clustering of observations on cities.[22] In table 2, the goal is to decipher whether the descriptive relationships between recent paternal and maternal incarceration and child homelessness shown in table 1 hold up after adjusting for control variables. In table 3, I consider whether results hold up when the sample is limited to children whose parents had already been incarcerated by 30 months (models 1 and 2) and who had not been homeless in the year before 30 months (model 3). By restricting the sample to children of ever-incarcerated parents, I diminish heterogeneity, thereby strengthening causal inference (LaLonde 1986; Leamer 1983). Since parents who have and have not ever been incarcerated might differ in unobserved ways, limiting the sample to children of ever-incarcerated parents is vital for establishing a plausible causal relationship. By restricting the sample to children who have not recently been homeless, I show that results are not driven by children with a history of unstable housing, which is important because of the previous housing instability of the children

[22] Although clustering the standard errors provides a conservative test of the associations tested herein, it is unclear whether observations are dependent (in which case, clustered standard errors would be appropriate) or independent (in which case, clustered errors would increase the risk of incorrectly rejecting the null) after including city fixed effects. Since I was not confident that observations within cities could be considered independent after including city fixed effects, I clustered the standard errors since this provides a more conservative test. Importantly, in robustness checks in which I did not cluster the standard errors, no key nonsignificant relationships attained significance.

of incarcerated parents (table 1). The final models in table 3 (models 4 and 5) test the hypothesis that recent paternal incarceration increases the risk of homelessness most for black children.

Covariate adjustment is one way of diminishing concerns about pre-existing differences driving the results. Another method for diminishing these concerns is a propensity score model, which is the method I use in the second stage of the analysis (table 4). Although propensity score models are not new, they are relatively new to sociology (Morgan and Winship 2007; Rosenbaum and Rubin 1983; see also Massoglia 2008). And since the goal of propensity score analysis is to match individuals as closely as possible on observables, these models may be especially useful when the "treatment" and "control" groups initially look vastly different, as they do here (table 1). Propensity score models estimate average effects of a treatment (recent paternal incarceration) on an outcome (child homelessness) through a two stage-process. In the first, probabilities of experiencing recent paternal incarceration are generated using a logistic regression model. After this, individuals are matched based on the probability of experiencing the treatment given their observed characteristics and the coefficients generated using the logistic regression model. Once matching is complete, effects of recent paternal incarceration on child homelessness can be estimated. This procedure will be completed for the total sample (table 4, column 1), black children (table 4, column 2) and non-black children (table 4, column 3).

Models predicting the propensity to experience new paternal incarceration for the total sample initially included measures of whether the father had ever been incarcerated, maternal and paternal age, maternal and paternal high school completion, whether the child was black, whether either parent had a history of drug or alcohol abuse, the household income to poverty ratio (including squared and cubed terms) and all two way-interactions. The balancing property was not satisfied for the total sample when measures of parental history of drug or alcohol abuse

or interactions with it were included, so they were dropped. The balancing property was not satisfied for blacks when interactions between whether the father had ever been incarcerated and whether the father had dropped out of high school, paternal and maternal age, and whether the father dropped out of high school and the mother dropped out of high school were included, so they were excluded. The balancing property was satisfied for non-blacks with all covariates.[23]

After checking for covariate balance for all three samples, I restricted each sample to the region of common support and used three types of propensity score models to estimate average treatment effects. The first type of matching, nearest neighbor matching, estimates effects by comparing the probability of experiencing homelessness of the closest treated and control observations. For this analysis, I used nearest neighbor matching with replacement, which allows control observations to be used for more than one treated observation. I also used a caliper of .005 since neighbor matching may provide the most unbiased estimates in combination with a caliper (Morgan and Winship 2007:113). (Point estimates were similar using nearest neighbor matching without a caliper.) The second type of matching, radius matching, compares the mean probability of experiencing homelessness of any treated and control observations that have propensity scores within a certain distance of each other. For this analysis, I relied on a caliper of .005. The final type of matching used, kernel matching, uses all controls but weights them according to their distance from treated cases. This uses all information but gives more weight to controls that are more similar to treated cases. I used a bandwidth of .006 and an Espanechikov kernel. All propensity score analyses were conducted using STATA-compatible software designed by Leuven and Sianesi (2003), although results from robustness checks using STATA-compatible software designed by Becker and Ichino (2002) were virtually identical.

[23] More specifics about the first stage of the propensity score models are available upon request from the author.

I also compared the estimated effects of recent paternal incarceration based on propensity score models to the estimated effects using the logistic regression models shown in table 2 (models 1, 3, 4, and 6). Since the dependent variable is dichotomous, estimating the average effects using propensity score models did not require additional work: the point estimates produced represent the difference in the probability of experiencing child homelessness due to recent paternal incarceration. For the logistic regression models, however, the procedure for estimating the magnitude of the effects is not straightforward. In order to deal with this difficulty, I estimate the probability of child homelessness for those experiencing and not experiencing paternal incarceration under two scenarios: holding all values (except for recent paternal incarceration) at the total sample mean; and holding all values (except for recent paternal incarceration) at the mean for those experiencing recent paternal incarceration.

Of course, propensity score models only match individuals on observed factors. Thus, results from propensity score models (and the earlier discussed logistic regression models) ultimately cannot help me rule out the alternative hypothesis that it might be some stable trait rather than recent paternal incarceration that is driving the results herein. In order to quantify how large such an unobserved factor would have to be to undermine my results, I also present Mantel-Haenszel bounds in table 5 for each of the propensity score models using STATA-compatible software designed by Becker and Caliendo (2007). Simply put, these bounds allow me to demonstrate how much selection into the treatment group there would have to be to render any statistically significant relationships herein nonsignificant. Thus, although these bounds do not adjust for unobserved heterogeneity, they do provide an opportunity to discuss how substantial the effects of unobserved heterogeneity would have to be to undermine my findings.

In the final stage of the analysis (table 6), I test for spuriousness and consider what proportion of the effects of recent paternal incarceration on child homelessness are explained by the mechanisms speculated. In testing for spuriousness, I consider how much the relationship between recent paternal incarceration and child homelessness is diminished by including measures of recent drug and alcohol abuse and domestic violence between 30 and 60 months, while including controls shown in table 2, model 6.[24] In the next five models, I test the hypothesized mechanisms by including the following measures in the models: Familial finances at 60 months (model 2); social and institutional supports at 60 months (model 3); maternal capabilities at 60 months (model 4); all hypothesized mechanisms except domestic violence and drug and alcohol abuse (model 5); and all measures simultaneously (model 6).

RESULTS

Results from Logistic Regression Models

Table 1 showed a descriptive relationship between recent paternal and maternal incarceration and children's risk of homelessness. Children of recently incarcerated mothers and fathers were both 4 percent more likely to be recently homeless than other children (table 1). In table 2, I begin a rigorous investigation of these relationships using logistic regression models. In the first model, I consider the relationship between recent paternal incarceration and child homelessness adjusting for a host of controls. This model does not control for prior housing instability, however. Results show that recent paternal incarceration is associated with a significant (at the .01 level) and substantial increase in the risk of child homelessness. Recent paternal incarceration is associated with a 105 percent ($e^{.72}$) increase in the odds of child homelessness. Thus, these initial results

[24] It should be noted, however, that it may be the case that incarceration led to elevated levels of drug or alcohol abuse or domestic violence (rather than the reverse). As such, these measures may also represent mechanisms.

indicate that recent paternal incarceration may indeed increase the risk of child homelessness. There is no relationship between prior paternal incarceration and child homelessness, however, as the association between them is both small (.01) and statistically nonsignificant. This provides some evidence that recent but not distal parental incarceration promotes child homelessness.[25]

Model 2 includes the same series of controls but predicts the effects of recent maternal incarceration on child homelessness. Though the relationship is positive, it is less than one-half the size of the coefficient for recent paternal incarceration shown previously (.72 to .29) and is not significantly associated with the odds of experiencing child homelessness. Thus, these results imply that recent maternal incarceration is unlikely to increase the risk of child homelessness. Interestingly, a history of maternal incarceration is associated with significantly higher odds of child homelessness—even after including controls. It is hard to know what to make of this finding, but it may be because of what a select group of women ever-incarcerated women are. Results from model 3, which differs from the two previous models in that it includes measures of both paternal and maternal incarceration, provide a similar story. Recent paternal incarceration is associated with a statistically significant (at the .01 level) increase in the odds of child

[25] Readers familiar with the literature on the causes of child homelessness may be quick to note that the protective effect of living with a resident father (e.g., Fertig and Reingold 2008) and negative effect of being African American (e.g., Culhane and Metraux 1999) are not supported in these models. In both cases, the relationships were originally statistically significant and in the expected direction. Yet after adjusting for many covariates not generally available in research on the causes of child homelessness, both relationships were rendered nonsignificant. In order to be sure that these inconsistencies did not suggest problems with the Fragile Families data, I ran a series of robustness checks in which I compared my findings to similar studies. In considering the racial dynamics of child homelessness, I generated estimates of the risk of child homelessness by race for the children in the Fragile Families data and then compared those estimates to the risk of shelter utilization for children ages 0-9 living in New York City in 1995 (Culhane and Metraux 1999:228). Although these samples do not align perfectly, they should be quite similar since they both represent the risks of child homelessness for urban children. In models including only the child's race, I found estimated risks of child homelessness of 4.1 percent for black children, 1.5 percent for white children, and 0.6 percent for Hispanic children. Although the estimate for Hispanics is lower than noted elsewhere (Culhane and Metraux 1999:228), the black-white gap was similar. Furthermore, the black-white gap was significant at the .001 level in the Fragile Families data, further showing that the racial disparities in the risk of child homelessness appear in these data are they do elsewhere. Analyses also suggested that children with resident fathers had a 2.2 percent lower risk of child homelessness in these data than those who did not, a difference that was statistically significant at the .001 level. This again suggests that it is likely the more expansive range of controls I include in my models rather than any unique problematic features of the Fragile Families data that explains these two odd findings.

homelessness, while recent maternal incarceration is not. Thus, results again indicate that recent paternal, but not recent maternal, incarceration increases the risk of child homelessness.

[Insert table 2 about here.]

Since prior housing insecurity might predict both recent paternal incarceration and recent child homelessness, the next three models also control for prior homelessness and housing instability. Results from model 4, which considers the effects of recent paternal incarceration on child homelessness with these additional controls, show that recent paternal incarceration is associated with a significant increase (at the .01 level) in the risk of child homelessness. According to results from this model, recent paternal incarceration increases the odds of child homelessness by about 101 percent ($e^{.70}$). There is no significant relationship between recent maternal incarceration and child homelessness, however. Results from model 5 again show that the relationship between maternal incarceration and child homelessness—though positive—is not significant. In the final model, which includes measures of recent paternal and maternal incarceration, there is again a significant (at the .01 level) and substantial relationship between recent paternal incarceration and child homelessness but no significant relationship between recent maternal incarceration and child homelessness. Thus, results from this model indicate, as have previous models, that paternal but not maternal incarceration promotes child homelessness.

In models 1 through 3 of table 3, I present robustness checks of the relationship between recent paternal incarceration and child homelessness. Specifically, I consider whether the relationship holds when the sample is limited to (1) children of previously-incarcerated fathers and (2) children who have not recently been homeless. Results from these robustness checks provide continued support for the relationship demonstrated in table 2. In each model, recent paternal incarceration is associated with a significant (at the .05 level) and substantial increase in

the risk of child homelessness. Furthermore, the magnitude of the relationship does not vary substantially. According to the high estimate (model 2), recent paternal incarceration is associated with an increase in the odds of child homelessness of about 105 percent ($e^{.72}$); according to the low estimate (model 3), it is associated with an increase in the odds of about 101 percent ($e^{.70}$). Thus, results from these three models highlight the robustness of the relationship.

[Insert table 3 about here.]

Since I expect effects of paternal incarceration on child homelessness to be most pronounced among black children, I also tested for these effects in models 4 and 5 in table 3. In order to do so, I included an interaction between recent paternal incarceration and a variable indicating whether the child was black. Results from model 4, which includes this interaction and all controls except those for prior housing instability, indicate that the negative effects of recent paternal incarceration on child homelessness are indeed concentrated among black children. The interaction is only marginally significant, but the magnitude of that coefficient (1.03) and the main effect (-.14) imply not only that recent paternal incarceration increases the risk of homelessness more among black children than other children, but also that it has no effect on the risk of child homelessness for other children. Results from model 5, which includes all controls, tell a similar story. In this model, all the negative effects of recent paternal incarceration on child homelessness are concentrated among black children. Thus, results from models 4 and 5 suggest that recent paternal incarceration may only increase the risk of homelessness for black children.

Results from Propensity Score Models

Though results to this point have supported my hypotheses, a fair amount of skepticism is in order since covariate adjustment may be an inadequate method for controlling for pre-existing

differences between those experiencing and not experiencing recent paternal incarceration. This skepticism is especially necessary since, as noted in table 1, there are substantial and statistically significant differences between children experiencing recent paternal and maternal incarceration and not experiencing those events in terms of a host of risk factors for child homelessness. In table 4, I present estimates of the effects of recent paternal incarceration on child homelessness using radius, nearest neighbor, and kernel matching for the full, black, and non-black samples. Though propensity score models cannot definitively circumvent omitted variable bias, it would increase confidence in the findings presented in tables 2 and 3 if the relationships demonstrated using these models was similar. In addition, I present estimates of the magnitude of the effects of recent paternal incarceration on child homelessness based on point estimates from logistic regression models. As table 4 indicates, some of these models are based on predictions holding all other values at the sample mean, while others are based on the means for those experiencing recent paternal incarceration since that may be a more appropriate point of comparison. I consider only recent paternal incarceration from this point on since results from models shown in tables 2 and 3 never showed a statistically significant effect of recent maternal incarceration.

In the first column in table 4, I present estimated effects of recent paternal incarceration on the risk of child homelessness for the total sample using three different types of propensity score models. In each case, recent paternal incarceration is associated with a statistically significant (at the .001 level) increase in the probability of experiencing child homelessness. Furthermore, these effects are substantial. Having a father experience incarceration between 31 and 60 months increased the probability of child homelessness between .038 and .039, depending on the model considered. Importantly, this is comparable to the magnitude of the relationship shown in the descriptive results (table 1). Further down the column, I compare the magnitude

and statistical significance from the propensity score models to those obtained from the logistic regression models shown in tables 2 and 3. In each of the four logistic regression models used as points of comparison, the relationship is less statistically significant than are the results shown in the potentially more rigorous propensity score models. The magnitudes of the effects derived from the propensity score and logistic regression models are comparable. However, this is only the case when the estimated effects from the logistic regression models are based on the group means for those experiencing recent paternal incarceration. When they are based on the group means for the total sample, estimates derived using logistic regression models are about one-quarter the size of those derived using propensity score models. Thus, though the results were similar in that they supported my hypotheses, propensity score models tended to produce more substantial, significant, and easily interpretable estimates than the logistic regression models.[26]

[Insert table 4 about here.]

Results from propensity score models for the full sample supported the negative effects of having a recently incarcerated father on children's risk of homelessness. In the final two columns of table 4, I present estimates of the effects of recent paternal incarceration on the risk of homelessness for black and non-black children. Before discussing these results further, it is worth noting that these models (unlike those presented for the total sample) do not perfectly overlap with the logistic regression models considering race-specific effects because those

[26] As table A2 shows, this pattern is even more pronounced in the robustness checks. In the models that adjust for self-control but do not limit the sample to families living at or below the poverty line at 30 months, for instance, logistic regression estimates for the total sample are generally only marginally significant (at the .10 level), while estimates derived from propensity score models for the total sample are always statistically significant at least at the .05 level. Although table A2 does not yield insight into differences in the magnitude of the effects, supplementary analyses (available upon request from the author) suggest that even when estimated effects from the logistic regression models are based on the sample means for those experiencing recent paternal incarceration, estimates derived from the propensity score models are still nearly twice as large as the estimated effects derived using logistic regression models. Thus, although differences in the magnitude of the effects shown in the main models presented in the text are modest, differences are much more substantial in some of the robustness checks shown in table A2.

models used an interaction, while the propensity score models instead estimate race-specific effects using race-specific models. Despite these differences in the methods used for estimating race-specific effects, results from propensity score models generally support the hypothesis that the negative effects of recent paternal incarceration on child homelessness are concentrated among black children. For black children, having a recently incarcerated father increases the probability of child homelessness between .043 and .048, and the relationship between these two experiences is always statistically significant at least at the .01 level or better. Although these effects are more statistically significant than those shown in logistic regression models, they are comparable to results from logistic regression models limited to black children.[27] For non-black children, however, estimates range from .000 to .004 and never approach statistical significance. Thus, results from propensity score models generally support the hypothesis that the effects of recent paternal incarceration on child homelessness are concentrated among black children.

Of course, it might be the case that there is some unobserved factor shaping both the risk of child homelessness and the risk of recent paternal incarceration. Although there is no way to directly address the degree to which selection into recent paternal incarceration rather than any real effect of recent paternal incarceration is driving the results herein without using an entirely different modeling strategy, I can provide indirect information to that effect using Mantel-Haenszel bounds (Becker and Caliendo 2007). Put simply, Mantel-Haenszel bounds demonstrate how substantial selection would have to be to render the relationships herein nonsignificant by showing how levels of significance for the relationship considered change as the unobserved selection factor (Gamma) increases. Although these estimates can be used to estimate how levels

[27] These supplementary analyses are available upon request from the author, as are results for non-black children.

of statistical significance change if the relationship is overestimated and underestimated, it is common practice to focus only on bias related to overestimation of the treatment effect.

[Insert table 5 about here.]

In table 5, I present estimates of how sensitive the propensity score results estimated in table 4 are to unobserved selection forces.[28] In the first three columns of table 5, which present estimates for the propensity score models considering the full sample of children, results imply that unobserved selection forces would have to increase the odds of receiving the treatment by between 113 (neighbor) and 150 (radius and kernel) percent. Thus, any unobserved selection factor would have had to more than double the odds of receiving treatment in order to render the relationships considered here nonsignificant. Although the comparison odds ratios are somewhat smaller for the black sample, ranging from 88 (neighbor) to 138 (kernel), this is driven exclusively by the inflated standard errors for this subsample as a result of the smaller number of cases. Nonetheless, even though these odds ratios are smaller than those presented for the full sample, they still indicate that an unobserved selection factor would have to nearly double the odds of receiving the treatment in order to render the relationships nonsignificant. To put the magnitude of these odds ratios into context, consider that in none of the six propensity score models did prior paternal incarceration—the factor that always had the strongest influence on the risk of experiencing recent paternal incarceration—increase the risk of recent paternal incarceration so substantially. Thus, if there are selection factors at work here, they would need to have a more powerful influence on the risk of experiencing recent paternal incarceration than prior paternal incarceration does in order to render the relationships herein nonsignificant.

[28] I do not discuss the Mantel-Haenszel bounds for the non-black sample since there was no significant relationship between recent paternal and child homelessness for them. Nonetheless, these results are available upon request.

Results from Logistic Regression Models Considering Mechanisms

Thus far, the results have suggested that recent paternal incarceration increases the risk of child homelessness and that these effects are concentrated among black children. Nonetheless, the analyses to this point have done little to diminish concerns about spuriousness or tested for possible mechanisms. In table 6, I present results from just such models. All models shown in table 6 take the .67 coefficient for recent paternal incarceration shown in model 6 of table 2 as their baseline. In model 1, I attempt to diminish concerns about spuriousness by including measures of recent drug or alcohol abuse and domestic violence. These measures gauge what share of changes in the risk of child homelessness attributed to recent paternal incarceration may be due to other changes that occurred around the same time as incarceration and homelessness and caused both of them.[29] Results from this model suggest that a non-negligible share of the relationship may by spurious. When these measures are included in the model, the coefficient for recent paternal incarceration decreases from .67 to .49—a decrease of about 27 percent.

[Insert table 6 about here.]

Though some of the relationship may be spurious, some of the relationship could still be driven by the proposed mechanisms. In the next five models, I consider what share of the relationship is explained by the proposed mechanisms. Results from model 2, which includes measures of family finances, indicate that about 13 percent of the effects of recent paternal incarceration on the risk of child homelessness are attributable to family finances at 60 months. Measures of social and institutional support at 60 months tell a similar story, explaining about 13 percent of the recent paternal incarceration-child homelessness relationship. Given how difficult it is to measure what proportion of the loss of a housing subsidy or public housing is attributable

[29] Recent paternal incarceration might have caused higher levels of domestic violence or drug abuse, of course.

to recent paternal incarceration, however, it is quite likely that this is a substantial underestimate of how strong a role institutional supports play in mediating the relationships considered here. While the first two sets of speculated mechanisms received some support, maternal capacities appear to play only a small role in mediating this relationship. Results from model 4, which includes numerous measures of maternal capacities at 60 months, indicate that including these measures explains only 3 percent of the relationship considered. Thus, while family finances and supports play an important role in mediating the paternal incarceration-child homelessness relationship, maternal capacities (as measured here) have a negligible effect at best.

In the final two models in table 6, I consider how much of the relationship is mediated by the full set of mediators without adjusting for spuriousness (model 5) and with an adjustment for spuriousness (model 6). In model 5, the coefficient for recent paternal incarceration diminishes from .67 to .56 when all measures are included, suggesting that these measures mediate about 17 percent of the relationship between recent paternal incarceration and child homelessness. In the final model, which includes both hypothesized mechanisms and an adjustment for spuriousness, the coefficient for recent paternal incarceration diminishes to .42 and is rendered nonsignificant for the first time in this table. Including all mechanisms and an adjustment for spuriousness simultaneously explains about 37 percent of the relationship considered here. Interestingly, it appears that the measures of spuriousness and the speculated mechanisms are mostly operating independently of one another, as each reduces the coefficient for recent paternal incarceration a comparable amount in isolation and in conjunction with each other. Thus, results from models shown in table 6 indicate that the speculated mechanisms explain some (but by no means all) of the relationship between paternal incarceration and child homelessness demonstrated here.

DISCUSSION

The analyses herein sought to consider the effects of recent paternal and maternal incarceration on child homelessness using Fragile Families and Child Wellbeing data. By using data uniquely suited to considering these research questions, this article yields insight not only into the causes of child homelessness but also into the invisible consequences of mass imprisonment. Results from a series of logistic regression and propensity score models (tables 2 and 4) consistently indicated that recent paternal incarceration increases the risk of child homelessness. Robustness checks and sensitivity analyses (tables 3 and A2) provided further indications that the recent paternal incarceration-child homelessness relationship was robust. And though some might argue that the relationship was driven by unobserved factors, results from a series of Mantel-Haenszel tests (table 5) indicated that any such selection forces would have had to increase the risk of recent paternal incarceration more than even prior paternal incarceration did to render the paternal incarceration-child homelessness relationship nonsignificant. Thus, although I could not control for stable but unobserved traits, results imply that selection is unlikely driving the results.

Furthermore, the magnitude of these effects was substantial. Estimated effects of recent paternal incarceration on the risk of child homelessness ranged from about 3 to 4 percent when an appropriate comparison group was chosen. Since child homelessness is such a rare event even among the disadvantaged children in this sample, it would be fair to call these effects substantial. Though the speculated mediators between recent paternal incarceration and child homelessness did not explain all of this relationship, they did explain about 15 percent of the relationship remaining after adjusting for the possibility that the relationship was spurious. What's more, after including both mechanisms and possibly spurious factors, I am able to explain nearly 40 percent of the relationship between recent paternal incarceration and child homelessness. This is

especially relevant since it is equally plausible that incarceration, by destabilizing the family lives of incarcerated men, would be responsible for the elevated levels of drug and alcohol abuse and domestic violence that mediate the paternal incarceration-child homelessness relationship.

Unfortunately, it is difficult to tell why the speculated mechanisms did not explain more of the relationship, but three factors could be to blame. First, and most importantly, I lacked measures of some of the mechanisms that seem most central to increases in the risk of child homelessness as a result of paternal incarceration, such as the accumulation of substantial legal debt (Harris et al. 2010) and increased costs as a result of having a family member incarcerated (Braman 2004; Comfort 2008; Grinstead et al. 2001). Second, it is difficult to tell what share of losses of cash welfare, public housing, and housing subsidies occurred as a result of incarceration and signal unmet need in those areas. Thus, these measures may not capture the degree to which these changes mediate the relationship. Finally, most mediators covered only the last year. Had they been measured over a longer period, they might have explained more of the relationship.

Though results suggested a robust relationship between recent paternal incarceration and child homelessness, they did not suggest that recent maternal incarceration had any significant effect on the risk of child homelessness. The relationship between recent maternal incarceration and child homelessness was always positive, but coefficients were generally around one-third as large as coefficients for recent paternal incarceration and never approached significance. Since I hypothesized that foster care placement would divert children experiencing recent maternal incarceration from child homelessness, this confirmed my hypothesis. There was a significant relationship between having a mother with a history of incarceration and child homelessness, however. Though considering the effects of distal maternal (or paternal) incarceration was not a goal of this analysis, this finding merits attention since it suggests that children of mothers with a

history of incarceration may be at elevated risk of homelessness and other forms of severe marginalization beyond what would be expected. Despite this interesting and substantively important caveat, the main results nonetheless suggest that changes in female imprisonment rates likely did not play a key role in the increasing risk of child homelessness in recent decades.

Possibly even more important than knowing that recent paternal but not maternal incarceration increases the risk of child homelessness is finding out that these effects were concentrated among black children. Results from logistic regression (table 3) and propensity score (table 4) models suggested as much. This indicates that the prison boom may not only have increased the share of the homeless population composed of black children because of their disproportionate likelihood of coming into contact with the penal system, but also because doing so disproportionately increases their risk of homelessness. Though I speculated about why this would be the case, the data utilized are not well-suited for testing such speculations. Future research should further interrogate why black children are especially likely to experience homelessness as a result of recent paternal incarceration. Though prior analyses have considered the consequences of parental incarceration for child wellbeing (Murray and Farrington 2008 review the literature), little attention has been paid to whether black children suffer more as a result of parental incarceration than other children. Given the findings shown here, research should be more attentive to the disproportionately detrimental effects of parental incarceration on black children—especially as relates to severe forms of social exclusion such as homelessness.

The findings presented throughout this article are provocative, but this study still has numerous limitations. An especially serious limitation is that incarceration is not randomly assigned. Searching for exogeneity is always important, but it may be especially so in this area since selection problems are so acute (Wakefield and Uggen 2010:399-400). Some research in

this area utilizes exogenous shocks to isolate effects of the imprisonment rate or specific policies (Drago, Galbiati, and Vertova 2009; Fagan 1996; Levitt 1996), yet random assignment at the micro-level poses problems for outcomes that cannot be studied using an experimental audit design (Pager 2003; Wakefield and Uggen 2010:400; but see Green and Winik 2010). Attrition is also a serious problem. In light of substantial attrition, the findings presented here may not be representative of the full sample. Though the results presented here may underestimate the relationship between recent paternal incarceration and child homelessness since those factors are likely to lead to attrition, this is still a substantial limitation. Another limitation is that the sample is not fully representative, calling into question how generalizable the results are. Although the effect in a population-based survey with no missing data would likely be smaller than in the sample considered here with no missing data because of how much closer the children in the Fragile Families sample are to the threshold for becoming homeless, missing data in Fragile Families likely leads my estimates to be smaller than the true effect in this group. I cannot be certain, but I expect that these two forces basically offset each other, leaving my point estimates close to what we would see in the population. A final limitation has to do with the inability to consider the duration of homelessness, be certain that the child was living with the parent while they were homeless, or know whether children not staying in a shelter at 60 months had stayed in one in the last year. Although these problems with the dependent variables are not so serious that they undermine my findings, an improved measure is sorely needed for future research.

Despite these limitations, this study has a number of implications for how we think about the Americans systems of mass imprisonment, stratification, and marginalization. Maybe most importantly, results indicate that paternal and maternal incarceration lead to parallel paths of marginalization for American children. While the effects of maternal incarceration on children's

risk of foster care placement have been well-documented (Swann and Sylvester 2006), this study is the first to show that recent paternal but not maternal incarceration increases the risk of child homelessness. Second, the substantial effects of recent paternal incarceration on the risk of child homelessness have important implications at the macro-level—especially since these estimates were culled from the strongest empirical test in this area to date. When these negative effects are combined with massive increases and racial disparity in the risk of paternal imprisonment since the early 1980s, these findings imply that the prison boom may have played a role in the increasing risk of homelessness for American children over this period—and that effects on the risk of homelessness for black children may have been especially profound since they are more likely to experience parental imprisonment and more likely to become homeless as a result of experiencing that event. Thus, while economic downturns cause widespread concern about children's housing instability (Rugh and Massey 2010), the prison boom may have played a silent but vital role in the increasing risk of homelessness for American children even when the economy was healthy. Finally, result suggest that researchers of the American stratification system should continue considering the myriad—and not necessarily obvious—ways in which mass imprisonment could have contributed to both the existing system of social stratification in America and the risk of experiencing severe forms of marginalization for American children.

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TABLE 1
Descriptive Statistics for the Full Sample and by New Paternal and Maternal Incarceration

	Full Sample		New Paternal Inc.		No New Paternal Inc.		New Maternal Inc.		No New Maternal Inc.	
	M	SD	M	SD	M	SD	M	SD	M	SD
Homeless at 60 Months	.03	---	.06***	---	.02***	---	.07#	---	.03#	---
New Paternal Incarceration	.17	---	---	---	---	---	.39***	---	.17***	---
Prior Paternal Incarceration	.41	---	.78***	---	.34***	---	.65***	---	.41***	---
New Maternal Incarceration	.03	---	.06***	---	.02***	---	---	---	---	---
Prior Maternal Incarceration	.06	---	.13***	---	.05***	---	.44***	---	.05***	---
Maternal Age	25.15	(6.05)	23.00***	(5.39)	25.60***	(6.08)	25.53*	(5.57)	25.20*	(6.05)
Paternal Age	27.78	(7.22)	25.56***	(6.92)	28.23***	(7.19)	26.90	(8.52)	27.80	(7.18)
Mother HS Dropout	.33	---	.44***	---	.31***	---	.46*	---	.33*	---
Father HS Dropout	.35	---	.49***	---	.32***	---	.41	---	.35	---
Child's Race/Ethnicity										
Black	.54	---	.71***	---	.51***	---	.56	---	.54	---
Hispanic	.26	---	.19***	---	.28***	---	.19#	---	.26#	---
Other	.03	---	.01***	---	.03***	---	.05	---	.03	---
White	.17	---	.09***	---	.19***	---	.19	---	.17	---
Mother's Other Children (0-12)	1.12	(1.32)	1.19	(1.34)	1.12	(1.32)	1.35	(1.54)	1.12	(1.32)
Caretaker's Self-Rated Health at 30 Months (1-5)	2.19	(.90)	2.27*	(.96)	2.18*	(.89)	2.35	(1.06)	2.19	(.90)
Caretaker an Immigrant	.14	---	.06***	---	.16***	---	.05**	---	.14**	---
Maternal Smoking During Pregnancy (0-2)	.22	(.47)	.32***	(.52)	.20***	(.46)	.49***	(.67)	.21***	(.46)
Either Parent Had Drug/Alcohol Problem by 30 Months	.21	---	.39***	---	.17***	---	.47***	---	.20***	---
Domestic Abuse by 30 Months	.08	---	.15*	---	.06	---	.23***	---	.07***	---
Resident Father at 30 Months	.52	---	.30***	---	.57***	---	.30***	---	.53***	---
Household Income/Poverty Level at 30 Months	2.08	(2.61)	1.30***	(2.07)	2.24***	(2.68)	1.23***	(1.09)	2.10***	(2.63)
Unable to Pay Bills at 30 Months (0-4)	.57	(.85)	.77***	(.95)	.53***	(.82)	.77*	(.96)	.57*	(.85)
Caregiver Lacks Social Support at 30 Months (0-4)	.86	(1.08)	1.16***	(1.19)	.79***	(1.05)	1.30**	(1.19)	.85**	(1.08)
Caregiver Lives in Public Housing at 30 Months	.16	---	.20**	---	.15**	---	.19	---	.16	---
Caregiver Receives Housing Subsidy at 30 Months	.16	---	.24***	---	.14***	---	.18	---	.15	---
Caregiver Receives Cash Welfare at 30 Months	.22	---	.38***	---	.18***	---	.37*	---	.21*	---
Mother Depressed at 30 Months	.20	---	.30***	---	.18***	---	.29#	---	.20#	---
Maternal Life Dissatisfaction at 30 Months (1-4)	1.71	(.72)	1.94***	(.79)	1.67***	(.70)	2.10***	(.80)	1.70***	(.72)
Maternal Stress at 30 Months (1-4)	2.70	(.72)	2.60***	(.76)	2.72***	(.71)	2.36***	(.80)	2.71***	(.72)
Homeless at 30 Months	.03	---	.07***	---	.02***	---	.09*	---	.03*	---
Number of Moves in Last 18 Months at 30 Months	.80	(.90)	1.02***	(1.05)	.76***	(.87)	1.32***	(1.07)	.79***	(.90)
Evicted in the Last Year at 30 Months	.02	---	.03*	---	.02*	---	.07#	---	.02#	---
N	3774		653		3121		98		3676	

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).
NOTE: Two-sided t-tests show differences between those experiencing and not experiencing new incarceration.
*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE 2
Results from Logistic Regression Models Predicting Child Homelessness, All Coefficients (Log-Odds)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
New Paternal Incarceration	.72**	(.26)	---	---	.68**	(.26)	.70**	(.28)	---	---	.67**	(.28)
Prior Paternal Incarceration	.01	(.23)	---	---	-.02	(.24)	-.07	(.23)	---	---	-.10	(.23)
New Maternal Incarceration	---	---	.29	(.43)	.21	(.41)	---	---	.21	(.47)	.17	(.44)
Prior Maternal Incarceration	---	---	.86*	(.37)	.83*	(.38)	---	---	.73#	(.38)	.69#	(.38)
Maternal Age	-.02	(.04)	-.02	(.04)	-.02	(.04)	-.01	(.04)	-.01	(.04)	-.01	(.04)
Paternal Age	-.01	(.01)	-.01	(.01)	-.01	(.01)	-.01	(.02)	-.02	(.02)	-.01	(.02)
Mother HS Dropout	-.00	(.25)	.01	(.24)	-.01	(.25)	.03	(.28)	.04	(.27)	.02	(.28)
Father HS Dropout	-.18	(.25)	-.16	(.25)	-.16	(.26)	-.11	(.26)	-.10	(.26)	-.10	(.26)
Child's Race/Ethnicity												
Black	.40	(.43)	.40	(.39)	.36	(.41)	.27	(.42)	.30	(.37)	.25	(.39)
Hispanic	-.97	(.61)	-.95	(.60)	-.95	(.60)	-1.03#	(.62)	-1.03#	(.61)	-1.03#	(.61)
Other	-.30	(.91)	-.45	(.95)	-.44	(.98)	-.50	(.90)	-.59	(.93)	-.61	(.96)
Mother's Other Children (0-12)	-.04	(.13)	-.05	(.13)	-.06	(.13)	-.02	(.14)	-.04	(.14)	-.04	(.14)
Caretaker's Self-Rated Health at 30 Months (1-5)	.01	(.09)	-.01	(.08)	.01	(.09)	.00	(.09)	-.00	(.09)	.00	(.09)
Caretaker an Immigrant	.35	(.43)	.34	(.45)	.40	(.45)	.52	(.43)	.53	(.46)	.57	(.45)
Maternal Smoking During Pregnancy (0-2)	.43*	(.17)	.33#	(.17)	.33#	(.18)	.45**	(.17)	.39*	(.15)	.39*	(.17)
Either Parent Had Drug/Alcohol Problem by 30 Months	.31	(.27)	.32	(.25)	.23	(.27)	.26	(.27)	.26	(.25)	.18	(.28)
Domestic Abuse by 30 Months	-.15	(.31)	-.15	(.33)	-.22	(.33)	-.16	(.33)	-.17	(.35)	-.21	(.34)
Resident Father at 30 Months	-.01	(.24)	-.04	(.21)	-.01	(.23)	-.01	(.27)	-.03	(.25)	-.01	(.26)
Household Income/Poverty Level at 30 Months	-.37**	(.14)	-.39**	(.14)	-.37**	(.14)	-.34**	(.12)	-.36**	(.13)	-.33**	(.13)
Unable to Pay Bills at 30 Months (0-4)	.39**	(.14)	.40**	(.15)	.41**	(.15)	.37*	(.16)	.37*	(.16)	.39*	(.16)
Caregiver Lacks Social Support at 30 Months (0-4)	.19*	(.08)	.18*	(.08)	.17*	(.08)	.14	(.09)	.13	(.08)	.13	(.08)
Caregiver Lives in Public Housing at 30 Months	-.32	(.29)	-.30	(.28)	-.29	(.29)	-.24	(.29)	-.21	(.28)	-.21	(.29)
Caregiver Receives Housing Subsidy at 30 Months	-.35	(.22)	-.37#	(.22)	-.36	(.22)	-.33	(.20)	-.33	(.25)	-.33	(.25)
Caregiver Receives Cash Welfare at 30 Months	.47**	(.17)	.50**	(.18)	.47**	(.17)	.35#	(.13)	.39#	(.20)	.37#	(.19)
Mother Depressed at 30 Months	-.11	(.26)	-.05	(.24)	-.09	(.26)	-.16	(.29)	-.08	(.23)	-.14	(.25)
Maternal Life Dissatisfaction at 30 Months (1-4)	.15	(.13)	.16	(.13)	.14	(.14)	.13	(.13)	.13	(.13)	.12	(.14)
Maternal Stress at 30 Months (1-4)	-.17	(.19)	-.16	(.19)	-.15	(.19)	-.15	(.19)	-.13	(.19)	-.14	(.19)
Homeless at 30 Months	---	---	---	---	---	---	1.56***	(.29)	1.53***	(.30)	1.50***	(.29)
Number of Moves in Last 18 Months at 30 Months	---	---	---	---	---	---	.21*	(.09)	.22*	(.09)	.22*	(.09)
Evicted in the Last Year at 30 Months	---	---	---	---	---	---	.01	(.64)	-.05	(.66)	.01	(.65)
Intercept	-2.57*	(1.04)	-2.26*	(1.06)	-2.54*	(1.04)	-3.09***	(.95)	-2.26*	(.97)	-3.07**	(.97)
-2 Log Likelihood	783.31		784.58		776.29		751.41		753.91		746.52	
N	3774		3774		3774		3774		3774		3774	

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: All t-tests for paternal and maternal incarceration are one-sided. All other t-tests are two-sided. All models include city dummies, and all t-tests use clustered standard errors to account for the clustering of observations within cities.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE 3
Further Results from Logistic Regression Models Predicting Child Homelessness, Selected Coefficients (Log-Odds)

	Model 1		Model 2		Model 3		Model 4		Model 5	
New Paternal Incarceration	.71*	(.30)	.72*	(.31)	.70*	(.35)	-.14	(.65)	-.20	(.70)
New Paternal Incarceration * Child Black	---	---	---	---	---	---	1.03#	(.72)	1.09#	(.73)
Prior Paternal Incarceration	---	---	---	---	-.17	(.21)	-.01	(.24)	-.09	(.24)
New Maternal Incarceration	.16	(.53)	.22	(.49)	.25	(.48)	.23	(.40)	.17	(.43)
Prior Maternal Incarceration	.84*	(.40)	.62	(.39)	.86#	(.52)	.80*	(.40)	.68#	(.39)
Intercept	-1.67	(1.42)	-2.10#	(1.26)	-3.01***	(1.08)	-2.42*	(1.03)	-2.99**	(.97)
Includes All Controls Except Housing?	YES		NO		NO		YES		NO	
Includes All Controls?	NO		YES		YES		NO		YES	
Limited to Children of Ever-Incarcerated Fathers?	YES		YES		NO		NO		NO	
Limited to Children Not Homeless at 30 Months?	NO		NO		YES		NO		NO	
-2 Log Likelihood	432.12		408.01		632.76		772.99		742.97	
N	1561		1561		3663		3774		3774	

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: All t-tests for paternal and maternal incarceration are one-sided. All other t-tests are two-sided. All models include city dummies, and all t-tests use clustered standard errors to account for the clustering of observations within cities.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE 4
Estimated Change in the Probability of Experiencing Homelessness Associated with Recent Paternal Incarceration, Propensity Score and Logistic Regression Models

Estimated Effect Based on Model	Total		Black		Non-Black	
Propensity Score Models						
Radius	.038***	(.010)	.044***	(.014)	.000	(.014)
Nearest Neighbor	.039***	(.011)	.043**	(.015)	.000	(.015)
Kernel	.038***	(.010)	.048***	(.014)	.004	(.013)
Logistic Regression Models						
Table 2, Model 1						
Sample Mean	.008**	---	---	---	---	---
Recent Paternal Incarceration Mean	.039**	---	---	---	---	---
Table 2, Model 3						
Sample Mean	.008**	---	---	---	---	---
Recent Paternal Incarceration Mean	.037**	---	---	---	---	---
Table 2, Model 4						
Sample Mean	.008**	---	---	---	---	---
Recent Paternal Incarceration Mean	.036**	---	---	---	---	---
Table 2, Model 6						
Sample Mean	.007**	---	---	---	---	---
Recent Paternal Incarceration Mean	.035**	---	---	---	---	---
Table 3, Model 4						
Sample Mean	---	---	.028#	---	-.003	---
Recent Paternal Incarceration Mean	---	---	.062#	---	-.008	---
Table 3, Model 5						
Sample Mean	---	---	.030#	---	-.005	---
Recent Paternal Incarceration Mean	---	---	.065#	---	-.010	---

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: The N of observations used in the propensity score models were the following: Total (Radius = 3766, Neighbor = 3766, Kernel = 3772); Black (Radius = 2040, Neighbor = 2040, Kernel = 2046); and Non-Black (Radius = 1713, Neighbor = 1713, Kernel = 1722). For more information on the propensity score models, see the text or contact the author. Estimated effects using logistic regression models were based on the effects shown in Tables 2 and 3, holding all values except for recent paternal incarceration at the sample mean (Table 1, Column 1) or the mean for those experiencing recent paternal incarceration (Table 1, Column 2). Estimates of significance are drawn from the same models. Logistic regression models limited to Blacks showed significant associations at the .01 level in both models, but I present significance levels for the interactions shown in Table 3 rather than those main effects. All t-tests are one-sided.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE 5
Results from Sensitivity Analysis for Average Treatment Effects (Assuming Overestimation of the Treatment Effect)

Full Sample						Black Sample					
Radius		Nearest Neighbor		Kernel		Radius		Nearest Neighbor		Kernel	
Gamma	p	Gamma	p	Gamma	p	Gamma	p	Gamma	p	Gamma	p
1.00	<.001	1.00	<.001	1.00	<.001	1.00	<.001	1.00	<.001	1.00	<.001
1.13	<.001	1.13	<.001	1.13	<.001	1.13	<.001	1.13	<.001	1.13	<.001
1.25	<.001	1.25	<.001	1.25	<.001	1.25	<.001	1.25	<.001	1.25	<.001
1.38	<.001	1.38	.001	1.38	<.001	1.38	<.001	1.38	.003	1.38	<.001
1.50	<.001	1.50	.002	1.50	<.001	1.50	<.001	1.50	.008	1.50	<.001
1.63	<.001	1.63	.004	1.63	<.001	1.63	.001	1.63	.016	1.63	.001
1.75	<.001	1.75	.008	1.75	<.001	1.75	.003	1.75	.030	1.75	.003
1.88	.001	1.88	.017	1.88	.001	1.88	.007	**1.88**	**.050**	1.88	.006
2.00	.003	2.00	.030	2.00	.003	2.00	.013	**2.00**	**.075**	2.00	.011
2.13	.006	**2.13**	**.048**	2.13	.007	2.13	.024	2.13	.106	2.13	.021
2.25	.012	**2.25**	**.071**	2.25	.013	**2.25**	**.039**	2.25	---	2.25	.035
2.38	.022	2.38	.100	2.38	.024	**2.38**	**.054**	2.38	---	**2.38**	**.050**
2.50	**.036**	2.50	.132	**2.50**	**.039**	2.50	.083	2.50	---	**2.50**	**.075**
2.63	**.055**	2.63	---	**2.63**	**.059**	2.63	.111	2.63	---	2.63	.102
2.75	.079	2.75	---	2.75	.084	2.75	---	2.75	---	2.75	---
2.88	.107	2.88	---	2.88	.114	2.88	---	2.88	---	2.88	---
3.00	---	3.00	---	3.00	---	3.00	---	3.00	---	3.00	---

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: All p-values are based on one-sided significance tests. Results are based on sensitivity analyses implemented using STATA-compatible software designed by Becker and Caliendo (2007) and Leuven and Sianesi (2003). All p-values (except the first one) exceeding .10 have been left blank to make the point at which the relationships are not even marginally significant obvious. I have also noted the point at which the relationship becomes nonsignificant at the conventional .05 level in each of the six models.

TABLE 6
Results from Logistic Regression Models Considering Mechanisms Linking Recent Paternal Incarceration and Child Homelessness (Log-Odds)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
New Paternal Incarceration	.49*	(.29)	.58*	(.32)	.58*	(.32)	.65*	(.29)	.56*	(.33)	.42	(.33)
Either Parent Had Recent Drug/Alcohol Problem	1.06***	(.30)	---	---	---	---	---	---	---	---	1.11***	(.32)
New Domestic Abuse	.68*	(.32)	---	---	---	---	---	---	---	---	.55	(.34)
Resident Father at 60 Months	---	---	-.28	(.24)	---	---	---	---	-.22	(.24)	-.09	(.29)
Household Income/Poverty Level at 60 Months	---	---	-.40**	(.13)	---	---	---	---	-.38**	(.14)	-.42**	(.15)
Unable to Pay Bills at 60 Months	---	---	.13	(.12)	---	---	---	---	.07	(.11)	-.00	(.10)
Number of Moves in Last 18 Months at 60 Months	---	---	.75***	(.16)	---	---	---	---	.72***	(.15)	.73***	(.14)
Evicted in the Last Year at 60 Months	---	---	1.64***	(.45)	---	---	---	---	1.61***	(.46)	1.65***	(.47)
Caregiver Lacks Social Support at 60 Months	---	---	---	---	.31***	(.10)	---	---	.25**	(.09)	.29**	(.10)
Caregiver Lost Public Housing	---	---	---	---	.91*	(.37)	---	---	.32	(.30)	.41	(.33)
Caregiver Lost Housing Subsidy	---	---	---	---	.90*	(.36)	---	---	.46	(.35)	.46	(.35)
Caregiver Lost Cash Welfare	---	---	---	---	-.75**	(.24)	---	---	-.65*	(.26)	-.69*	(.27)
Mother Depressed at 60 Months	---	---	---	---	---	---	.63#	(.34)	.51	(.36)	.45	(.37)
Maternal Life Dissatisfaction at 60 Months	---	---	---	---	---	---	.05	(.15)	-.11	(.16)	-.15	(.18)
Maternal Stress at 60 Months	---	---	---	---	---	---	-.15	(.16)	-.05	(.17)	-.04	(.16)
Intercept	-3.02**	(.99)	-4.09***	(.96)	-3.47***	(1.07)	-3.02***	(1.18)	-4.22***	(1.11)	-4.32***	(1.13)
Includes All Controls?	YES		YES		YES		YES		YES		YES	
-2 Log Likelihood	728.30		662.82		724.70		738.51		649.34		634.54	
N	3774		3774		3774		3774		3774		3774	

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: All t-tests for paternal incarceration are one-sided. All other t-tests are two-sided. All models include city dummies, and all t-tests use clustered standard errors to account for the clustering of observations within cities.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE A1
Descriptive Statistics for Children Experiencing New Paternal Incarceration by Child Race

	Black Children		All Other Children	
	M	SD	M	SD
Homeless at 60 Months	.08**	---	.03**	---
Prior Paternal Incarceration	.81**	---	.71**	---
New Maternal Incarceration	.06	---	.06	---
Prior Maternal Incarceration	.14	---	.11	---
Maternal Age	22.57**	(4.98)	24.04**	(6.17)
Paternal Age	25.11*	(6.64)	26.64*	(7.48)
Mother HS Dropout	.44	---	.45	---
Father HS Dropout	.50	---	.51	---
Child's Race/Ethnicity				
Black	1.00***	---	.00***	---
Hispanic	.00***	---	.66***	---
Other	.00***	---	.04***	---
White	.00***	---	.29***	---
Mother's Other Children (0-12)	1.23	(1.39)	1.09	(1.20)
Caretaker's Self-Rated Health at 30 Months (1-5)	2.21*	(.94)	2.42*	(.99)
Caretaker an Immigrant	.02***	---	.15***	---
Maternal Smoking During Pregnancy (0-2)	.30	(.52)	.38	(.55)
Either Parent Had Drug/Alcohol Problem by 30 Months	.35**	---	.48**	---
Domestic Abuse by 30 Months	.14	---	.19	---
Resident Father at 30 Months	.24***	---	.44***	---
Household Income/Poverty Level at 30 Months	1.27	(2.31)	1.38	(1.30)
Unable to Pay Bills at 30 Months (0-4)	.75	(.93)	.81	(1.00)
Caregiver Lacks Social Support at 30 Months (0-4)	1.21	(1.19)	1.06	(1.20)
Caregiver Lives in Public Housing at 30 Months	.24***	---	.11***	---
Caregiver Receives Housing Subsidy at 30 Months	.27**	---	.16**	---
Caregiver Receives Cash Welfare at 30 Months	.42**	---	.31**	---
Mother Depressed at 30 Months	.27*	---	.37*	---
Maternal Life Dissatisfaction at 30 Months (1-4)	1.93	(.76)	1.96	(.85)
Maternal Stress at 30 Months (1-4)	2.56	(.77)	2.69	(.73)
Homeless at 30 Months	.08#	---	.04#	---
Number of Moves in Last 18 Months at 30 Months	.97#	(.97)	1.15#	(1.22)
Evicted in the Last Year at 30 Months	.02*	---	.06*	---
N	464		189	

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTE: Two-sided t-tests show differences between black children and all other children. The sample is limited to children experiencing recent paternal incarceration.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE A2
Robustness Checks and Alternate Specifications

Estimated Effect of Recent Pat. Incarceration Based on Model	Main Results		Adjusts for Self-Control, No Poverty Sample Restriction		No Adjustment for Self-Control, Poverty Sample Restriction		Adjusts for Self-Control, Poverty Sample Restriction	
Logistic Regression Models								
Table 2								
Model 1	.72**	(.26)	.42#	(.26)	.97***	(.31)	.79**	(.29)
Model 3	.68**	(.26)	.40#	(.26)	.96***	(.31)	.79**	(.29)
Model 4	.70**	(.28)	.41#	(.29)	.92**	(.32)	.74**	(.30)
Model 6	.67**	(.28)	.39#	(.29)	.93**	(.32)	.74**	(.31)
Table 3								
Model 1	.71**	(.30)	.47*	(.28)	1.13**	(.38)	1.00**	(.36)
Model 2	.72**	(.31)	.50*	(.30)	1.09**	(.39)	.98**	(.38)
Model 3	.70*	(.35)	.41	(.36)	.88*	(.49)	.71#	(.46)
Propensity Score Models								
Total								
Radius	.039***	(.010)	.031**	(.011)	.055**	(.019)	.052***	(.018)
Nearest Neighbor	.039***	(.011)	.033**	(.012)	.047**	(.019)	.054**	(.018)
Kernel	.038***	(.010)	.023*	(.011)	.057**	(.019)	.055**	(.018)
Black								
Radius	.044***	(.014)	.044**	(.015)	.063**	(.023)	.067**	(.023)
Nearest Neighbor	.043*	(.015)	.044**	(.016)	.064**	(.026)	.069**	(.023)
Kernel	.048***	(.014)	.036**	(.015)	.072**	(.025)	.075***	(.022)
Non-Black								
Radius	.000	(.014)	.003	(.014)	.016	(.031)	-.011	(.026)
Nearest Neighbor	.000	(.015)	.001	(.016)	.018	(.029)	-.007	(.027)
Kernel	.004	(.013)	.003	(.013)	-.010	(.027)	-.006	(.023)

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).

NOTES: All t-tests for paternal incarceration are one-sided. All logistic regression models include city dummies, and all t-tests use clustered standard errors to account for the clustering of observations within cities. For information about the covariates used in all propensity score models shown as robustness checks, please contact the author.

*** P<.001 ** P<.01 * P<.05 # P<.10

TABLE A3
Paternal and Maternal Homelessness for Children Considered Recently Homeless

Percent	All Children Considered Recently Homeless	Recently Homeless and Recent Pat. Incarceration	Recently Homeless and No Recent Pat. Incarceration
Only Mom Homeless	77.2	78.0	76.7
Only Dad Homeless	21.8	19.5	23.3
Both Homeless	1.0	2.5	0.0
N	101	41	60

SOURCE: Fragile Families and Child Wellbeing Study (1998-2005).