Ever-Increasing Levels of Parental Incarceration and the Consequences for Children[*]

Rucker C. Johnson
Goldman School of Public Policy
University of California, Berkeley
Tel: (510) 643-0169
E-mail: ruckerj@berkeley.edu

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I. Introduction

The enormous increase in incarceration led to a parallel, but far less well-documented, increase in the proportion of children who grew up with a parent incarcerated at some point during their childhood. Moreover, the concentration of these incarceration trends among less educated African-Americans has resulted in a larger gulf between the early-life experiences of white and black children, which may have profound effects on their later-life socioeconomic attainments. The implications for child well-being of policy-induced increases in the incidence of parental incarceration are not well understood.

The consequences of incarceration on children have received least attention in academic research, prison statistics, public policy, and media coverage. If we fail to consider potential impacts of incarceration on children, we risk neglecting at-risk youth, which may contribute to crime problems in the next generation. This is an important potential negative externality and unintended consequence of criminal justice policy, with parental incarceration imposing larger social costs than merely the prison cost.

This chapter has two primary aims:

1) To produce nationally-representative estimates of the prevalence of parental incarceration for children born 1985-2002, by race/socioeconomic status;
2) To investigate the effects of parental incarceration on child outcomes, including early antecedents of youth crime; intergenerational correlations in the likelihood of criminal involvement (arrest, conviction, incarceration).

The empirical analyses use nationally representative longitudinal data covering nearly a 40-year period in the U.S. to produce evidence that concern each of these issues. I exploit unique features of the Panel Study of Income Dynamics (PSID) and its Child Development Supplement (CDS) to tackle these interrelated research questions; and, this is the first such study of the full U.S. population.

Using the PSID-CDS, I provide evidence on a series of important descriptive questions regarding how often white, black, and Hispanic children experience paternal incarceration, how the risk has changed over the past 25 years (recent birth cohorts versus older birth cohorts from other data sources), and how this risk varies within racial/ethnic groups.

The focus of the regression analysis section investigates the consequences for children of parental incarceration. The results highlight changes in the child's family income and poverty status before, during, and following a father's incarceration. It is shown that children from families with an incarceration history have worse behavioral outcomes. This chapter presents evidence on intergenerational correlations in deviant behavior. Several different empirical strategies are employed to distinguish whether this correlation emanates primarily from observed and unobserved disadvantaged childhood environment characteristics (proximate causes) versus the causal effects of parental incarceration.

II. Previous Research

Parental Incarceration and Child Well-Being

Children of prisoners have been referred to as the 'orphans of justice' and 'innocent victims of punishment'. The limited extant evidence on prisoner's children is drawn from small-scale, mostly qualitative research studies, and have rarely included longitudinal follow-up. The consequences for children of ever-increasing levels of incarceration are perhaps the least understood aspect of the potential positive or deleterious impacts of incarceration policy on families and communities.

Over the decade of the 1990s, the number of children with a parent in state or federal prison in the U.S. rose from 1 million to 1.5 million (Mumola, 2000). Ninety-two percent had a father in prison, which disproportionately affects black children. The number of parents in prison doubled over this period, with nearly 3.6 million parents placed under some form of correctional supervision, including parole by 2000. On any given day, 7 percent of black children have an incarcerated parent, compared with 2.6 percent of Hispanic children and 0.8 percent of white

children. Before entering prison, 64 percent of imprisoned mothers lived with their children, compared to 44 percent of imprisoned fathers in the U.S. (Mumola, 2000). Current prison statistics contain only point-in-time prevalence rates, which mask the extent of childhood experiences of incarceration that could be gleaned from incidence rates. Snapshot cross-sectional estimates significantly understate cumulative risk of exposure to parental incarceration during childhood.

Parental separation which results from incarceration may pose unique risks in its effect on children and the family, relative to parental separations due to divorce, which has a voluminous research literature. A prison sentence may be a death sentence of a father's relationship with his child, or conversely, may liberate a child from an oppressive, abusive, or negligent environment growing up; or alternatively, it may have negligible effects because of limited father involvement in the child's life prior to imprisonment.

The small research literature on children of incarcerated parents suggests that parental incarceration is associated with increased aggressive behavior and withdrawal (Baunach, 1985), criminal involvement (Johnston, 1992), and depression (Kampfner, 1995). Existing studies, however, have not been able to separately identify the causal effects of incarceration from the effects of pre-incarceration risk factors such as parental substance abuse, mental health problems, and abuse histories that may have already put the child at risk before the parent was imprisoned (Johnson and Waldfogel, 2002). Although previous research on children with an incarcerated parent has been methodologically weak in assessing causality, these studies consistently document significantly more behavior problems among these children, including aggressive behavior, depression, hyperactivity, withdrawal, running away, sleep and eating disorders, poor school grades and delinquency (for detailed reviews, see Johnston, 1995). Potential explanations for the association between parental incarceration and child behavior problems include the following:

- trauma of separation

- parental role modeling effects (poor parenting, substance abuse, domestic violence)
- potential beneficial effects from removing abusive parent from household
- shared childhood socioeconomic deprivation prior to imprisonment
- depleted parental resources following parental incarceration—reduction in family income and reduced quality of care (disruptions in children's care arrangements accompanied by school and residential moves)
- genetic predisposition/inherited traits (temperament, parental criminality)

The direction of the predicted impacts on children is not clear theoretically. The incarceration of an abusive or negligent parent may benefit children and contribute to a more nurturing environment. On the other hand, the incarceration of a parent may be a traumatic event in the life of a child that has deleterious impacts on subsequent emotional and behavioral outcomes. Assessing the relative importance of these potential explanations and evaluating whether parental incarceration is merely a risk marker as opposed to a causal risk mechanism has implications for policy. For example, if shared childhood socioeconomic deprivation is the most salient factor underlying the relationship, then policies aimed at reducing poverty also reduce crime. Alternatively, if inherited traits or genetic predispositions are driving factors, then the efficacy of interventions targeted directly at the children of incarcerated parents may be very limited (absent significant nature-nurture interaction effects).

There are a myriad of ways in which parental incarceration may compound disadvantage. It may 1) increase the probabilities of growing up poor and/or with a single parent; and/or 2) elevate the risk of criminal involvement and incarceration later in life for children of the incarcerated prison-boom generation. There are a variety of potential mechanisms through which parental incarceration may affect child outcomes including economic instability, living-arrangement instability, parental attachment issues, and role model effects, to name a few. A

primary goal of this research is to identify the reduced-form effects, not separately identify the pathways.

The evidence presented in this chapter will bear on the question of the likelihood and extent that parental incarceration has exacerbated racial disparities in childhood and in early adulthood. Given extant evidence that children who begin early formation of deviant behaviors in childhood are more likely to develop persistent, serious criminal involvement in adulthood, it is important to target intervention in early childhood due to the greater economic efficiency of policies aimed at prevention versus remediation.

Using data from Sweden, Hjalmarsson and Lindquist (2007) report significant father-son correlations in criminal activity that begin to appear between ages 7 and 12 and are fully established by ages 13 to 19. The implication of this finding is that expectations during childhood about future adulthood opportunities shape deviant behavior over the life course and can explain a significant part of the father-son correlation. Identifying early antecedents in childhood for deviant behavior has the potential to reduce risks of criminal involvement in adulthood, and thereby break the cycle of victimization-to-offending behavior pattern.

Because most incarcerated parents are fathers (with whom boys might identify more), and because boys appear to be more negatively impacted than girls by other types of family disruption such as parental divorce (McLanahan, 2002), we expect the consequences for boys to be larger. Previous research has shown that the absence of the father leads to "acting-out" behavior (externalizing behavior problems) and absence of the mother associated with "acting-in" behavior (internalizing behavior problems) (Fritsch and Burkhead, 1981). It is important to bear in mind that not all children respond similarly to parental criminal involvement, incarceration risk, or neighborhood disadvantage. For some, these experiences cause permanent developmental disruptions; others experience latent effects and appear to respond well in the face of difficult challenges early on, followed by behavior problems later in adolescence and the transition to

adulthood. Still others exhibit resilience in the face of adversity and appear to be strengthened by these early-life traumatic events (Rutter, 1987, 1993).

Cross-sectional evidence provides an incomplete and perhaps misleading portrait of the proportion of children who experience parental incarceration during childhood and how parental incarceration may affect the developmental trajectories of children. It is important to consider dynamic issues by analyzing separately the short-run effects of the imprisonment and separation of the child from the parent, the impact of the parent's unavailability during the incarceration spell, and the effects of reunion after prison release. As well, one must consider whether the child is living with the parent at the time of incarceration, whether a two-parent or single-parent family is involved, and if a two-parent family which parent is incarcerated. The most recent estimates (Mumola, 2000) indicate that 36% of state and 16% of federal inmate mothers were not living with their children at the time of their incarceration; while 56% and of state and 45% of federal inmate fathers were not living with their children at the time of admission. Investigations of the patterns of visitation show that about half of incarcerated parents do not receive any visits from their children, and the frequency of visits is typically not often (Snell, 1994).

III. Data

The PSID began interviewing a national probability sample of families in 1968. These families were re-interviewed each year through 1997, when interviewing became biennial. All persons in PSID families in 1968 have the PSID "gene" which means that they are followed in subsequent waves. In addition, anyone born to or adopted by PSID sample members acquires the PSID "gene" themselves and therefore is followed. When children with the "gene" become adults and leave their parents' homes, they become their own PSID "family unit" and are interviewed in each wave. Studies have concluded that the PSID sample of heads and wives remains representative of the national sample of adults (Fitzgerald, Gottschalk, and Moffitt, 1998a; Becketti et al, 1988), and that the sample of "split offs" is representative (Fitzgerald, Gottschalk and Moffitt, 1998b). The 95-98% wave-to-wave response rate of the PSID makes this possible.

Moreover, the genealogical design implies that the PSID sample today includes numerous adult parent-child groupings who have been members of PSID-interviewed families for nearly four decades.

Two samples are examined in the study. (A detailed discussion of the samples is available in the appendix.) What I call the adult sample consists of PSID sample members who were children when the study began and who have been followed into adulthood. Specifically, I choose PSID sample members born between 1951 and 1975, which consists of children 0-17 years old in the first wave of interviewing in 1968, plus children born into the PSID sample between 1968 and 1975. We then obtain all available information on these individuals for each wave, 1968 to 2005. Therefore, by 2005 the oldest person in the adult sample is 55 and the youngest is 30.

For the deviant behavior, crime and incarceration outcomes, the adult sample consists of original sample PSID males born between 1951-1975 who answered the criminal history questions in the 1995 wave of the PSID or were positively identified as incarcerated in any wave of the survey between 1968 and 2005 (Total N=2,944: whites N=1,612; blacks N=1,207; Hispanics N=103; other N=22).

Spells of incarceration can be recovered from information on PSID respondents' collected in each survey that includes whether a respondent was incarcerated at the time of the interview. This data alone on incarceration has limitations. Among the most important is that this will only identify incarceration in a given year if it was on-going at the time of the survey interview. As a result, we are likely to miss individuals serving shorter sentences that did not coincide with the time of the interview.

The 1995 wave added a crime history module to the PSID including several key questions that I use to augment and obtain more precise information about the timing and duration of incarceration and minimize measurement error. In particular, information was collected for all adults in the 1995 wave on whether respondents had ever been

expelled/suspended from school; whether they had ever been booked or charged with a crime; whether ever placed in a juvenile correctional facility; whether ever served time in jail or prison, the number of times and the month and year of release.

Using the PSID information, if an individual was incarcerated, I identify whether he/she was a parent and then compare the dates of these incarceration spells to children's birth dates in order to identify which parents were incarcerated while they had children at home, and at what child ages. It is important to note that I will not be able to identify parents who have been incarcerated but have never lived with the child at any time during their childhood. Thus, we will systematically miss parents who have not been involved in their children's lives, which will likely result in a positive selection bias of families with an incarceration experience relative to the entire universe of parents with an incarceration history. In many ways, however, this is precisely the set of children for which parental incarceration may have consequences (either positive or negative) because of greater contact with children prior to the incarceration spell. Incarceration among parents who would not have been involved in their children's lives in the absence of incarceration is less interesting for assessing child well-being and implications for criminal justice policy.

Child sample—CDS

In 1997, children 0-12 years old in PSID families and their caregivers were administrated a series of instruments as part of the Child Development Supplement (CDS). Up to two children within the same family were interviewed resulting in a sample of 3,540 children in 2,348 different families in 1997, and 1,132 families had two children interviewed. Interviews for these children were completed again in 2002/2003 when they were 5-18 years old. In total there are 6,447 child-year observations. (See Mainieri (2005) and Mainieri and Grodsky (2006) for details about the CDS).

I examine the effects of parental incarceration on children's educational and behavioral outcomes using data from the Child Development Supplement to the PSID, allowing for differential impacts for father's and mother's incarceration. I find, using the PSID-CDS data, that

the prevalence rates of parental incarceration at some point during childhood are significantly larger than point-in-time estimates. In this study, the consequences for children are considered by using information collected on the timing of parental criminal/incarceration history and comparisons of changes in multiple dimensions of children's development and lives before and after the parental incarceration occurrence. These dimensions include: (a) child behavioral outcomes; (b) family economic resources—income; (c) family non-economic resources—family structure, parenting behavior; and (d) neighborhood conditions.

These data include a rich set of variables related to both the mother and father, and the child, including parental criminal history, a set of child behavioral problem indices, standardized child cognitive assessments, and whether the child has ever been suspended/expelled from school. Armed with this array of information, the PSID-CDS is uniquely suited to consider the impacts of parental criminal/incarceration history on adolescent outcomes and to analyze the intergenerational transmission of risks of imprisonment. The child behavior problems index that will be analyzed as an outcome has been shown to be a predictor of juvenile crime. We utilize information about these child outcomes as reported by the primary caregiver (in most cases the mother), but where data permits I utilize multiple informants of child behavior (including teacher reports).

IV. Descriptive Results

Cumulative Risks of Deviant Behavior, Criminal Involvement, and Incarceration

Table 1 reports nationally-representative estimates of the cumulative risks of deviant behavior, criminal record, and incarceration or death by ages 35-40 for the PSID birth cohort born between 1951 and 1975. These estimates are presented for men separately by race/ethnicity and educational attainment. Deviant behavior is defined here as individuals who had ever been either expelled/suspended from school, charged or booked for a crime, or ever been incarcerated. Incarceration includes individuals sentenced to jail or prison sometime during adulthood.

We find alarmingly high rates of these lifetime risks, especially for black high school dropouts. Roughly two-thirds of black high school dropouts have either died or been incarcerated before reaching the age of 40. For black high school dropouts, the lifetime risks of deviant behavior is 63 percent; 55 percent have a criminal record, and one-half have served time in prison or jail. These rates are staggering and unique to this prison boom generation.

The rates for African-Americans are roughly two times the rates of non-Hispanic whites, and not surprisingly, we see lifetime risks are substantially lower for college-educated men. However, we also see that there are dramatic racial disparities in lifetime risks of incarceration among non-college educated men. In fact, black men with some college education had similar lifetime risks of incarceration as white non-college educated (high school graduates) men (10 percent).

These estimates are broadly consistent with those from the BJS (Bonczar and Beck, 1997), the NLSY (Pettit and Western, 2004), and Raphael (2005) using census data, a synthetic cohort approach and life table calculations.[2] The BJS estimates that lifetime incarceration risks have more than doubled for black men for more recent cohorts, relative to this older birth cohort. Examining the birth cohort differences in the risks of incarceration in the PSID sample, I find that the younger cohorts born in the 1960s/early 1970s have roughly seventy percent (7 percentage points) higher lifetime risks of incarceration relative to those born in the 1950s.

One key aspect of the PSID as used in this paper is the information on parental histories of criminal involvement and risky behaviors that might influence children's early formation of these behaviors. There is a paucity of nationally representative longitudinal data sets with information on both children and their parents that is large enough to have a reasonable sized subset of children with parents with a criminal history—the PSID is a rare exception.

[2] The incarceration estimates contained in this paper include individuals sentenced to jail or prison. The PSID survey data do not allow one to distinguish between jail and prison sentences. Thus, these estimates are not directly comparable to BJS estimates of the proportion of males who have ever served time in a state or federal prison, or the estimates in Raphael (2005) using administrative records from the California prison system during the 1990s.

For the PSID original sample of males born between 1951-1975, I first document among their offspring (born sometime over the subsequent 1968-2005 period) what proportion had a father with an incarceration history. Among the 1951-1975 birth cohort who became fathers, I calculate the proportion who have an incarceration history, criminal record, and deviant behavior history, separately by race/ethnicity and educational attainment. Table 2 presents these descriptive results for their children. As shown in Table 2, I find that 20 percent of black children had a father with an incarceration history; and among black children with fathers who did not graduate from high school an alarmingly 33 percent of their father's had an incarceration history. The differences in the risk of paternal incarceration are more closely linked to racial differences than parental-education differences. For example, black children whose fathers attended college were only slightly less likely to experience paternal incarceration than white children whose fathers were high school graduates but did not attend college. It is important to note that these are likely lower bound estimates because we identify only those parents who lived with the child at some point during childhood.

Use of the PSID-CDS data paints a similar picture regarding how often black and white children experience parental incarceration, and how this risk varies within racial/ethnic groups. A comparison of these statistics for these recent birth cohorts with older cohorts from other data sources demonstrates how significantly the risk has changed over the past 25 years. For example, Wilderman (2006) uses criminal justice and vital statistics data to estimate the risk of paternal incarceration during early childhood for the 1978 and 1990 birth cohorts of American children. He reports that roughly one in nine black children born in 1978 could expect to have their father incarcerated before their ninth birthday, and nearly one in five black children from the 1990 birth cohort could expect the same—an increase of nearly 60 percent over only a twelve-year period.

Using the PSID-CDS, I also examine the proportion of children who have a parent and/or other 1968 descendent family member with an incarceration history, criminal involvement history, and/or deviant behavior history. These results show that black children, on average, have

one person in their immediate or extended family with an incarceration history and roughly 3 family members with a deviant behavior history (i.e., either expelled from school, criminal record, or incarceration history).

Table 3 presents the average change in the child's family income as well as the change in the probability the child is living in poverty between the years immediately before, during, and after the release of a father from prison/jail. Family poverty status is assessed by matching a child's total family income with corresponding poverty thresholds based on income and family size. I find that the proportion of children growing up poor increases by 8.5 percentage points (from 22.3 to 30.9) in the years during the father's incarceration spell as compared with the years immediately before the incarceration spell, and this significant increase only modestly declines in the first several years following the father's release. Similarly, we see family income decline by an average of $8,726 (from $38,960 to $30,234) in the years during the incarceration spell (relative to the year prior to the incarceration spell) and the child's family income does not resume/regain its pre-incarceration level in the years following the fathers' release. The lack of data on fathers with an incarceration history who never lived with the child at anytime during childhood likely leads these estimates to be upwardly biased.

Empirical Approach

I examine the effects of parental incarceration on children's educational and behavioral outcomes using PSID-CDS, allowing for differential impacts for father's and mother's incarceration. These data include a rich set of variables related to both the mother and the child, including parental criminal history and a set of standardized child cognitive assessments.

Measures

Dependent Variables

The dependent variables capture aspects of children's emotional well-being with three measures of child behavior: behavior problems index, externalizing behavior problems and

internalizing behavior problems. Each of these scales relies on maternal reports of children's behavior. In addition, I assess the incidence of the child ever being expelled/suspended from school, disruptive behavior problems in school, school absenteeism, being placed in special education, and grade repetition. The child behavioral outcomes examined are important (in part) because early manifestations of problem behavior in children have been shown to often be a precursor to more serious involvement in deviant behavior in adolescence and criminal involvement in adulthood.

Behavior Problems. In both surveys, primary caregivers were asked to provide information on their children's (ages 3-17) behavior, and whether they exhibited a particular problem never, sometimes, or often. Particular behaviors were grouped together to create scales of internalizing (withdrawn, sad) and externalizing (aggressive, angry) behaviors.[3] While I do not devote substantial attention to age variation in the behavior problems index, it is recognized that a high score may mean something different for a six-year old versus a seventeen-year old.

I first document a simple correlation between parental incarceration history and child behavior problem indices. The remainder of the paper attempts to identify whether this simple relationship is causal. To this end, various empirical approaches are used to address potential omitted variables bias, including the estimation of hierarchical random effects models with an extensive set of controls.

Table 4 presents simple descriptive statistics for the child behavior problems index by the parents' most severe offense (incarceration; booked or charged with a crime; expelled/suspended from school; none of these). The estimates indicate a substantial positive relationship between parental incarceration history and child behavioral problems. For example, the average child who has a parent with an incarceration history scores .55-.83 standard deviations above the average

[3] The internalizing behavior index includes the following behaviors, which are combined to create a continuous count of behaviors: child has felt loved; has been fearful/anxious; has been easily confused; has felt worthless; is disliked by other children; has been obsessed with thoughts; has been sad or depressed; has been withdrawn; has been clinging to adults; has cried too much; has felt others were out to get him/her.

behavior problems score of a child without any parental/family incarceration history (BPI=7.7 among children with no family history of deviant behavior versus BPI scores between 10 and 11 among children with a parental incarceration history). Among children who have a father with an incarceration history, the proportion of children who have ever been expelled or suspended is 22.8 percent, as compared to 4 percent among children without a family history of deviant behavior. We see similarly large differences when comparing children with a mother with an incarceration history to children without any parental incarceration history.

Of course, children who experience parental incarceration are different from other children in a multitude of ways that may also contribute to the raw differences in child behavioral outcomes that we observe. Table 5 highlights this point by presenting a series of family and neighborhood characteristics for children who have parents with an incarceration history and those who do not. We see children from families with an incarceration history are disadvantaged along many other dimensions. For example, compared with children who do not experience parental incarceration, children who do come from significantly poorer families, are more likely to be raised in single-parent families, more likely to grow up in worse quality neighborhoods (particularly, neighborhoods with crime and drug use problems), and have less-educated parents.

Perhaps the most important difference is that their family income was considerably lower. Poverty rates are five percent among children who had no family history of deviant behavior versus 19 percent for those children exposed to paternal incarceration. Based on the relationship between family income and child outcomes shown elsewhere (Duncan and Brooks-Gunn, 1997), it may come as no surprise that children who have parents with an incarceration history have more behavioral problems.

The remainder of this analysis is geared to identify whether it is the parental incarceration itself which leads to greater child behavioral problems, or whether these other differences in family characteristics, including family income, that are the main causal factors and mechanisms that link parental incarceration and child well-being.

Although the descriptive analyses in Table 4 make a compelling prima facie case that there is a relationship between parental incarceration and child behavioral problems, children who experience parental incarceration differ from children who do not in both observable and unobservable ways. As well, an example of a potential source of omitted variable bias is that a drop in family income could lead both to a child experiencing lower levels of development investment and to a parent engaging in crime. I investigate whether parental incarceration precipitated the problematic behavior or merely aggravated and caused pre-existing problems to become worse; or whether it merely represents a risk marker with no causal relationship links. Incarceration is often preceded by poverty, multiple mental health problems, marital instability, absent fathers, child abuse and neglect, and substance abuse. The empirical design utilized aims to distinguish selection effects preceding parental incarceration (pre-existing risk factors), and direct, mediating, and moderating effects following the incarceration.

The empirical strategy relies on OLS estimation of a series of sequential specifications, with each specification including a unique and extensive array of family and neighborhood background variables. The empirical model specifications test for differential effects of parental incarceration by childhood life stage—early childhood (ages 0-5); middle years (ages 6-10); adolescence (ages 11-17)—and length of parental incarceration exposure. The child development literature conceptualizes these ages as distinct stages of rapid growth in which parental resources may differentially matter. The hierarchical random effects models highlight the significant heterogeneity in the effects of parental incarceration on child well-being.

I employ several alternative model specifications to gauge the role of potential biases due to unobservable heterogeneity. First, parental incarceration experiences *prior* to birth are added to the regression model to test for bias due to unobserved parental factors.[4] I compare children who experienced parental incarceration exposure sometime during childhood with children whose

[4] This approach draws on the method used by Gottschalk (1996) for examining the intergenerational correlation in welfare participation and used by Ruhm (2004) for analyzing the effects of parental employment and child cognitive development.

parents were only imprisoned before their birth. If the association between parental incarceration and child behavior problems was due mostly to genetic risk factors, then the timing of parental imprisonment would be of little importance for child outcomes.

If we assume that both the magnitudes of omitted variables and their effects are time-invariant, then their influence on child behavior outcomes will be captured in part by controlling for the childhood stage-specific incarceration exposure. It is difficult to think of omitted variables correlated strongly with our child behavior outcomes and with incarceration in adolescent years that would not also correlate with incarceration at other stages. The usual suspects, such as genetic influences, are as likely to affect later and early childhood incarceration risks, and thus be controlled, in some degree, by our inclusion of incarceration in other childhood stages. I include incarceration prior to the child's birth as a specification check to test for a spurious correlation; incarceration prior to birth obviously should not directly causally influence these outcomes in a well specified model.

Some of our childhood conditions and socioeconomic factors were not measured prior to the parental imprisonment; as a result, we cannot determine whether they were present prior to the initial incarceration or were themselves the product of the subsequent incarceration experience. To the extent that parental incarceration actually caused these factors, the total impact of parental incarceration is underestimated by controlling for these childhood conditions in models shown in Tables 6-8.

V. Regression Results

The first column of Table 6 presents the results of estimating a simple OLS model of the intergenerational relationships between parental deviant behavior history and child behavior problem indices. These models include controls for self-rated neighborhood quality, extent of neighbor policing of drugs (which may serve to proxy for neighborhood social cohesion), indicator variables for whether there is a family member residing in household with an alcohol problem, parental religiosity, parental education, marital status, child gender, race/ethnicity, and

age. The effects of these unique set of control variables are of interest in their own right, but I focus discussion on the relationships between parental deviant behavior history and child behavioral outcomes.

As shown in Table 6, the results indicate that parental deviant behavior history, including school expulsion, criminal record, and/or incarceration—are all significantly associated with greater child behavioral problems, and the magnitudes are substantive. The patterns of results are similar across the child behavior problem outcomes. I find that paternal incarceration history and maternal deviant behavior history are each associated with an increased likelihood that their children are expelled or suspended from school. The effects of other family members' incarceration or criminal history are not significantly related to child outcomes when the parents do not have such a history.

The results in Table 6 also show that neighborhood quality, the extent of neighbor policing of drugs (which may serve to proxy for neighborhood social cohesion), whether there is a family member residing in household with an alcohol problem, parental religiosity, parental education, marital status are all independently significantly related to these child behavioral outcomes.

There is variation in the overall incidence and timing of parental incarceration exposure among children, including a significant portion who have parents with an incarceration history that occurred prior to the child's birth and not during their childhood years. If the association between parental incarceration exposure reflects a causal influence, then we should expect to see effects only when it occurs during the child's life. I exploit this fact and test for the presence of unobserved heterogeneity bias by including parental incarceration that occurred prior to the child's birth as a model specification check.

Table 7 presents these model results. The results for the effects of parental incarceration pass this falsification test. In particular, I find that the estimated effects of parental incarceration on child well-being are only significant when it occurs during childhood—the estimated effects of

parental incarceration prior to birth are small and statistically insignificant. This pattern of results holds for all the behavior problem indices.

Up to this point, I have considered the impact of exposure to parental incarceration at some point during childhood, yet recent research emphasizes the importance of the early childhood environment on subsequent outcomes (Johnson and Schoeni, 2007). In Table 8, I investigate whether the timing of parental incarceration exposure makes a difference for children's behavioral outcomes. The models estimated allow parental incarceration between ages 0-5 (pre-school), 6-10 (middle years), and 11-17 (adolescence), to have differential effects on children. One might expect larger effects in the early childhood years, and during adolescence when role modeling influences may be particularly salient.

The OLS results shown in the first column of Table 8 reveal precisely this pattern. The results indicate that parental incarceration is associated with significantly greater behavioral problems at all stages of childhood, with the largest impacts found when incarceration exposure occurs during the adolescent and early childhood years.

These results show that a child who has a parent who is incarcerated during their childhood years exhibits significantly more behavioral problems. This result holds when we control for a wide range of observable family and neighborhood background characteristics and is not present when the incarceration exposure only occurred prior to the child's birth and not during their childhood years.

VI. Summary Discussion

This study examines the intergenerational consequences of incarceration by examining the children of the next generation. I find, using the PSID-CDS data, that the prevalence rates of parental incarceration at some point during childhood are significantly larger than point-in-time estimates. I find that 20 percent of black children had a father with an incarceration history; and among black children with fathers who did not graduate from high school an alarmingly 33 percent of their father's had an incarceration history.

I find linkages between exposure to parental incarceration and child behavioral outcomes. These results suggest that parental incarceration exposure leads children to develop greater behavioral problem trajectories. The pattern of results is remarkably similar across all of the empirical model specifications utilized including hierarchical random effects models with an unusually extensive set of controls. This evidence bears on the question of the extent to which parental incarceration has exacerbated racial disparities in childhood and in early adulthood. Understanding if and how parental absence due to incarceration differs from separation, due to parental divorce or death, may prove instrumental in designing interventions with families where a parent is incarcerated (Johnson and Waldfogel, 2002).

This study identifies some potential unintended negative consequences for children of incarceration policies designed to "get tough" on crime. A key goal of social welfare policy in the U.S. should be to "break the cycle" of poverty and unemployment from one generation to the next. It is only by following the children of at-risk parents that we can know whether their developmental trajectories point toward a brighter economic future than the one like their own parents once faced.

Policy importance.

Imprisoning parents may cause greater deviant behavior and crime in the next generation, and thereby contribute to the intergenerational transmission of criminal involvement. The extent to which parental incarceration causes deviant behavior problems and crime in the next generation is an important question for criminal justice and sentencing policy to consider as a potential negative externality. If parental incarceration does lead to greater child behavior problems as the evidence here suggests, parenthood could be treated as an extenuating factor in sentencing, because of concerns about the child's well-being. As well, there could be a more extensive range of family and child support services offered when parental incarceration does occur. Future work is needed to improve our understanding of how social welfare policies can protect children from some of the potential adverse effects of parental incarceration. Policy-

makers may need to consider the merits of provision of some form of community-based sentencing as an alternative to non-custodial prison sentencing.

Future research should examine pathways through which parental incarceration may affect child well-being and whether the effects depend on the length of the parent's sentence and type of crime, paternal versus maternal incarceration, child developmental stage, differential effects for boys versus girls and on internalizing versus externalizing behavioral problems, the amount of parent-child contact before imprisonment and amount maintained during incarceration spell; explanations given to children about their parent's absence; children's experiences of stigma; levels of social support, socioeconomic status and race; and neighborhood disadvantage.

Murray et al. (2007) identify significant effects of parent imprisonment on boy's delinquency and behavior problems in England, but not in Sweden, and speculate that the reasons for this cross-national difference may be the combined result of shorter prison sentences in Sweden, more family-friendly prison policies, a welfare-oriented juvenile justice system, and more sympathetic public attitudes toward crime and punishment. In Sweden, child welfare, rather than punishment, is the paramount concern in cases of child delinquency. There is more to learn from cross-national comparisons as well as consequences in the U.S. of differences in state social and prison policies. For example, effects of parental incarceration could be compared between states with different policies on prisoner-family contact, average length of sentence, and social support provided to prisoners' families. Given the significant rise in parental incarceration in the U.S. (and disproportionate incidence among African-American children), the coordinated efforts of courts, prisons, community and social service agencies, schools, and policy makers informed by research evidence are requisite to develop and implement effective programs that will support children, families, and kin of incarcerated parents. There are currently no policies and programs targeting this subset of at-risk children. The societal welfare implications warrant a major research agenda to further study these issues.

References

Baunach, Phyllis J. (1995). *Mothers in prison*. New Brunswick, NG: Transaction Books.

Becketti, S.; W. Gould, L. Lillard, and F. Welch. (1988). "The PSID after Fourteen Years: an Evaluation." *Journal of Labor Economics* 6(4):472-492.

Bonczar, Thomas P. and Allen J. Beck. 1997. *Lifetime Likelihood of Going to State or Federal Prison*. Bureau of Justics Statistics Bulletin, NCJ 160092. Washington DC: U.S. Department of Justice.

Cho, Rosa M. 2007. The Impact of Maternal Imprisonment on Children's Educational Achievement – Results from Children in Chicago Public Schools. Unpublished manuscript.

Freeman, Richard. 1992. Crime and the Employment of Disadvantaged Youth, in *Urban Labor Markets and Job Opportunity*, Peterson, George and Wayne Vroman (eds.), Urban Institute: Washington, DC., 171-192.

Gaviria, Alejandro and Steven Raphael. 2001. School-based peer effects and juvenile behavior. *The Review of Economics and Statistics*, MIT Press, May 83(2): 257-268.

Hagan, John and Ronit Dinovitzer. "Collateral Consequences of Imprisonment for Children Communities, and Prisoners." *Crime and Justice*, Vol. 26. 1999.

Hjalmarrson, R. and M. Lindquist. 2007. Like Godfather Like Son: Explaining the Intergenerational Nature of Crime. Unpublished manuscript.

Ishikawa, S. and A. Raine. 2002. "Behavioral Genetics and Crime," in *The Neurobiology of Criminal Behavior*, Norwell: Kluwer Academic Publishers, 81-110.

Johnson, Rucker and Robert Schoeni. (2007). The influence of early life events on health, human capital accumulation, and labor market outcomes over the life course. National Poverty Center working paper.

Johnson, Elizabeth Inez and Jane Waldfogel. "Children of incarcerated parents: Cumulative risk and children's living arrangement". JCPR Working Paper #306. Chicago: Joint Center for Poverty Research, Northwestern University/University of Chicago. July 17, 2002.

Johnston, Denise. "Effects of Parental Incarcerations" in Katherine Gabel and Denise Johnston, M.D. eds., *Children of Incarcerated Parents*, Lexington Books. 1995.

Kampfner, Christina J. "Post-traumatic stress reactions in children of imprisoned mothers" in Katherine Gabel and Denise Johnston, M.D. eds., *Children of Incarcerated Parents*, Lexington Books. 1995.

LaLonde, Robert J. and Susan M. George. *Incarcerated Mothers: The Chicago Project on Female Prisoners and Their Children.* The Irving B. Harris Graduate School of Public Policy Studies, University of Chicago. June 2002.

Moore, Quinn, and Heidi Shierholz . Externalities of Imprisonment: Does Maternal Incarceration Affect Child Outcomes? Unpublished manuscript.

Murray, J., Janson, C.-G., and D.P. Farrington. 2007. "Crime in Adult Offspring of Prisoners: A Cross-national Comparison of Two Longitudinal Samples." *Criminal Justice and Behavior* 34(1):133-149.

Murray, J. and D.P. Farrington. 2005. "Parental Imprisonment: Effects on Boys' Antisocial Behaviour and Delinquency through the Life-course." *Journal of Child Psychology and Psychiatry* 46(12): 1269-1278.

Murray, J. 2005. "The Effects of Imprisonment on Families and Children of Prisoners," in *The Effects of Imprisonment*, (A. Liebling and S. Maurna, eds.), Cullompton, Devon, England: Willan, 442-492.

Pettit, Becky and Bruce Western. 2004. "Mass Imprisonment and the Life Course: Race and Class Inequality in U.S. Incarceration" *American Sociological Review* 69(2): 151-169.

Raphael, Steven. 2005. "The Socioeconomic Status of Black Males: The Increasing Importance of Incarceration." In *Poverty, the Distribution of Income, and Public Policy*, edited by Alan Auerbach, David Card, and John Quigley. New York: Russell Sage.

Raphael, Steven and Michael Stoll. 2007. *The Increasing Prison Population in the United States: What has it done for us and what has it done to us?* (edited book volume in progress).

Rowe, D.C. and D.P. Farrington. 1997. "The Familial Transmission of Criminal Convictions." *Criminology* 35(1): 177-201.

Sarnoff, A.M. , W.F. Gabrielli and Barry Hutchings. 1984. "Genetic Influences on Criminal Convictions: Evidence from an Adoption Cohort." *Science*, New Series, 224 (4651): 891-894.

Snell, Tracy. Correctional Populations in the United States, 1991. Washington, D.C.: U.S. Department of Justice, 1993.

Travis, F. and J. Burkhead. 1981. "Behavioral Reactions of Children to Parental Absence due to Imprisonment." *Family Relations* 30(1): 83-88.

Western, Bruce. 2002. "The Impact of Incarceration on Wage Mobility and Inequality." *American Sociological Review* 67: 526-546.

Wildeman, Christopher. 2006. Paternal incarceration, the prison boom, and the concentration of disadvantage. Unpublished manuscript.

Table 1. Cumulative Risk of Criminal History, Incarceration, or Death by Ages 35 - 40, by Race & Education

Men born b/w 1951-1975, Data: PSID*

	All	HS Dropout	HS Grad/GED	All Non-college	Some College+
Cumulative Risk of Death or Incarceration (%)					
Black Men	30.25	65.71	27.98	39.89	10.44
White Men	11.60	42.19	11.58	18.89	4.37
Cumulative Risk of Incarceration					
Black Men	25.28	50.81	26.38	33.69	8.65
White Men	8.57	29.03	9.53	13.97	3.34
Cumulative Risk of Criminal History**					
Black Men	34.44	55.27	31.20	38.39	25.01
White Men	18.15	41.77	20.64	25.42	11.35
Cumulative Risk of Deviant Behavior***					
Black Men	47.61	62.96	45.90	50.84	39.33
White Men	24.13	53.31	27.29	33.08	15.91

*The sample consists of original sample PSID males born between 1951-1975 who answered the criminal history questions in the 1995 wave of the survey OR were positively identified as incarcerated in any wave of the survey between 1968 and 2005. (blacks N=1,207; whites N=1,612). Incarceration includes individuals sentenced to jail or prison sometime during adulthood.

**"Criminal history" is defined as ever charged with a crime and/or incarcerated for a crime.

***"History of deviant behavior" defined as ever charged with a crime, incarcerated for a crime, or suspended/expelled from school.

All descriptive statistics are sample-weighted to account for the oversampling of blacks and low-income families, to generate nationally-representative estimates.

Table 2. Children with Paternal Criminal History, Incarceration, or Death by Race & Fathers' Education

Children of fathers born b/w 1951-1975, Data: PSID*

	All	HS Dropout	HS Grad/GED	All Non-college	Some College+
Cumulative Risk of Paternal Death or Incarceration (%)					
Black Children	20.74	34.82	22.22	25.59	10.72
White Children	10.71	23.69	12.77	15.38	5.35
Cumulative Risk of Paternal Incarceration					
Black Children	18.66	32.20	19.51	22.91	9.89
White Children	10.10	23.06	11.57	14.33	5.26
Cumulative Risk of Paternal Criminal History**					
Black Children	23.21	36.25	23.51	26.93	15.53
White Children	16.67	30.51	19.10	21.84	10.74
Cumulative Risk of Paternal Deviant Behavior***					
Black Children	38.41	46.15	43.54	44.24	26.35
White Children	25.69	50.76	28.72	34.01	16.15

*The sample consists of the next-generation children whose fathers were original sample PSID members born between 1951-1975, lived with them in at least one year b/w 1968-2005, and who answered the criminal history questions in the 1995 wave of the survey OR were positively identified as incarcerated in any wave of the survey between 1968 and 2005. (black children N=1,708; white children N=2,626)

**"Criminal history" is defined as ever charged with a crime and/or incarcerated for a crime.

***"History of deviant behavior" defined as ever charged with a crime, incarcerated for a crime, or suspended/expelled from school.

All descriptive statistics are sample-weighted to account for the oversampling of blacks and low-income families, to generate nationally-representative estimates.

Table 3. Children's outcomes classified by parent's most severe deviant behavior offense

Children born b/w 1985-2000, Data: PSID-CDS*

	No Family History of Deviant Behavior	Father's most severe offense			Mother's most severe offense		
		Incarceration	Criminal History	Expelled	Incarceration	Criminal History	Expelled
Child Outcome:							
BPI--total score	7.7087	10.0641	9.7221	9.4128	11.2655	10.5723	9.7247
BPI--internalizing	2.8595	3.3683	3.3756	3.4490	4.2251	3.9445	3.4002
BPI--externalizing	4.9828	6.9143	6.5391	6.1467	7.3797	6.9755	6.5590
Expelled/suspended (%)	4.19	22.83	6.87	7.31	14.33	9.29	22.96

*The sample consists of all CDS children who were interviewed in 1997 and/or 2002/2003. Family members include all descendent PSID extended family members; using PSID incarceration history info through 2005.

All descriptive statistics are sample-weighted to account for the oversampling of blacks and low-income families, to generate nationally-representative estimates.

Table 4. Other characteristics of childhood families classified by parent's most severe deviant behavior offense

Children born b/w 1985-2000, Data: PSID-CDS*

	No Family History of Deviant Behavior	Father's most severe offense			Mother's most severe offense		
		Incarceration	Criminal History	Expelled	Incarceration	Criminal History	Expelled
Family Background:							
Family Income (1997$)	$75,406	$52,500	$74,237	$48,571	$58,389	$58,021	$53,976
Income-to-Needs Ratio	4.55	3.19	4.45	2.96	3.76	3.96	3.26
In Poverty (%)	4.98	19.33	5.83	10.77	11.10	7.12	8.31
Mother's Background:							
Currently Married	86.52	68.56	89.87	82.54	71.82	72.11	75.83
Mother's education							
(if mother is present)	14.01	13.02	13.66	12.65	13.78	12.78	12.69
Father's education							
(if father is present)	14.09	12.51	13.32	12.51	13.77	13.55	12.67
Religious							
Very	23.95	8.55	7.14	23.02	50.82	0.85	1.44
Moderately	26.69	20.79	35.94	14.71	8.60	18.11	38.77
Not at all	49.36	54.10	40.54	51.33	27.21	55.94	45.19
Family member w/alcohol problem	8.96	16.56	16.38	10.94	13.37	25.10	14.60
Neighborhood Characteristics:							
Neighborhood quality (self-rated)							
Excellent	43.49	22.46	40.41	40.58	58.29	37.1	29.42
Very good	36.44	45.10	33.41	38.80	16.82	42.79	34.50
Good	14.38	22.85	19.32	13.50	23.52	10.82	20.40
Fair	4.12	8.20	6.80	6.22	0.95	6.56	8.48
Poor	1.57	1.39	0.06	0.90	0.42	2.73	7.20
Neighbor Policing of Drugs							
Very High	33.17	33.99	27.94	29.69	22.68	28.65	22.57
High	8.38	10.95	14.24	10.10	0.42	8.17	9.81
Moderate	13.95	13.39	19.70	13.82	24.64	14.83	8.91
Low	44.50	41.67	38.12	46.39	52.26	48.35	58.71

*The sample consists of all CDS children who were interviewed in 1997 and/or 2002/2003. Family members include all descendent PSID extended family members; using PSID incarceration history info through 2005.

All descriptive statistics are sample-weighted to account for the oversampling of blacks and low-income families, to generate nationally-representative estimates.

Table 5. Child Family Income Immediately Before, During, and After Father's Prison Release

Children born b/w 1985-2000, Data: PSID-CDS*

Child Family Income (1997$)	
Year before father's incarceration	$38,960
Avg during incarceration	$30,234
Year after release	$33,100
Difference*** (During - Before)	-$8,726
Income-to-Needs Ratio	
Year before father's incarceration	2.41
Avg during incarceration	2.08
Year after release	2.43
Difference* (During - Before)	-0.33
In Poverty (%)	
Year before father's incarceration	22.34
Avg during incarceration	30.87
Year after release	24.40
Difference*** (During - Before)	8.53***

****p<.01; **p<.05; *p<.10*

Results use sample-weights to generate nationally-representative estimates.

Table 6. Intergenerational relationship of parental deviant behavior history on child behavior problems

	Dependent variable:			
	BPI: Total Score	BPI: Internalizing	BPI: Externalizing	Prob(Expelled) Marg Efx (Probit)
	(1)	(2)	(3)	(4)
Father's Most Severe Offense (ref cat.: none)				
Expelled from School	0.6865*	0.2289+	0.4477*	-0.0035
	(0.3819)	(0.1747)	(0.2590)	(0.0168)
Criminal History	1.4157**	0.3753+	1.0788***	0.0355
	(0.5705)	(0.2603)	(0.3775)	(0.0293)
Incarceration History	1.0782**	0.3930*	0.7094**	0.0804***
	(0.4215)	(0.2022)	(0.2764)	(0.0257)
Mother's Most Severe Offense (ref cat.: none)				
Expelled from School	0.5340+	0.2063	0.3559+	0.0556***
	(0.3657)	(0.1716)	(0.2344)	(0.0171)
Criminal History	1.8190**	0.7572*	1.2141**	0.0441
	(0.9069)	(0.4383)	(0.5750)	(0.0392)
Incarceration History	1.9130**	0.8193**	1.2157**	0.0429+
	(0.7890)	(0.3902)	(0.4841)	(0.0311)
Other Family Members' Most Severe Offense (ref cat.: none)				
Expelled from School	-0.2912	-0.1347	-0.1824	0.0024
	(0.3544)	(0.1710)	(0.2295)	(0.0142)
Criminal History	-0.1528	-0.1524	-0.0230	0.0549+
	(0.5959)	(0.2680)	(0.4256)	(0.0337)
Incarceration History	0.1736	0.1254	0.0336	0.0043
	(0.2825)	(0.1327)	(0.1840)	(0.0104)
Neighborhood quality (self-rated) (ref cat. Excellent)				
Very Good	0.6077***	0.1856*	0.4510***	0.0067
	(0.2325)	(0.1123)	(0.1516)	(0.0112)
Good	1.2953***	0.4868***	0.8433***	0.0202+
	(0.2695)	(0.1286)	(0.1754)	(0.0128)
Fair	1.8134***	0.6238***	1.2485***	0.0176
	(0.3394)	(0.1676)	(0.2171)	(0.0140)
Poor	2.1535***	0.8429***	1.4180***	0.0267
	(0.6044)	(0.2885)	(0.3923)	(0.0245)
Neighbor policing for drugs (ref cat. Very likely)				
Likely	0.4301+	0.2906**	0.1191	-0.0110
	(0.3017)	(0.1450)	(0.1963)	(0.0125)
Unlikely	0.0593	0.0572	0.0180	-0.0144+
	(0.3039)	(0.1482)	(0.1974)	(0.0111)
Very Unlikely	0.1897	0.0923	0.0960	-0.0104
	(0.2387)	(0.1162)	(0.1550)	(0.0105)
Family member w/alcohol problem	1.6100***	0.7448***	0.9120***	0.0239+
	(0.3511)	(0.1751)	(0.2256)	(0.0152)
Religiosity (ref cat. very)				
Somewhat	0.3299	0.1994+	0.1223	0.0090
	(0.2698)	(0.1300)	(0.1793)	(0.0140)
Not at all	0.5145**	0.2205*	0.2742*	0.0027
	(0.2347)	(0.1150)	(0.1526)	(0.0111)
Mother's Education	-0.1788***	-0.0614**	-0.1233***	-0.0064***
	(0.0583)	(0.0271)	(0.0387)	(0.0023)
Father's Education (if present)	-0.1311**	-0.0391+	-0.0953**	-0.0018
	(0.0598)	(0.0275)	(0.0402)	(0.0024)
Mother married	-1.0474***	-0.4349***	-0.6480***	-0.0232**
	(0.2263)	(0.1090)	(0.1474)	(0.0090)
Boy	0.8805***	0.1014	0.8023***	0.0639***
	(0.1875)	(0.0885)	(0.1225)	(0.0078)
Child age	0.0386+	0.0829***	-0.0451***	0.0180***
	(0.0248)	(0.0118)	(0.0164)	(0.0012)
Black (ref cat. white)	-1.4361***	-0.7982***	-0.7018***	0.1072***
	(0.2372)	(0.1130)	(0.1547)	(0.0119)
Constant	11.0090***	3.0873***	8.2235***	
	(0.9581)	(0.4400)	(0.6364)	
Child-Year Observations	5542	5542	5542	4766

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10, + p<0.20

Table 7. OLS estimates of impact of parental incarceration on child behavior problems

	Dependent variable:		
	BPI: Total Score	BPI: Internalizing	BPI: Externalizing
	(1)	(2)	(3)
Parental incarceration prior to birth	0.4201	0.0837	0.3630
	(0.5179)	(0.2463)	(0.3365)
Parental incarceration sometime during childhood	2.3433***	1.0604***	1.3864***
	(0.6229)	(0.3093)	(0.3887)
Neighborhood quality (self-rated)			
(ref cat. Excellent)			
Very Good	0.5786**	0.1781+	0.4259***
	(0.2314)	(0.1115)	(0.1512)
Good	1.2369***	0.4627***	0.8049***
	(0.2695)	(0.1286)	(0.1756)
Fair	1.8097***	0.6160***	1.2510***
	(0.3373)	(0.1668)	(0.2159)
Poor	2.1817***	0.8505***	1.4409***
	(0.6123)	(0.2922)	(0.3963)
Neighbor policing for drugs			
(ref cat. Very likely)			
Likely	0.4619+	0.3073**	0.1350
	(0.3019)	(0.1448)	(0.1968)
Unlikely	0.1446	0.0916	0.0730
	(0.3036)	(0.1479)	(0.1975)
Very Unlikely	0.2466	0.1189	0.1279
	(0.2401)	(0.1164)	(0.1561)
Family member w/alcohol problem	1.7205***	0.7910***	0.9809***
	(0.3525)	(0.1752)	(0.2266)
Religiosity (ref cat. very)			
Somewhat	0.2667	0.1673	0.0880
	(0.2714)	(0.1306)	(0.1804)
Not at all	0.4830**	0.2048*	0.2554*
	(0.2360)	(0.1150)	(0.1537)
Mother's Education	-0.2083***	-0.0734***	-0.1422***
	(0.0578)	(0.0269)	(0.0385)
Father's Education (if present)	-0.1370**	-0.0404+	-0.0988**
	(0.0594)	(0.0274)	(0.0397)
Mother married	-1.3012***	-0.5093***	-0.8417***
	(0.2174)	(0.1054)	(0.1405)
Boy	0.8832***	0.1010	0.8049***
	(0.1881)	(0.0886)	(0.1229)
Child age	0.0286	0.0788***	-0.0511***
	(0.0249)	(0.0118)	(0.0165)
Black (ref cat. white)	-1.4489***	-0.8107***	-0.7006***
	(0.2330)	(0.1105)	(0.1524)
Constant	12.0184***	3.4504***	8.8909***
	(0.9166)	(0.4230)	(0.6088)
Child-year Observations	5542	5542	5542

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10, + p<0.20

Table 8. Impacts of parental incarceration by childhood life stage on child behavior problems

	Dependent variable:		
	BPI: Total Score	BPI: Internalizing	BPI: Externalizing
	(1)	(2)	(3)
Parental Incarceration exposure			
Parental Incarceration prior to birth	0.4128	0.0467	0.3929
	(0.5217)	(0.2475)	(0.3384)
Parental Incarceration b/w Age 0-5	2.0423**	0.9604**	1.1650**
	(0.8782)	(0.4503)	(0.5396)
Parental Incarceration b/w Age 6-10	1.1947+	0.5774+	0.6896
	(0.8846)	(0.4252)	(0.5592)
Parental Incarceration b/w Age 11-16	3.9885***	1.5753**	2.5866***
	(1.4554)	(0.7334)	(0.9484)
Neighborhood quality (self-rated)			
(ref cat. Excellent)			
Very Good	0.5771**	0.1817+	0.4203***
	(0.2313)	(0.1111)	(0.1511)
Good	1.2560***	0.4904***	0.7963***
	(0.2692)	(0.1283)	(0.1754)
Fair	1.8186***	0.6286***	1.2470***
	(0.3367)	(0.1664)	(0.2154)
Poor	2.2003***	0.8683***	1.4421***
	(0.6105)	(0.2915)	(0.3954)
Neighbor policing for drugs			
(ref cat. Very likely)			
Likely	0.4719+	0.3139**	0.1390
	(0.3016)	(0.1439)	(0.1965)
Unlikely	0.1574	0.0948	0.0831
	(0.3031)	(0.1473)	(0.1975)
Very Unlikely	0.2324	0.1006	0.1319
	(0.2390)	(0.1152)	(0.1558)
Family member w/alcohol problem	1.7194***	0.8011***	0.9690***
	(0.3515)	(0.1741)	(0.2256)
Religiosity (ref cat. very)			
Somewhat	0.2899	0.1753+	0.1041
	(0.2700)	(0.1294)	(0.1797)
Not at all	0.5102**	0.2150*	0.2739*
	(0.2354)	(0.1139)	(0.1538)
Mother's Education	-0.2092***	-0.0724***	-0.1442***
	(0.0577)	(0.0268)	(0.0384)
Father's Education (if present)	-0.1325**	-0.0385+	-0.0959**
	(0.0593)	(0.0273)	(0.0396)
Mother married	-1.2921***	-0.5099***	-0.8311***
	(0.2170)	(0.1050)	(0.1403)
Boy	0.8911***	0.1128	0.8008***
	(0.1884)	(0.0886)	(0.1233)
Child age	0.0784	0.1082***	-0.0315
	(0.0667)	(0.0327)	(0.0430)
Black (ref cat. white)	-1.4283***	-0.8042***	-0.6861***
	(0.2324)	(0.1102)	(0.1521)
Constant	10.7154***	2.5439***	8.4921***
	(1.4620)	(0.7035)	(0.9497)
Child-year Observations	5,542	5,542	5,542

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10, + p<0.20