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Caregivers’ Expectations, Reflected Appraisals, and Arrests among Adolescents Who Experienced Parental Incarceration

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This research sought to identify a potential process by which intergenerational crime occurs, focusing on the effect of parental incarceration on adolescents’ subsequent arrests. We drew from Matsueda’s work on reflected appraisals as an explanatory mechanism for this effect. Thus, the present research examined whether caregivers’ and adolescents’ expectations for adolescents’ future incarceration sequentially mediated the effect of parental incarceration on adolescents’ actual arrest outcomes. Propensity score matching was used to examine this effect in a sample of 1,735 15- to 16-year-olds using NLSY97 data. Parental incarceration was positively related to caregivers’ expectations of adolescents’ future arrest. Moreover, caregivers’ expectations were strongly associated with adolescents’ expectations. Finally, the effect of parental incarceration on adolescents’ actual future arrest likelihood was partially mediated by caregivers’ and adolescents’ expectations for this outcome. This study revealed support for the proposition that the experience of parental incarceration may influence adolescents’ negative outcomes through reflected appraisals.
CAREGIVERS’ EXPECTATIONS, REFLECTED APPRAISALS, AND ARRESTS AMONG ADOLESCENTS WHO EXPERIENCED PARENTAL INCARCERATION

The United States has experienced more growth in its incarceration rate in the past four decades than any other nation (Walmsley, 2013). At least 2.3 million people are confined in the nation’s correctional facilities (Wagner & Rabuy, 2020). The increased reliance on incarceration by the American criminal justice system has also increased the number of parents who are incarcerated (Schirmer, Nellis, & Mauer, 2009). In fact, of those who were incarcerated in 2008, more than half were mothers and fathers, leaving an estimated 2.7 million children to navigate the experience of having a parent incarcerated that year (The Pew Charitable Trust, 2010). More recent estimates are needed, but it is clear that many families have been affected by parental incarceration. As such, its consequences for children have become a growing concern (Murphey & Cooper, 2015).

Scholars have discovered that parental incarceration has many collateral effects. For example, children of incarcerated parents often endure the trauma of witnessing their parent being arrested, undergoing changes to their living arrangements, and experiencing difficult visitation conditions (Braman, 2007; Comfort, 2007; Siegel, 2011). Compared to other children, they are more likely to experience depression (Swisher & Roettger, 2012; Swisher & Shaw-Smith, 2015), perform less well in school (Nichols & Loper, 2012; Habecker, 2013), and more frequently engage in antisocial and delinquent behaviors (Murray, Farrington, & Sekol, 2012; Murray, Loeber, & Pardini, 2012). These detrimental effects of parental incarceration can last over the course of children’s lives, including into adulthood (Lee, Porter, & Comfort, 2014; Murray & Farrington, 2008).

A growing body of literature shows that adolescents who have had a parent incarcerated also endure social stigma (Braman, 2007; Johnson, 2006; Siegel, 2011). To our knowledge, however, no studies have focused on how adolescents may be stigmatized by their formerly incarcerated parents or other caregivers currently living within the household (referred to collectively as “caregivers” from this point forward). Are adolescents who have experienced parental incarceration more likely
than others to be subjected to negative expectations—beliefs and judgments regarding the adolescent’s future achievement and behavior—from their current caregivers? Theory and research suggest that adolescents may internalize negative attitudes of others as “reflected appraisals” (Matsueda, 1992). That is, adolescents may come to perceive themselves as others see them. This is especially likely to occur when negative attitudes are expressed by parents (Matsueda, 1992). Yet, it remains unclear whether adolescents share caregivers’ negative expectations in ways that lead them to believe they might be incarcerated in the future just as their parents have been. It is also unknown whether these effects translate into actual increased likelihood of future arrest for adolescents. We used data from the National Longitudinal Study of Youth 1997 to answer these questions. We situate this study in the extant theory and research which are reviewed next.

**Explaining the Link Between Parental Incarceration and Adolescent Delinquency**

Research highlights that adolescents who have experienced parental incarceration will, over time, become involved in the criminal justice system and develop criminal histories of their own (Dannerbeck, 2005; Huebner & Gustafson, 2007), contributing to a pattern of intergenerational crime and stability of punishment (Aaron & Dallaire, 2010; Jacobsen, 2019; Murray & Farrington, 2005). The process that leads to these adverse outcomes is unclear, but scholars have alluded to the stigma associated with parental incarceration as possible causal mechanism. That is, not only is an incarcerated parent viewed negatively by society, but those negative societal reactions also may spill over into attitudes toward the children who were left behind (e.g., Siegel, 2011), as some people believe that the “apple doesn’t fall far from the tree” (Phillips & Gates, 2011, p. 288). For example, Wildeman et al. (2017) presented teachers with vignettes that introduced a new student who would be joining their classroom that year. The researchers experimentally manipulated whether or not that student’s father was incarcerated and found that parental incarceration increased teachers’ expectations that the student would engage in problem behaviors. These findings, along with those of
other studies (Braman, 2007; Johnson, 2006; Siegel, 2011), suggest that adolescents of incarcerated parents endure social stigma.

Of importance, caregivers have been found to attribute their child’s current behavioral problems to the social stigma that stems from having an incarcerated parent (Shlafer & Poehlmann, 2010). However, it is also possible that caregivers’ own expectations might explain their children’s expectations and engagement in certain behaviors. That is, caregivers, whether they are formerly incarcerated parents or other parental figures, may come to expect that adolescents who have experienced parental incarceration will go on to engage in delinquency and crime. Thus, we hypothesize that the link between parental incarceration and adolescent delinquency is partially explained by caregivers’ negative expectations that adolescents will follow in the footsteps of their incarcerated parents.

One important implication of such an effect is that caregivers’ expectations may serve to transmit values that adolescents share as they are developing (Mesurado et al., 2014). Within families, caregivers share frequent interactions, close involvement, and intimate relationships with their children (Steinberg, 2001). Thus, parents have a strong influence on children’s attitudes and behaviors (Snyder & Patterson, 1995). This influence can be understood through the lens of symbolic interactionist theory, which has three fundamental premises: (1) individuals respond to situations based on the meanings they have ascribed to them, (2) these meanings derive from relationships with others, and (3) those meanings derived from others go through an interpretative process (Blumer, 1986). According to Matsueda (1992), adolescents view themselves and adjust their behaviors accordingly through the perspectives of others. Adolescents then engage in delinquency based on these “reflected appraisals”; if others view them as delinquent, they are likely to accept these views of themselves and engage in delinquent behavior.

Indeed, research has confirmed that parental appraisals can strongly influence adolescents’ reflected appraisals of themselves as well as their delinquency (Kavish, Mullins, & Soto, 2016;
Matsueda, 1992). Matsueda’s (1992) research indicated that parents’ appraisals that their children would get into trouble and break rules were interpreted as meaningful by adolescents and transmitted into reflected appraisals of themselves as rule violators. Matsueda also showed that adolescents’ reflected appraisals had a direct effect on their future engagement in delinquency (e.g., drug use, minor delinquency, serious crime offenses). Studies from psychology and public health also provide evidence that parental beliefs and expectations can shape adolescent development and outcomes, including, for example, school performance (Hill, 2001), educational achievement (Davis-Kean, 2005; Reynolds & Pemberton, 2001), impulsivity (Bechtold, Cavanagh, Shulman, & Cauffman, 2014), alcohol use (Nash, McQueen, & Bray, 2005), and other antisocial behavior (Ohene, Ireland, McNeely, & Borowsky, 2006).

The extant literature suggests the need to examine whether caregivers’ expectations differ for adolescents who have experienced parental incarceration and those who have not, and how those expectations might be related to adolescents’ own expectations (i.e., “self-appraisals”) of having contact with the criminal justice system in later years. Moreover, to the extent that parental incarceration influences whether caregivers expect adolescents to go on to commit crimes of their own and those expectations coincide with adolescents’ expectations, it could increase adolescents’ actual likelihood of future arrest or incarceration. Preliminary evidence for part of this process comes from Simons-Morton’s (2004) prospective study of sixth-grade adolescents. Results showed that, even after controlling for adolescents’ perceptions of how closely their parents were involved or monitored their behavior, adolescents’ expectations about how their parents would respond if they discovered the adolescent smoking were significantly related to whether they later initiated smoking. Specifically, the less upset adolescents thought their parents would be, the more likely they were to begin smoking over the course of the following school year. Other research found a similar effect of high school students’ beliefs about parental disapproval of deviant behaviors on alcohol use (Nash et al., 2005). It remains unknown, however, whether parental incarceration shapes caregivers’ and
adolescents’ expectations in ways that influence adolescents’ propensity to engage in delinquent and criminal behavior. We expect that, compared to others, adolescents who have experienced parental incarceration are more likely to be arrested later in life because their caregivers’ expect them to be, and those expectations lead them to generate their own negative expectations.

**Overview of Current Research**

The study makes a unique contribution to the literature because it seeks to identify the mechanisms that underlie the effect of parental incarceration on adolescent delinquency. Using the National Longitudinal Survey of Youth (“NLSY97”; Bureau of Labor Statistics, 2015), we expected to replicate this well-established effect (see, e.g., Aaron & Dallaire, 2010; Kopak & Smith-Ruiz, 2016; Murray & Farrington, 2005) while also elucidating the roles that caregivers’ and adolescents’ expectations for future arrest play in explaining it. Specifically, we used the propensity score matching technique to test our hypotheses that adolescents who have experienced parental incarceration would experience different outcomes compared to adolescents who have never experienced parental incarceration. We expected that parental incarceration would increase caregivers’ expectations regarding the likelihood of future arrest for adolescents. We also anticipated that caregivers’ expectations of future arrest would, in turn, be positively related to adolescents’ expectations of future arrest, such that the higher caregivers’ expectations of future arrest were, the higher adolescents’ expectations of future arrest would be. Ultimately, we predicted that adolescents’ expectations of future arrest would translate into adolescents’ actual arrest. Thus, we hypothesized that the future of adolescents who experienced parental incarceration could be predicted through the expectations of their caregivers and, in turn, their own expectations. Evidence in support of these hypotheses would suggest specific points for intervention for adolescents who have experienced parental incarceration.

**Method**

*Data Source*
This study utilized data from the NLSY97 (Bureau of Labor Statistics, 2015), which tracked 8,984 adolescents from 6,819 unique households in the United States from 1997 to 2016. A screening interview was used to identify adolescents who (a) were between 12 and 16 years old as of December 31, 1996 and (b) had a mother, father, or other caregiver living in the household. To document their transition from adolescence to adulthood, adolescent participants were interviewed annually through a computer-assisted personal interviewing system. In addition, caregivers were interviewed in the first year of the survey. The survey assessed caregivers’ and adolescents’ expectations for future arrest at Round 1, adolescents’ actual experiences of subsequent arrest at Rounds 5 and 6, and adolescents’ retrospective reports of parental incarceration at Round 16, as well as other essential information, including participants’ race/ethnicity, sex, age, household income, age of biological mother at first birth, past delinquency, type of family household, and peer delinquency at Round 1, as well as other life experiences not reported herein.

**Measures**

**Independent, Mediating, and Dependent Variables**

**Parental incarceration.** Parental incarceration was measured by asking the adolescent participants whether their parents had ever served time in prison. Specifically, participants responded *yes or no* to these questions: “As far as you know, did your mother ever serve a prison sentence for a conviction before your 16\(^{th}\) birthday?” and “Did your father ever serve a prison sentence for a conviction before your 16\(^{th}\) birthday?” These questions were administered during Round 16 of the NLSY97 in 2013; thus, it inquired about adolescents’ experiences retrospectively when they were between 31 and 32 years old. Instructions advised them to exclude from their answers any period of time their parents had spent in a juvenile institution, awaiting trial, or completing community service. Adolescents were coded as having experienced parental incarceration if they reported *yes* to either of the two questions.
**Caregivers’ expectations.** Caregivers’ expectations were assessed by asking one responding caregiver in the household, “What is the percent chance by [youth’s] 20th birthday, [youth] will serve time in prison or jail?” The caregiver indicated a response on a scale that ranged from 0% to 100%, with higher percentages indicating that caregivers were more likely to expect the youth would be incarcerated in the future. This measure was administered during Round 1 of the longitudinal study in 1997.

**Adolescents’ expectations.** Adolescents’ expectations were assessed by having adolescent participants respond to the question, “What is the percent chance you will serve time in jail or prison between now and when you turn 20?” As when assessing caregivers’ expectations, adolescents responded on a scale that ranged from 0% to 100%, with higher percentages indicating that adolescents were more likely to expect themselves to be incarcerated in the future. This measure also was administered at Round 1 in 1997.

**Adolescents’ arrests.** Beginning at Round 2 in 1998, the NLSY97 asked adolescent participants whether, in the year preceding the interview, they had been arrested by the police or taken into custody for an illegal or delinquent offense (excluding minor traffic violations) (yes or no). Because the NLSY97 measures of caregivers’ and adolescents’ expectations asked about the likelihood that the adolescent would be arrested up to age 20, we focused our measure of adolescents’ arrests on those that adolescents reported when they were 20 years old or younger. Specifically, we analyzed responses from five years for 15-year-old adolescents (through Round 6 in 2002) and four years for the 16-year-old adolescents (through Round 5 in 2001). Adolescents were coded as having experienced arrest if they responded yes during any of the relevant survey rounds.

**Matching and Control Variables**

We accounted for a variety of factors known to relate to parental incarceration, caregivers’ expectations, and adolescents’ likelihood of delinquency and arrest. For instance, race and ethnicity is related to parental incarceration (The Pew Charitable Trust, 2010) and biological sex has been
found to influence caregivers’ expectations (Mesurado, 2014). Also, a mother’s early age at first birth (Pogarsky, Lizotte, & Thornberry, 2003), nontraditional family structures (Williams, 2006), and association with peers who engage in deviant behavior (Shader, 2001) have been shown to each relate to elevated risk of adolescent delinquency. We also assessed adolescents’ history of delinquency and arrest prior to enrolling in the NLSY97 (i.e., at either age 15 or 16). Each of these control variables was measured at Round 1 in 1997.

**Race/ethnicity.** Adolescent respondents first identified their race and then their ethnicity. The race/ethnicity variable was coded in NLSY97 into four categories: Black, Hispanic or Latino, Mixed Race (Non-Hispanic), and White (Non-Black, Non-Hispanic).

**Biological sex.** During the screening interview, adolescents responded to the question, “What is your sex?” and caregivers responded to the question, “What is [name of youth]’s sex?” Responses were then verified in the Round 1 interview in 1997. Adolescents’ and caregivers’ responses were combined to indicate whether the adolescent was *male* or *female*.

**Age.** During the screening interview, adolescents provided their birthdate including the month, day, and year. In Round 1, adolescents and caregivers verified the birth year of the adolescent respondent. We used the birth year to calculate adolescents’ age in years at the time of the interview.

**Household income.** Adolescents and caregivers answered a series of questions related to non-farm and farm wages, the wages of the caregiver’s spouse/partner, child support, interest and dividends from stocks or mutual funds, rental income, retirement pension/alimony/Social Security payments, parents’ income for those adolescents who resided with parents, monetary gifts (other than allowance) from parents, public support sources, and other income. Based on this information, gross household income was calculated for the previous year (1996).

**Age of biological mother at first birth.** The NLSY97 assessed the age of adolescents’ biological mothers when their first child was born. The mean age on this variable was 23 years old
We addressed extremely low ages of first birth by excluding outlier data points which were reported by no more than two women. This resulted in missing data for 11 participants and a minimum age of 12, which is consistent with the average age of menstruation onset (Chumlea et al., 2003).

**Type of family household.** Caregivers indicated whether the adolescent lived in a household with both biological parents (yes or no).

**Peer delinquency scale.** Following Williams (2006), a peer delinquency scale was created by combining five items assessing the percentage of the adolescent’s friends who smoked, drank alcohol, belonged to a gang, used illegal drugs, or cut class or school. The scale was reliable in this study ($\alpha = .83$, $M$ inter-item correlation = .50) so a mean score was computed to represent the percentage of the adolescent’s peers who participated in delinquent behavior.

**Adolescent delinquency scale.** Developed by Child Trends, Inc. (Moore et al., 1999), the adolescent delinquency scale represents a combination of responses to ten items. Adolescents identified whether they had ever engaged in the following delinquent activities: (a) ran away from home, (b) carried a gun, (c) belonged to a gang, (d) purposely damaged or destroyed properly, (e) stole something worth less than $50, (f) stole something worth more than $50, (g) committed other property crimes, (h) attacked someone with the idea of seriously hurting them, or (i) sold or helped sell marijuana or other hard drugs. They also reported whether they had ever been arrested by the police and taken into custody. Adolescents responded yes or no to each of these items. An index score was calculated by summing the number of yes responses. Index scores ranged from 0 to 10, with higher scores representing more delinquency.

**Sample**

The NLSY97 includes data from a total of 8,984 adolescents and their responding caregivers. One responding caregiver within the household was selected based on a pre-ordered priority list (e.g., biological mother chosen before biological father and other parental figures) and their availability to
complete the interview. Only caregivers of adolescents who were 15 or 16 years old at the time of the initial interview (Round 1) answered the question about their expectations regarding adolescents’ future arrest, however, so we limited our sample to these 2,542 adolescents. Within this subsample, 180 adolescents reported having experienced parental incarceration (n = 26 maternal incarceration, n = 144 paternal incarceration, n = 10 both maternal and paternal incarceration), whereas 2,362 did not. Table 1 presents descriptive statistics (means and standard deviations) and t-tests examining differences as a function of experiencing parental incarceration.

**Propensity Score Matching**

As shown in Table 1, preliminary analyses revealed differences between adolescents who had experienced parental incarceration and those who had not in terms of race/ethnicity, household income, age of biological mother at first birth, type of family household, peer delinquency, and adolescents’ prior delinquency. Due to these differences and the relatively small proportion of adolescents experiencing parental incarceration, we used the propensity score matching (PSM) approach to balance the groups across several of these control variables (Rosenbaum & Rubin, 1983). In particular, we focused on matching the subsamples on race/ethnicity, household income, and age of biological mother at first birth. In addition, we used adolescents’ sex and age as matching variables due to past work showing that these variables relate to caregivers’ expectations (Reynold & Pemberton, 2001; Solorzano, 1992). We did not, however, match along type of family household, peer delinquency, or adolescents’ prior delinquency because these variables were assessed after parental incarceration occurred, and thus, we could not determine that responses reflected adolescents’ experiences prior to parental incarceration. This means that these variables may partially explain the relation between parental incarceration and adolescents’ later arrest rather than confound it (see Caliendo & Kopeinig, 2008). Although we did not match participants along these variables, we retained them as controls in later analyses.
First, the propensity for each individual adolescent to experience parental incarceration was estimated using a logistic regression model with race/ethnicity, sex, age, household income, and age of biological mother at first birth entered as matching variables. The predicted probability of experiencing parental incarceration was saved as a propensity score for each adolescent. Then, each adolescent who experienced parental incarceration was matched to an adolescent who had not experienced parental incarceration using the radius matching technique, following prior research on adolescent outcomes using NLSY97 data (Brakenhoff, Jang, Slesnick, & Snyder, 2015). This technique imposes a tolerance level—a “caliper”—which matches participants only when their propensity scores fall within the maximum distance of a predefined neighborhood (Caliendo & Kopeining, 2008). We set this caliper to .02 and allowed replacement with similar matched adolescents. This resulted in the same or similar matched adolescents as the nearest-neighbor approach, and regardless of whether either technique was done with or without replacements. Unlike the nearest-neighbor method, however, the radius matching technique allowed for the comparison of more participants within the caliper and, as a result, reduced the potential risk of unfit matches (Caliendo & Kopeining, 2005).

The final matched group included 134 adolescents who had experienced parental incarceration and 1,601 adolescents who had not ($N = 1,735$). The 807 adolescents who were not matched were excluded from all subsequent analyses. Balance-checking diagnostics considered the standardized bias before and after matching and $t$-tests of the equality of means between both groups. These analyses revealed that the matching technique reduced the averaged standardized bias by 91% and the matched samples of adolescents who did and did not experience parental incarceration did not significantly differ in terms of race/ethnicity, household income, sex, age, or age of biological mother at first birth (see Table 1). Although certain attributes of caregivers (e.g., relationship to adolescent, history of incarceration) could not be identified among the final sample of 15-to 16-year old adolescents, almost all were women (92%). Next, the matched sample was used to estimate the
effects of experiencing parental incarceration on caregivers’ expectations of adolescents’ future arrest likelihood, adolescents’ expectations of their own future arrest likelihood, and, finally, adolescents’ actual experiences of being arrested. This was done, first, using a series of OLS and logistic regression analyses that both did and did not account for mediating pathways for comparison, and, second, by testing for serial mediation using Hayes’s (2018) PROCESS macro.

**RESULTS**

The Effect of Experiencing Parental Incarceration on Caregivers’ Expectations of Adolescents’ Future Incarceration Likelihood

An OLS regression using the matched sample and including control variables was used to examine the association between adolescents’ experience with parental incarceration and caregivers’ expectations of adolescents’ future incarceration likelihood (see Model 1, Table 2). This model revealed a significant effect of parental incarceration on caregivers’ expectations of adolescents’ future incarceration likelihood. Specifically, as expected, caregivers of adolescents who experienced parental incarceration reported higher expectations that the adolescents would serve time in jail or prison by their 20th birthday relative to caregivers of adolescents who never experienced parental incarceration. Results indicated that experiencing parental incarceration was associated with a 3% increase in caregivers’ expectations that adolescents would later be incarcerated.

In addition, adolescents’ prior delinquency and peer delinquency were positively associated with caregivers’ expectations for adolescents’ future incarceration, whereas living with both biological parents was negatively related to caregivers’ expectations for adolescents’ future incarceration.

The Effect of Experiencing Parental Incarceration on Adolescents’ Expectations of Their Own Future Incarceration Likelihood

A second OLS regression, again using the matched sample and including control variables, examined the association of adolescents’ experience with parental incarceration and adolescents’
expectations for their own future incarceration likelihood (see Model 2, Table 2). Results revealed a nonsignificant association between parental incarceration and adolescents’ expectations of future incarceration. Therefore, adolescents had similar expectations that they would spend time in jail or prison by their 20th birthday regardless of whether they had had a parent previously incarcerated or not. A third model replicated this analysis while adding caregivers’ expectations of adolescents’ future incarceration likelihood as a predictor variable (see Model 3, Table 2). Parental incarceration remained a nonsignificant predictor of adolescents’ expectations of future incarceration. However, as hypothesized, caregivers’ expectations were significantly related to adolescents’ expectations of future incarceration. Therefore, the more caregivers expected adolescents to be incarcerated in the future, the more adolescents expected this for themselves. For every 1% increase in caregivers’ estimated likelihood of adolescents’ future likelihood there was a corresponding .24% increase in adolescents’ estimates of this outcome.

Across both of these models, an adolescents’ history of delinquency was positively related to adolescents’ expectations for future incarceration. Neither peer delinquency nor type of family household were associated with adolescents’ expectations of future arrest, however.

**The Effect of Experiencing Parental Incarceration on Adolescents’ Arrest by Age 20**

A logistic regression analysis using the matched sample and including the control variables examined how adolescents’ experiences of parental incarceration impacted the likelihood of adolescents’ subsequent arrest (see Model 4, Table 2). Results indicated that adolescents who experienced parental incarceration were significantly more likely to be arrested or taken into custody by the time they were 20 years old as compared to adolescents who never experienced parental incarceration. Specifically, adolescents’ experiences with parental incarceration increased the odds of the adolescent being arrested by 2.32 times. A fifth and final model additionally included caregivers’ and adolescents’ expectations of adolescents’ future incarceration likelihood as mediator variables (see Model 5, Table 2). Results showed that parental incarceration remained a significant predictor
and neither caregivers’ and adolescents’ expectations were significantly related to adolescents’ future incarceration.

Across both of these models, an adolescent’s history of delinquency was positively related to adolescents’ expectations for future incarceration. Type of family was not significantly associated with adolescents’ likelihood of incarceration by age 20. Peer delinquency significantly predicted adolescents’ future incarceration in Model 4 but this association was no longer significant when caregivers’ and adolescents’ expectations were taken into account in Model 5.

**Testing for Serial Mediation**

Next, we used the PROCESS regression macro (Hayes, 2018) with percentile bootstrapping based on 10,000 samples to determine whether experiencing parental incarceration was indirectly associated with adolescents’ likelihood of arrest by age 20 via caregivers’ expectations and adolescents’ expectations of future incarceration. The strength of this analysis is that it estimates the indirect association of the independent variable and the dependent variable through serially related multiple mediators (i.e., caregivers’ expectations and, in turn, adolescents’ expectations) while including multiple pathways and accounting for all other possible direct and indirect associations. These analyses were conducted using our matched samples and included type of family household, peer delinquency, and adolescents’ history of delinquency as control variables.

The analysis revealed that the model significantly predicted adolescents’ later likelihood of arrest, $\chi^2(6, 1390) = 239.59, p < .001$, Nagelkerke $R^2 = .24$. (See Figure 1.) Even after accounting for additional pathways, experiencing parental incarceration continued to have a significant direct relation to adolescents’ subsequent arrest likelihood. Even so, and in contrast to the results of the prior logistic regression (i.e., Model 5), caregivers’ expectations and adolescents’ expectations were each also significantly directly related to adolescents’ arrest likelihood. With regard to mediation, parental incarceration did not have a significant indirect effect on adolescents’ arrest through either caregivers’ expectations, indirect effect = 0.05, SE = 0.04, 95% CI [-0.004, 0.14], or adolescents’
expectations alone, indirect effect = 0.03, SE = 0.03, 95% CI [-0.04, 0.10]. It was only when both caregivers’ and adolescents’ expectations were taken into account that experiencing parental incarceration had a significant, albeit small indirect effect on adolescents’ future arrest likelihood, indirect effect = 0.02, SE = 0.01, 95% CI [0.001, 0.05]. Therefore, as predicted, compared to others, adolescents who experienced parental incarceration had caregivers with higher expectations that the adolescent would later be incarcerated. In turn, the more caregivers expected that adolescents would experience subsequent incarceration, the more likely the adolescents themselves expected that they would later be incarcerated. Finally, the more adolescents expected to be incarcerated by the time they turned 20 years old, the more likely they were to actually be arrested by that age.

**DISCUSSION**

A number of studies have revealed a consistent pattern linking the experience of parental incarceration to adverse outcomes for adolescents, including both immediate and long-term negative effects (Shlafer et al., 2013; Swisher & Shaw-Smith, 2015; Wakefield & Wildeman, 2013). One of these effects is that adolescents who have had a parent incarcerated are more likely to engage in delinquency in the future (Aaron & Dallaire, 2010; Kopak & Smith-Ruiz, 2016; Murray & Farrington, 2005). Although this negative association between parental incarceration and adolescent criminal justice involvement had been well documented in prior work, what remained unclear is the process by which it occurs. Given that adolescents who have experienced parental incarceration face social stigma from society (Braman, 2007; Phillips & Gates, 2011; Siegel, 2011; Wildeman et al., 2017), we sought to examine the occurrence of stigma in relationships with caregivers. Specifically, we investigated how parental incarceration related to caregivers’ expectations that adolescents would have future run-ins with the criminal justice system and, in turn, adolescents’ expectations and actual arrest likelihood.

Our results are consistent with mounting evidence that parental incarceration has negative collateral consequences for adolescents. First, we found that adolescents who experienced parental
incarceration, compared to those who had not, had caregivers who thought it was more likely that the adolescents would serve time in jail or prison by the time they were 20 years old. These results portray a level of stigma—whether intentional or unintentional—which is parallel to Wildeman et al.’s (2017) findings that teachers’ expectations of their students were shaped by adolescents’ experience with parental incarceration. Our study demonstrates that parental incarceration may put adolescents at risk of stigmatizing reactions and biased assumptions about their future within their own households from those with whom they are the closest. This effect is somewhat ironic given that caregivers recognize that social stigma from others has a negative impact on such adolescents (Shlafer & Poehlmann, 2010).

Despite finding an association between parental incarceration and caregivers’ expectations, caregivers’ expectations did not have a statistically significant direct effect on adolescents’ arrest outcomes, even when controlling for other factors. Rather, caregivers’ expectations for adolescents’ future incarceration predicted adolescents’ expectations for this outcome. Further, analyses that accounted for serial multiple mediation and all direct and indirect pathways revealed parental incarceration relates to adolescents’ actual arrest outcomes via both caregivers’ and adolescents’ expectations. Specifically, parental incarceration was associated with caregivers believing it was more likely that the adolescents under their care would spend time in jail or prison by the time they were 20 years old. Further, the more caregivers expected this outcome, the more adolescents did, too. Finally, the more adolescents expected to be incarcerated, the more likely they were to actually have the experience of being arrested.

In formulating our hypotheses, we relied on Matsueda’s (1992) theory and research highlighting that the way parents or parent figures view adolescents influences adolescents’ views of themselves as well as their behaviors. Our findings indicate that this process can be used to understand increased rates of arrest among adolescents who have had a parent incarcerated relative to those who have not. That is, the results suggest that negative self-appraisals occur for adolescents
who endure stigma from close others, and Matsueda’s theory on reflected appraisals helps to explain how these expectations are being manifested in adolescents’ arrest outcomes. This aligns with prior research showing that parents play an integral role in adolescents’ development (Steinberg, 2001), and highlights the importance of interrupting the negative effect of parental incarceration on caregivers’ expectations for adolescents, as adolescents appear to react to those expectations in ways that contribute to the intergenerational cycle of crime.

**Limitations and Future Directions**

It is important to address the limitations of this research as well as work that remains to be done. To begin, the item used to assess caregivers’ expectations related to adolescents’ future incarceration likelihood was administered only to caregivers of 15- and 16-year-old adolescents, which reduced the size of the sample relative to the overall number of participants who completed the NLSY97. Propensity score matching further reduced the total sample included in this study to 1,735 adolescents, only 134 of whom had experienced parental incarceration. Even so, the regression models included only seven predictor variables, and our sample exceeded the recommended minimum sample of ten participants per parameter (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996). Also, we used sophisticated models with bootstrapping to enhance the rigor of our mediation analyses. Still, future research with larger, more diverse samples of adolescents who have experienced parental incarceration is needed for a number of important reasons.

In particular, further work is needed to understand whether parental incarceration is experienced differently by adolescents with different racial, ethnic, or gender identities. Black children are more likely to experience parental incarceration. One Pew Charitable Trust (2010) report revealed that one in nine Black children had a parent in prison at the time of data collection. This indicates the practical importance of understanding the impact of parental incarceration on Black adolescents. Yet this goal is also theoretically important because the process by which parental incarceration leads to negative outcomes may differ based on adolescents’ race and gender. Koita and
Triplett’s (1998) analysis revealed that White adolescent males, White adolescent females, and Black adolescent males viewed themselves the way they believed their parents, teachers, and friends perceived them. Black adolescent females, however, were an inadequate fit for the reflected appraisal model. It remains unknown whether Black girls are similarly immune to caregivers’ stigmatizing reactions to parental incarceration, or even whether Koita and Triplett’s findings replicate when caregivers’ views and expectations are disaggregated from those of other sources of social support or stigma.

In the context of considering possible moderators of effects of parental incarceration on delinquency, adolescents’ gender may shape caregivers’ expectations even more than their race. Past research suggests that, regardless of race, parents are less likely to expect girls to engage in delinquency than boys. For example, Mesurado et al. (2014) found that, across three culturally diverse countries, compared to boys, girls (a) perceived their parents as being less tolerant of antisocial behavior and (b) were more likely to engage in prosocial behaviors. Further, Bartusch and Matsueda (1996) found that the positive associations between parenting labels and adolescents’ reflected appraisals of being rule violators and increased delinquency was stronger for males than females. These results indicate that, in general, there may be differences in caregivers’ expectations for boys versus girls, or at least boys and girls might interpret these expectations differently. Research is needed to understand whether parental incarceration interacts with adolescents’ gender to further affect the process by which expectations are translated into behavior.

Of importance, due to our small sample size, we also were unable to investigate how characteristics of the parent who was incarcerated might influence adolescents’ future arrest likelihood. One variable that future research should consider is whether adolescents experience maternal or paternal incarceration, or both. Research has acknowledged that the disruptive effect of parental incarceration may differ based on whether the youth’s mother or father is incarcerated (Foster & Hagan, 2013; Wilderman & Turney, 2014). For instance, Wilderman and Turney (2014)
found that, on the one hand, paternal incarceration led to increased negative behavioral outcomes for children, even after analyses controlled for a variety of background characteristics. On the other hand, however, maternal incarceration did not significantly influence 19 of 21 behavioral outcomes after adjusting for family and financial condition. Moreover, maternal incarceration was actually beneficial for children in cases in which the mother had been depressed or abusing substances, had poor self-control, or had been incarcerated previously. Thus, it will be important for future research to also investigate whether even the effect of parent gender on adolescents’ future arrest likelihood depends on other parental factors.

In addition to sampling limitations, using secondary data analysis presented a number of other challenges to appreciating the process under study. To begin, several of the variables of interest were measured simultaneously rather than in separate survey rounds, precluding our ability to make causal inferences about some of the effects we predicted (i.e., between caregivers’ and adolescents’ expectations). In addition, the survey asked about expectations for incarceration but assessed later arrests. Although incarceration and arrest are conceptually similar and caregivers and adolescents likely estimate their probability at similar rates, the imprecise measurement may have introduced noise into the data and findings.

Other measurement issues raise more substantive questions. For example, because key measures were completed only by 15- and 16-year-old adolescents in the NLSY97, it remains unknown whether our findings generalize to explain the experiences of younger or older adolescents. Caregivers’ beliefs about how parental incarceration will impact adolescents’ outcomes may vary depending on their developmental stage. Also, adolescents may be more or less likely to adopt caregivers’ negative expectations depending on the stage of adolescence that they are experiencing (e.g., the degree to which they have found their identity). Future work within this area should adopt a developmental psychological perspective to continue to unravel the nuanced dynamics between caregivers’ expectations and adolescents’ during earlier and later stages of development. However,
several studies have shown that poorer quality relationships with and weaker attachment to parents is associated with delinquent behavior throughout adolescence (Jang, 1999; Keijzers, Loeber, Branje, & Meeus, 2011; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1991), suggesting that parents’ negative expectations are likely to impact criminal justice outcomes for younger and older adolescents, too.

In fact, both caregivers’ and adolescents’ expectations may change over the course of adolescence. Despite this being a longitudinal study, we were not able to observe such change because caregivers’ expectations were measured at only one time point. One issue of particular relevance is that caregivers’ may develop more negative expectations for adolescents over time as adolescents have increasing opportunities to develop a pattern of delinquency as they age (Ulmer & Steffensmeier, 2014). For youth who have experienced parental incarceration, such delinquency could be perceived by caregivers as evidence of an intergenerational cycle of crime, whereas the absence of delinquency may ease caregivers’ concerns that parental incarceration will lead to negative outcomes for the adolescent. The need to examine how this process evolves over time is highlighted by the fact that our results showed a consistent effect of adolescents’ past history of delinquency on caregivers’ expectations regarding the likelihood of future arrest for adolescents, adolescents’ own expectations for this outcome, and adolescents’ actual arrests by age 20. This finding reinforces the importance of understanding the full scope of factors that lead adolescents to engage in delinquency in the first place.

Yet even after controlling for the strong effect of adolescents’ past history of delinquency in our final model, caregivers’ and adolescents’ expectations remained significant mediators of the association between parental incarceration on adolescents’ arrest outcomes. This suggests that, going forward, research also should explore other effects of parental incarceration on caregiver-adolescent relationships, as caregivers may have not only more negative expectations but also fewer positive expectations (e.g., that the adolescent will graduate from high school or get a job) when an
adolescent has experienced parental incarceration. These kinds of effects on caregivers’ expectations could help to explain findings from prior research indicating that, compared to adolescents who have never experienced parental incarceration, those who have are more withdrawn from relationships with their caregivers (Johnston, 1995; Kampfner, 1995). That is, caregivers’ negative expectations may make adolescents feel unable or unwilling to discuss and work through their feelings with their parents and parent figures (Johnston, 1995; Kampfner, 1995). Although the NLSY97 included measures of parenting styles, parent-adolescent relationship, and family and home environment, only 12- to 14-year-olds completed them and we could not assess their relations to caregivers’ stigmatizing reactions for 15- to 16-year-olds. Moreover, the NLSY97 did not reveal whether the responding caregiver was the biological parent of the adolescent, nor if the responding caregiver was the formerly incarcerated parent, both distinctions that could be important for understanding the nature of caregivers’ expectations as well as their likelihood of being internalized by adolescents. That is, either caregivers’ expectations of adolescents’ future arrest likelihood, the manner in which they are communicated to adolescents, and/or the strength of their influence on adolescents’ actual arrest outcomes could vary based on the caregiver’s relationship to the adolescent as well as the incarceration experience of the caregiver. These possibilities should be examined in future research, particularly in light of past work showing increased conflict between parents who have returned home following incarceration and their adolescent children (Aaron & Dallaire, 2010).

Finally, the results indicated that, overall, caregivers and adolescents had low expectations related to adolescents’ future incarceration. Moreover, these expectations only partially mediated the effect of experiencing parental incarceration on adolescents’ future arrest likelihood. However, it is important to acknowledge that adolescents who have experienced parental incarceration are more likely to come from a host of disadvantages, such as having parents who are young, minority, less educated, in poverty, and single and raising children on their own (Geller, Garfinkel, & Western, 2011; Wildeman, 2009). Thus, parental incarceration may be confounded with these other risk
factors that are known to be associated with increased delinquency and arrest likelihood (Gase et al., 2016). Also, in general, caregivers have been shown to be more likely to label adolescents who come from these disadvantaged backgrounds as delinquent (Matsueda, 1992). Parental incarceration may exacerbate this effect. It is also possible that parental incarceration affects adolescents’ arrest outcomes by shaping other experiences outside of caregivers’ and adolescents’ own expectations. Our results consistently revealed that type of family household and exposure to peers who were engaging in delinquency did not predict adolescents’ future arrest. However, a number of other factors were not measured in this study, including the types of crimes committed by either parents or adolescents, or the duration and frequency of the parental incarceration. In the future, researchers might supplement self-report survey data with official incarceration and arrest records to yield a more accurate and complete picture of parents’ experiences and their relations to adolescents’ behavior.

Conclusion

Results of this study highlight the importance of relationships between caregivers and adolescents in shaping adolescents’ responses to parental incarceration. Specifically, this research demonstrated the relations between (a) adolescents’ experience with parental incarceration and caregivers’ expectations of adolescents’ future incarceration, (b) caregivers’ expectations and adolescents’ expectations of their future incarceration, and (c) both caregivers’ and adolescents’ expectations and adolescents’ actual arrest outcomes. Additional research is still needed to understand how caregivers’ transmit their negative perceptions and beliefs to adolescents over time so that this process can be interrupted. Qualitative research may be particularly effective at revealing the consequences of parental incarceration for adolescents who experience it, and to reveal methods that facilitate positive parenting skills.

As this study begins to fill the gap in understanding the relations between parental incarceration and adolescents’ arrest, it also provides some direction for policymakers. In particular,
our findings highlight the need for programs designed to support healthy caregiver-adolescent relationships in families affected by parental incarceration. These types of programs should be directed at reducing caregivers’ stigmatizing reactions to adolescents who have experienced parental incarceration, improving communication skills for caregivers and adolescents in the context of incarceration, mitigating negative impacts of parental incarceration on families through professional support and organizations, providing mentorship programs that increase prosocial behaviors and positive reflected appraisals for adolescents, and creating a safe space for caregivers and adolescents to share their experiences and cope with change in peer support contexts. It is also important to consider that families coping with parental incarceration have more limited economic means and fewer resources than other families (Geller, Garfinkel, & Western, 2011; Wildeman, 2009). Thus, work is needed to develop accessible support programs and interventions designed to increase caregivers’ and adolescents’ ability to maintain positive relationships with each other (see also Hairston, 2002). By understanding relations between prison contact and family dynamics, researchers, practitioners, and policymakers will be better positioned to address the collateral effects of incarceration for parents, caregivers, and adolescents. Indeed, it is critical for researchers to continue the work of unpacking the process by which parental incarceration negatively impacts the millions of adolescents who experience it so that future policy reform addresses the needs of the entire family.
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Table 1
Descriptive Statistics as a Function of 15- and 16-year-olds’ Experiences of Parental Incarceration and Propensity Score Matching

| Parental Incarceration | Unmatched Samples | Parental Incarceration | Matched Samples |
|------------------------|-------------------|------------------------|----------------|
|                        | Yes | No |             | Yes | No |             |
|                        | M (SD) | M (SD) | t | df | M (SD) | M (SD) | t | df |
| Dependent Variables    |      |      |      |    |      |      |    |    |
| Caregivers’ Expectations* | 8.00 (18.37) | 2.69 (9.91) | 5.94*** | 2,172 | 8.46 (19.09) | 3.16 (11.47) | 2.67** | 1,658 |
| Adolescents’ Expectations* | 7.05 (16.17) | 4.98 (12.61) | 2.05* | 2,506 | 7.65 (16.50) | 5.48 (13.74) | 1.16 | 1,717 |
| Adolescents’ Future Arrest | 0.43 (0.50) | 0.22 (0.41) | 5.97*** | 2,095 | 0.45 (0.50) | 0.24 (0.43) | 3.41*** | 1,460 |

Matching Variables

|                      | Yes (n = 180) | No (n = 2,362) |                        | Yes (n = 134) | No (n = 1,601) |                        |
|                      | M (SD) | M (SD) | t | df | M (SD) | M (SD) | t | df |
| Black                | 0.47 (0.50) | 0.25 (0.43) | 6.65*** | 2,540 | 0.47 (0.50) | 0.50 (0.43) | -0.38 | 1,733 |
| Hispanic             | 0.21 (0.41) | 0.21 (0.41) | -0.07 | 2,540 | 0.18 (0.38) | 0.18 (0.39) | -0.05 | 1,733 |
| Mixed-Race           | 0.02 (0.13) | 0.01 (0.09) | 1.20 | 2,540 | 0.22 (0.15) | 0.02 (0.13) | 0.23 | 1,733 |
| White                | 0.30 (0.46) | 0.53 (0.46) | -6.02*** | 2,540 | 0.33 (0.47) | 0.31 (0.46) | 0.38 | 1,733 |
| Sex (Male)           | 0.47 (0.50) | 0.50 (0.50) | -0.82 | 2,540 | 0.49 (0.50) | 0.50 (0.50) | -0.12 | 1,733 |
| Age                  | 15.49 (0.50) | 15.46 (0.50) | 0.62 | 2,540 | 15.48 (0.50) | 15.49 (0.50) | -0.15 | 1,733 |
| Household Income     | 26,864.08 (29,263.33) | 50,688.59 (43,821.49) | -6.36*** | 1,859 | 26,633.77 (29,370.93) | 28,301.98 (25,286.66) | -0.50 | 1,733 |
| Biological Mother’s Age at First Birth | 20.76 (4.72) | 22.88 (4.73) | -5.57*** | 2,348 | 20.77 (4.67) | 20.69 (4.05) | 0.15 | 1,733 |

Control Variables

|                              | Yes (n = 180) | No (n = 2,362) |                      | Yes (n = 134) | No (n = 1,601) |                      |
|                              | M (SD) | M (SD) | t | df | M (SD) | M (SD) | t | df |
| Type of Family Household     | 0.13 (0.34) | 0.54 (0.50) | -10.17*** | 2,269 | 0.14 (0.34) | 0.42 (0.49) | -5.41*** | 1,724 |
| Peer Delinquency Scaleb      | 2.87 (0.94) | 2.61 (0.90) | 3.67*** | 2,528 | 2.91 (0.95) | 2.71 (0.94) | 1.76 | 1,723 |
| Adolescents’ Delinquency Scalec | 2.10 (2.29) | 1.57 (1.99) | 3.43*** | 2,539 | 2.24 (2.30) | 1.56 (1.99) | 2.59** | 1,732 |

Note: * Scores on caregivers’ expectations and adolescents’ expectations ranged from 0% to 100% chance of arrest. b Scores on the peer delinquency scale reflect the mean percentage of adolescents’ peers who participated in delinquent behavior. c Scores on adolescents’ delinquency scale ranged from 0 to 10 delinquent activities. *p ≤ .05; **p ≤ .01; ***p ≤ .001.
Table 2

OLS Regression Models Examining the Effect of Adolescents’ Experience with Parental Incarceration on Caregivers’ Expectations, Adolescents’ Expectations, and Adolescents’ Future Arrest

|                     | Caregivers’ Expectations | Adolescents’ Expectations | Adolescents’ Future Arrest |
|---------------------|--------------------------|---------------------------|----------------------------|
|                     | Model 1                  | Model 2                  | Model 3                    | Model 4                    | Model 5                    |
| N                   | 1,649                    | 1,699                    | 1,643                      | 1,447                      | 1,390                      |
| $R^2$/Nagelkerke $R^2$ | 0.10                     | 0.08                     | 0.14                       | 0.13                       | 0.15                       |

| Independent Variable                  | B (SE) | B (SE) | B (SE) | Odds Ratio (SE) | Odd Ratio (SE) |
|---------------------------------------|--------|--------|--------|-----------------|----------------|
| Experienced Parental Incarceration    | 3.02   | 0.54   | 0.24   | 2.32            | 2.40            |
|                                       | (0.78)** | (0.75) | (0.75) | (0.57)**        | (0.61)**        |
| Mediators                             |        |        |        |                 |                |
| Caregivers’ Expectations*             | --     | --     | 0.24   | --              | 1.01            |
|                                       |        |        | (0.02)** |                | (0.01)         |
| Adolescents’ Expectations*            | --     | --     | --     | --              | 1.01            |
|                                       |        |        |        |                 | (0.01)         |
| Control Variables                     |        |        |        |                 |                |
| Type of Family Household              | -1.89  | -1.60  | -1.14  | 1.03            | 1.04            |
|                                       | (0.88)* | (0.85) | (0.84) | (0.28)          | (0.29)          |
| Peer Delinquency Scale                 | 2.18   | 0.33   | -0.29  | 1.34            | 1.32            |
|                                       | (0.41)** | (0.40) | (0.40) | (0.19)*         | (0.19)         |
| Adolescents’ Delinquency Scale*       | 1.39   | 1.84   | 1.59   | 1.34            | 1.31            |
|                                       | (0.18)** | (0.17)** | (0.18)** | (0.10)**       | (0.11)**        |

*Note: a Scores on caregivers’ expectations and adolescents’ expectations ranged from 0% to 100% chance of arrest. b Scores on the peer delinquency scale reflect the mean percentage of adolescents’ peers who participated in delinquent behavior. c Scores on adolescents’ delinquency scale ranged from 0 to 10 delinquent activities.

*p ≤ .05; ** p ≤ .01; *** p ≤ .001.
Figure 1. The Effect of Parental Incarceration on Adolescents’ Future Arrest is Mediated by Caregivers’ and Adolescents’ Expectations

Note: Analyses included type of family household, peer delinquency, and adolescents’ delinquency as control variables. Only adolescents’ delinquency was significantly related to caregivers’ expectations, $B = .96, p = .001$, adolescents’ expectations, $B = 1.61, p < .001$, and adolescents’ arrest, $B = .38, p = .001$. All other covariates were not significantly related to these outcomes, all $B$s ≤ .93, p ≥ .06.