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Just how far does the apple fall? the effects of parental incarceration on offspring's criminal justice outcomes

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**JUST HOW FAR *DOES* THE APPLE FALL? THE EFFECTS OF PARENTAL
INCARCERATION ON OFFSPRING'S CRIMINAL JUSTICE OUTCOMES**

A thesis presented by

Molly Buchanan

to

The School of Criminology and Criminal justice

In partial fulfillment of the requirements for the degree of Master of Science

in the field of
Criminology and Criminal Justice

Northeastern University
Boston, Massachusetts
April, 2012

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ABSTRACT OF THESIS

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ABSTRACT

Using data from the National Longitudinal Study of Adolescent Health (Add Health), this study explored arrest outcomes for children whom have known what it is to have a parent behind bars. To better isolate the effects of parental incarceration experiences, offspring and family characteristics potentially associated with increased odds of arrest were controlled and a series of logistic regressions were performed. It was hypothesized that parental incarceration would increase the odds of offspring's arrest and that maternal incarceration experiences would have more of an impact than paternal. A statistically significant model predicting offspring's odds of arrest was achieved with a final sample of 4042 respondents, revealing significant effects of parental incarceration experiences on these odds. Analyses also revealed maternal incarceration experiences were more influential on offspring's odds of arrest than paternal incarceration experiences. Our findings align with prior research and better inform the risk factors associated with offspring's adverse outcomes.

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CHAPTER ONE: INTRODUCTION

In recent years, prison populations have been increasing worldwide, yet the United States continues to have the highest rate of incarceration and largest prison population when compared to every other nation (Walmsley, 2009). However, in 2010, for the first time in nearly four decades, the overall rate of imprisonment in the United States did not increase and, instead, decreased by 0.3 percent (Guerino, Harrison, & Sabol, 2011). Despite this slight, albeit welcomed decrease in state rates of imprisonment, federal prisons populations continued to grow, and our nation's correctional facilities still housed over 1.6 million prisoners by yearend 2010 (Guerino et al., 2011).

When over half of incarcerated adults are also parents, a side effect of our nation's imprisonment binge is undeniable consequences for our youngest citizens. As a result of continued increases in imprisonment rates over the past forty years, the number of children living with at least one parent behind bars also subsequently rose. In fact, the number of children affected by parental incarceration increased almost 80 percent between 1991 and 2007, resulting in an estimated 1.7 million children having to carry on with their lives while their parent sits behind bars (Glaze & Maruschak, 2008). More recent tabulations posit even higher estimates of 2.3 million children currently dealing with having a parent incarcerated and over 10 million minor children who have experienced the incarceration of a parent at some point in the lifetime (Center for Children of Incarcerated Parents, 2011).

As a result of our nation's experiment with mass incarceration, both fathers and mothers have been removed from their homes and placed behind bars, most for non-violent offenses (i.e. drug, DWI, weapons charge) (Glaze & Maruschak, 2008). Consequentially, the number of

children who experienced the loss of their father to the criminal justice system rose 77 percent, while children who lost their mother more than doubled (131 percent rise) (Glaze & Maruschak, 2008). The current study explores this phenomenon by addressing the experiences of children whom have known what it is to have at least one parent behind bars while specifically focusing on how the gender of the incarcerated parent (i.e. father or mother) and the gender of the child (i.e. son or daughter) may differentially affect offspring's likelihood of arrest.

The remainder of this introduction provides a brief synopsis of the historical jurisprudence and politics that have been posited as driving our nation's prison population to its unprecedented level. This section is intended to provide context for the subsequent discussion of effects of parental incarceration by highlighting the impact legislation and politics have had on the number of men and women behind bars, as well as the number of children left behind while their parents serve time. Chapter 2 categorizes and discusses the major theoretical frameworks utilized in prior parental incarceration research and includes some examples of findings achieved using those specific theoretical constructs. Chapter 2 also includes a review of findings from previous empirical research on the effects of parental incarceration, summarizing key studies. Although these studies offer exemplary findings in this area, there is a lack of consensus surrounding these effects. This chapter concludes with this study's research agenda, which focuses on a small piece of the puzzle regarding the impact of parental imprisonment on offspring's arrest outcomes. To inform my hypotheses, I integrate theoretical notions established in the parental incarceration literature and presented earlier in the chapter, focusing on those pertinent to my overall research agenda. Chapter 3 outlines the methodology and includes a detailed description of the National Longitudinal Study of Adolescent Health (Add Health) public-use data used to perform the analyses. I conclude with a discussion of results, associated

implications, and suggestions for future research in Chapters 5.

Historical Context of America's Increase Rate of Incarceration

Up until about 40 years ago, America's rate of imprisonment was relatively stable, fluctuating only in response to significant social changes (Simon, 2012; Blumstein & Cohen, 1973). However, the rate of imprisonment began to rise in the early 1970s and has continuously risen for the past four decades. Scholars highlight a systematic swing in the criminal justice system pendulum, moving from a rehabilitative emphasis to a more retributive and punishment-focused system with prison as the primary method of social control. This swing was partially the result of increased crime rates and subsequent fear of crime during the 1970s (Simon, 2012; Garland, 2001). Scholars also point to policies enacted during the 1980s as supplying the adrenaline behind the continued growth of our nation's prison population (Siegel, 2011; Radosh, 2008; Garland, 2001; Ditton & Wilson, 1999; Reinerman & Levine, 1997; Nagel & Johnson, 1994). Whatever the explanation for the increase in rates of imprisonment over the past 40 years, this growth of the prison population has continued unabated despite decreasing rates of crime nationwide (Simon, 2012).

Zimring (2000, 2005) has outlined three distinct divisions of the era of mass incarceration, beginning in the late 1970s. This initial phase, which he suggests lasted through the mid-1980s, was the result of an overabundance of prosecutorial discretion at the sentencing phase, resulting in more defendants being sent to prison instead of probation. As mentioned above, some scholars have argued that stricter sanctions became preferable during this phase due to increased crime rates and heightened fears. Other scholars have highlighted Robert Martinson's (1974) 'nothing works' conclusion (after he reviewed outcomes for hundreds of rehabilitation programs) as an impetus for citizens' and policy-makers' impatience with

rehabilitative methods and the resulting increased punitiveness of the era (Simon, 2012)

The next phase within the era of mass incarceration (late 1980s through 1990), as described by Zimring (2000, 2005), was especially unsympathetic to drug offenders- serious and low-level offenders alike (Simon, 2012). During this time, mandatory minimum sentences or increased penalties for certain drug offenses (i.e. crack versus powder cocaine) became the norm (Simon, 2012). Both state and federal laws, such as the Anti-Drug Abuse Acts of 1986 and 1988, were passed in response to fear of high rates of drug use (Simon, 2012). Literature describing the conservative political climate of this era typically note the Regan administration's declaration of the war on drugs and growing popularity of 'get-tough' policies as having provided the building blocks for mass incarceration in America (Siegel, 2011; Radosh, 2008; Reinerman & Levine, 1997; Nagel & Johnson, 1994).

Zimring (2000, 2005) suggests the third and final phase further propelling the imprisonment boom came during the late 1990s with Congressional and state legislative decisions as the catalyst behind continued growth of prison populations. For example, in 1994, a push for tougher sentencing policies came to fruition with the enactment of the federal Crime Control Act (Dozier & Owen, 2004). Policies outlined in this Act, such as truth-in sentencing and three-strikes laws, were partly in response to citizens' aversion towards using parole and early release of offenders to assuage prison overcrowding (Dozier & Owen, 2004). Such indeterminate sentencing policies were viewed as being too soft on crime, and the push was made for policies requiring a specific length of sentences be served, usually 85%, before offenders were eligible for parole (Dozier & Owen, 2004; Ditton & Wilson, 1999). The Crime Control Act also included three-strikes-based provisions requiring life sentences for offenders found guilty of three felonies- completely abandoning any rehabilitative approach for a 'just

deserts' model (Mauer & King, 2007; Dozier & Owen, 2004). There was much congressional support for these policies with the majority of both Republican and Democratic parties voting in their favor (Reinarman & Levine, 1997; Nagel & Johnson, 1994).

The overall policy changes that took place during all three phases described by Zimring (2000, 2005) include reduced discretion among judges at the sentencing stage, harsher penalties and/or mandatory prison sentences for certain offenses, longer prison stays, and heightened restrictions of parole (Siegel, 2011). These reforms were enacted to supplement toughening penalties for certain crimes, specifically drug offenses, and were also established to reduce unwarranted disparities and racial, gender, and class discrimination at the sentencing level (Ditton & Wilson, 1999; Nagel & Johnson, 1994). During this era, Congress also voted for significant increases in funding for police and prisons with plans to use the funding for doubling prison capacity (Reinarman & Levine, 1997). The investment in prison construction turned out to be heedful, as arrests for drug offenses surged during this era and the drug offender prison population grew by 1100% (Mauer & King, 2007). However, these policies did not impact all offenders alike.

Impact on women. Women, in particular, have been affected by the far-reaching policies instituted during this era with the number of women behind bars rising over 800% in the past three decades (West & Sabol, 2009). Of the research that has explored this phenomenon, many findings have pointed to drug-related offenses, harsher sentencing for drug-related behavior, and increasingly punitive responses to drug-related activities as attributing to the steep increase of incarcerated females (Franklin, 2008; Frost, Greene, & Pranis, 2006; Joseph, 2001). For example, women who might have previously received more modest sentences, or even probation, were often punished more severely because of the pervasive effects of mandatory

minimum sentencing and reduced judicial discretion (Szalavitz, 1999; Nagel & Johnson, 1994). However, a few important side notes must be mentioned to place these propositions in perspective.

First, although female incarceration rates have been the most rapidly increasing sector of the prison population, it is important to note that the staggering percentage of growth is partly due to the low base rate of females behind bars at the start of our nation's imprisonment boom (Frost et al., 2006). In fact, despite their eight-fold increase, women behind bars still only make up approximately 7 percent of the overall prison population (Frost et al., 2006). Also, drug violations were not the sole contributor to the rise in female incarceration rates; arrests for violent offenses have also risen over time (Federal Bureau of Investigation, 2010). However, incarcerated females are still twice as likely (25.7 percent) to be serving time for drug-related offenses when compared to male prisoners (Guerino et al., 2011). Finally, research continues to find that women in general are still treated less severely at all stages of involvement with the criminal justice system despite attempts to reduce judicial discretion based on gender characteristics (Farrell, Ward, & Rousseau, 2010). Some scholars posit that the disproportionate leniency towards female suspects may partly be due to assumptions or knowledge of family responsibilities beyond that of most male defendants. Also, judges may be attempting to circumvent further harm to families and dependent children (Farrell, 2001; Daly, 1989). However, with that said, the 'get-tough' policies described above still significantly impacted the percentage of women placed behind bars over the past few decades while increasing the overall prison population. With more people- male or female- behind bars, the number of children impacted by the incarceration of a parent has also inevitably increased.

Maternal versus Paternal Incarceration Impact on Familial Structure

As the policies described above resulted in the incarceration of more drug offenders, it should be noted that the offenders who are most likely to have children on the outside are those locked up for drug offenses (Glaze & Maruschak, 2008). For the majority (92 percent) of children with an incarcerated parent, it is their fathers behind bars rather than mothers (Glaze & Maruschak, 2008; Mumola, 2000). Given our focus on how maternal versus paternal incarceration may differentially impact offspring, other important considerations are the custodial arrangements, parental involvement, and consequences for familial structure prior to and after mothers' versus fathers' imprisonment.

Numbers provided by the Bureau of Justice Statistics (2000) revealed that, overall, less than half of all imprisoned parents lived with their children directly prior to being incarcerated (Mumola, 2000). However, all subsequent findings since 2000 show the higher likelihood of mothers behind bars to have been the primary custodial parent and caregiver for their children prior to incarceration when compared to fathers behind bars (Glaze & Maruschak, 2008). In fact, imprisoned mothers are three times more likely to report having been responsible for the daily lives and caretaking of their children prior to being incarcerated (Glaze & Maruschak, 2008).

Moreover, because of custodial and caretaking arrangements prior to incarceration, when fathers are incarcerated, children are less likely to experience as much familial disruption and remain in the care of their mothers, whereas, when mothers are incarcerated, children are more likely to be placed with extended family (i.e. grandparents), separated from siblings, and are five times more likely to be placed foster care (Glaze & Maruschak, 2008; Johnston, 2006; Mumola, 2000; Covington, 1995). Davies, Brazzell, La Vigne, and Shollenberger (2008) report similar

findings from their focus group interviews with mentors of children with incarcerated parents. They noted that disruption to familial structure and living situations are worse for children who experience maternal incarceration than for those who experience paternal incarceration. It is this juxtaposition that is the premise for this research. I consider the potential differences the loss of a father versus the loss of a mother via incarceration may have on offspring's own lifetime arrest outcomes.

The following chapter outlines the various theoretical frameworks most commonly found in the parental incarceration literature and provides examples from research findings utilizing these constructs. As this study integrates pertinent notions from many of these frameworks and not just one sole theory, I will underscore the notions that are guiding my hypotheses. Following this discussion of theoretical frameworks, a review of the literature will lead into the current methodology, results, and finally a discussion of and implications of the findings.

CHAPTER TWO: PARENTAL INCARCERATION: THEORETICAL PERSPECTIVES AND EMPIRICAL RESEARCH

Theoretical Perspectives

While leading scholars utilize a range of theoretical approaches to explain their findings on the effects of parental incarceration (see Murray et al., 2012b; Parke & Clarke-Stewart, 2003; Hagan & Dinovitzer, 1999), it is unlikely that any one theory or finding will provide a thorough enough understanding of such a complex issue (Eddy & Reid, 2003). Parke and Clarke-Stewart (2003) emphasize the importance of taking a multi-theoretical approach and posit that using such an approach in parental incarceration research will perpetuate better research and elicit more effective responses from policy-makers.

The following sections summarize the most prominent perspectives guiding parental incarceration research. Each theoretical perspective is presented with a very brief overview of the theory's roots and how each perspective relates to the current research agenda by informing the hypotheses. Where appropriate, findings achieved using certain theoretical constructs are also presented.

Social Learning and Socialization Processes. Popular theoretical constructs guiding research on effects of parental incarceration have been socialization processes and mechanisms of social learning, such as imitation. The theoretical notions associated with the socialization approach date back to the late 1940s and Donald Sutherland's nine propositions of differential association theory. Sutherland posited that criminal behavior was learned through interactions with others and those closer to us (i.e. intimate groups); those whom we saw more often, for longer periods, and whom were early influences (i.e. parents, siblings) were said to be more influential to our learning process (Sutherland, 1947). Through these interactions, or

associations with others, we learn definitions either favorable or unfavorable towards the commission of crime (Sutherland, 1947 as cited in Akers & Sellers, 2009; Cullen & Agnew, 2006). In addition to initiating our definitions favorable or unfavorable to the commission of crime, interactions with intimate groups also facilitate learning techniques (i.e. how to break into a car) and motives for committing crimes (i.e. excuses).

Since its inception, refinements have been made to Sutherland's theory, but theorists have remained true to his nine initial propositions while attempting to clarify the intricacies of the learning process (Akers & Sellers, 2009). In their attempt at this challenge, Burgess and Akers (1966) successfully applied concepts prominent in behavioral psychology (i.e. operant conditioning, reinforcement, imitation) to specify the learning process that takes place when we interact with others (Akers & Sellers, 2009). Akers developed these ideas even further, eventually outlining what is now known as social learning theory.

In addition to differential associations with others, social learning theory posits that these past interactions and experiences result in future expectations of punishments or rewards which, in turn, affect decisions of whether to commit crime. More specifically, the differential reinforcement we experience will impact our future decision-making process, as we have learned one way or the other. Social learning theory also proposes that observing the punishment or reinforcement of others' behaviors can impact our decisions as well, as we may imitate their behavior to achieve similar outcomes or avoid replicating their missteps (Akers & Sellers, 2009; Cullen & Agnew, 2006). As far as potential effects of parental incarceration on offspring, both positive and negative outcomes have been hypothesized in terms of these socialization or social learning concepts (see Hagan & Dinovitzer, 1999; McLanahan & Bumpass, 1988; Sack, 1977).

On the one hand, antisocial parents may teach children definitions and techniques

favorable to committing crime, and, therefore, parents' subsequent incarceration may have *beneficial* outcomes for the child (Sutherland, Cressey, & Luckenbill, 1992 as cited in van de Rakt et al., 2011). On the other hand, parents' incarceration may reveal antisocial behaviors of which their children were previously unaware, and this new awareness could prompt imitation or modeling of parents' behavior (van de Rakt, et al., 2011; Sack, 1977). Also, social learning perspectives highlight that due to potentially weakened parental involvement and supervision and subsequent increase of reliance on peers in the socialization process, opportunities for delinquency ripen (McLanahan & Bumpass, 1988).

Attachments, Trauma, and Social Bonds. The theoretical concept of attachment, or parental bond, is prominent in criminological literature (see van de Rakt et al., 2011; Dallaire, 2007; Murray et al., 2005; Parke & Clarke-Stewart, 2003). Specifically pertaining to parental imprisonment research, attachment-based theoretical arguments are often subcategorized as trauma perspectives (see van de Rakt et al., 2011; Murray & Murray, 2010; Murray & Farrington, 2008). The trauma theory most often cited in parental incarceration literature is Bowlby's (1973) attachment theory.

Bowlby (1973) posited that the disruption of parent-child attachment, in our case, via parental incarceration, can result in adverse emotional reactions among offspring. These adverse emotional responses likely hinder continuous healthy psychosocial development (Sroufe, 1988, as cited in Parke & Clark Stewart, 2003). Research that has considered parental incarceration from this perspective posits that trauma is experienced as a result of parent-child separation or disruption of the parent-child bond. In addition, parental incarceration not only includes disrupted attachment, loss, or separation from a parent, but trauma can also result from disrupted living arrangements or changes in caretakers (Murray & Murray, 2010).

Hirschi's (1969) social bond theory has also been noted in regard to the impact of disrupted parent-child attachments on offspring's outcomes (see van de Rakt et al., 2011). As Hirschi (1969) suggested with social bond theory, people with less to lose are more likely to commit crime. He clarified that the most important aspect of the social bond is the emotional attachment between persons or to community. If one is attached to his or her parents, he or she will be more likely to refrain from committing crime, so as to not damage the relationship. Ergo, if the parent-child attachments are broken due to separation caused by parental incarceration, offspring will be less likely to refrain from committing criminal acts.

Specifically in regard to differences between maternal and paternal incarceration experiences, both social bond and attachment theory suggest the disruption of mother-child relationships would intensify children's inability to establish or maintain secure attachments with alternative caregivers beyond that of father-child separations (Dallaire, 2007). Also, as stated earlier, because incarcerated mothers are more likely than incarcerated fathers to have been caretaking for their child prior to imprisonment, the loss of a mother is even more disruptive to children's lives (Glaze & Marushack, 2008; Eddy & Reid, 2003; Mumola, 2000; Hagan & Dinovitzer, 1999).

Strain. The notion of strain, or emotional stressors related to the separation from parent due to parental imprisonment, is at the root of attachment theory. However, the types of strain most often discussed in parental incarceration literature are economic and social strains. Agnew's general strain theory encompasses all of these potential sources of strain and posits that crime may be used as a way to alleviate stress associated with the introduction of various types of strain (Agnew, 1992).

By applying a more individualized, social psychological approach to earlier, aggregate

level strain theories, Agnew (1992, 2001) was able to broaden the applicability of the theory. By adding sources of strain to the classic ‘failure to achieve monetary or success goals,’ Agnew outlined how removal of positively valued stimuli or inability to avoid negative stimuli could also cause strain (Akers & Sellers, 2009; Cullen & Agnew, 2006). General strain theory ties well into parental incarceration research with much research typically considering the strain associated with the families’ loss of social capital- not solely financial – but also relational and emotional (see Hagan & Dinovitzer, 1999; McLanahan & Sandefur, 1994).

In many cases, the loss of financial contributions from the subsequently incarcerated parent creates economic hardships for families and children on the outside (Siegel, 2011; Hagan & Dinovitzer, 1999). Further explicating the concept of lost social and human capital after the removal of a parent, McLanahan and Sandefur (1994) note that, assuming the incarcerated parent was providing some form of social capital, whether financial or emotional, current caretakers will now have less support, time, and money to invest in the upbringing of offspring. Moreover, with less quality supervision due to parental absence and increased risk for poverty due to loss of income, children are at increased risk for criminal involvement (Arditti, Lambert-Shute, & Joest, 2003).

Siegel (2011), in her qualitative study of children of system-involved parents, adds to parental incarceration literature using strain, noting the emotional toll incarceration can have on a family unit. She writes,

“there are strong theoretical reasons for concern: families coping can experience strain, affecting the quality of the entire family environment and nature of parent child relationship, all of which can adversely affect children.” (Siegel 2011:15)

Siegel (2011) underscores the typical income disparities between male and female

prisoners, noting that, before imprisonment, a woman's economic standing is most likely worse than a man's and is most often below poverty level. Taken together, Siegel's (2011) findings and the strain perspective suggest a directional hypothesis pertaining to outcomes for maternal versus paternal incarceration, in that, maternal incarceration may cause more strain and therefore increase the likelihood of offspring's arrest.

Stigma and Labeling. Additional research on the effects of parental incarceration focuses on the stigma and subsequent behaviors associated with having a parent behind bars. Labeling perspectives suggest that instead of achieving the desired deterrent effects, labeling as a method of social control may unintentionally produce subsequent deviant behavior through labelees' commitment to deviant self-identities (see Paternoster and Iovanni, 1989). To further clarify the actual process of how self-concepts develop in the midst of deviant labeling, it is important to bear in mind the stigma and negative images, or stereotypes, mainstream society attaches to deviant labels- such as "prisoner" or "convict" or, in the case of offspring, "child of a criminal" (Bernburg, 2009; Link & Phelan, 2001).

Paternoster & Iovanni (1989) explain that when the deviant label follows individuals into everyday social settings, developing self-concepts are liable to be negatively influenced by the repeated stigmatization and additional labeling from others. More simply put, societal stereotypes about criminals, imprisonment, or other norm violations influence and inform society's reactions and attitudes toward labeled individuals. These stereotypes are likely to impact the quality of interactions between labeled individuals and different members or institutions within society and subsequently reinforce deviant self-concepts for those labeled (Bernburg, 2009).

Studies have found that having a parent or family member behind bars can result in the

labeling and stigmatization of offspring and families of those incarcerated parents (Hagan & Palloni, 1990). Using a labeling perspective to guide their hypotheses, researchers have explored how offspring's subsequent behavior may be impacted by the stigma associated with parental incarceration (see Siegel, 2011; Giordano, 2010; Nesmith & Ruhland, 2008; and Murray et al., 2005). Studies have focused on parents' criminal label attachment to offspring, potentially affecting their self-perception and how they are treated or viewed by others (van de Rakt et al., 2011; Murray et al., 2005; Hagan & Dinovitzer, 1999). Foster and Hagan (2007:403) report, "actual and anticipated rejections [by others] can have lasting harmful consequences" for offspring stigmatized by their parents' incarceration.

Research by Hagan and Palloni (1990) provides support for this notion that labeling individuals who are already stigmatized can result in a greater criminogenic effect. They found that sons who were labeled as having a criminal parent (fathers had criminal convictions) who themselves eventually became involved in the criminal justice system (i.e. arrested) experienced a greater labeling effect (i.e. had higher rates of subsequent delinquency) than those who did not have preexisting labels as children of criminal parents.

With regard to the current study, it is useful to note Siegel's (2011) findings that maternal incarceration was more stigmatizing than having a father in prison. She writes that maternal incarceration betrays stereotypical gender expectations and "runs counter to the idealized image of what a mother should be" (Siegel, 2011:159). These findings, guided by the labeling perspective, inform the direction of our hypotheses, noting that outcomes for offspring who experience maternal incarceration will be worse than for those who experience paternal incarceration.

Life-course or Developmental Perspectives. A life-course or developmental perspective is another theoretical avenue taken in the parental incarceration literature (see Siegel, 2011; Eddy & Reid, 2003). Life-course perspectives place offspring's parental incarceration experience in context with their additional life experiences, while underscoring the unavoidable influence of parent-child networks (Siegel, 2011; Elder, 1998 as cited in Parke & Clarke Stewart, 2003). The life-course perspective highlights turning points in individual's lives, which, in regard to this study, could include losing a parent to incarceration as either a positive or negative experience. Considering offspring's experiences with parental incarceration holistically, scholars using this theoretical framework acknowledge offspring's experiences separate from parental incarceration. More to the point, the life-course perspective takes into account offspring's experiences before their parent was incarcerated; their experiences while their parent is incarcerated, as well as their experiences after their parents are released. Using this holistic approach, the effects of parental incarceration can be better isolated as potentially influencing offspring's life-course trajectories (Graue & Walsh, 1998). As Hagan and Dinovitzer (1999:127) suggest in regard to this perspective, "the imprisonment of a parent represents one kind of event that can combine with other adverse life experiences in influencing longer-term life outcomes".

Risk and Resiliency. Risk and resiliency perspectives, sometimes referred to as selection factors, are found increasingly in the parental incarceration literature, and, like developmental theories, they take a more holistic view of the potential effects parental incarceration experiences may have on offspring. The theoretical notions put forth by these perspectives take into consideration the additive risks, or multiplicative pathways, that can influence future outcomes for offspring who experience parental incarceration (Hagan & Dinovitzer, 1999). Foster and Hagan (2007) explain that earlier processes that must occur for

families who experience maternal or paternal incarceration makes those families inevitably different from other families from the start. Said differently, by analyzing offspring's future outcomes from the vantage point that there are additional risk factors, such as their genetic predispositions or exposure to violence, neglect, or poor parenting techniques that predate their parents' imprisonment, risk and resiliency perspectives assume families experiencing parental incarceration are *already* unique from parents and children who do not experience incarceration (Murray et al., 2012b; Hagan & Dinovitzer, 1999).

However, these theories also highlight that having an increased number of risk factors does not guarantee negative future outcomes (i.e. adulthood criminal justice involvement). A key to this perspective is the resiliency aspect where various protective factors may engender positive adaptations to adverse life events like having a parent incarcerated (Dallaire, 2007; Eddy & Reid, 2003; Parke & Clarke-Stewart, 2003). Studies have found that some children have successfully avoided the pathways to negative life outcomes associated with increased risk and, instead, have positively adapted to their experiences (Giordano, 2010; Parke & Clarke-Stewart, 2003).

In her interviews with offspring of high-risk parents, many of whom had been incarcerated, Giordano (2010:168) explains,

“Children possess the uniquely human capacity to reflect on their parents’ and their own experiences, [and] some youths, based on the totality of their experiences, and their own social psychological reactions to them, move forcefully to develop an identity in sharp contrast to the one the parents have modeled.”

Along these same lines, because of the complexity of factors often predating *and* following parental incarceration, along with the additionally unique experience of parents’

criminality, scholars caution attributing any future outcomes solely to effects of parental incarceration (Murray et al., 2012b; Parke & Clarke-Stewart, 2003). Proponents of research on the impact of parental incarceration on children have expressed a need for broader approaches to understanding the intricacies of such a complex issue. As Giordano (2010:147) explains, by solely focusing on the time periods while a parent is imprisoned, a “comprehensive portrait of children’s experiences and exposure” to related risk factors is hindered. Relating findings from her mixed-method study of offspring of highly delinquent survey participants, Giordano (2010) concludes that, for children who have experienced parental incarceration, there are many more life stressors beyond the time period in which their parents were imprisoned. In fact, many children expressed that handling their parents’ incarceration was easier than dealing with other life situations (Giordano, 2010).

Regardless of the complexities involved, by using risk and resiliency perspectives to guide their research, scholars and practitioners can better show how parental imprisonment experiences may be one adverse event amongst many risk factors and better identify the unique effects of parental incarceration (Murray et al., 2012b). In terms of the current study, proponents of the risk and resiliency theories have suggested an important step towards achieving this goal includes knowing whether maternal incarceration or paternal incarceration present greater risk factors for offspring (Dallaire, 2007; Hagan & Dinovitzer, 1999).

Current Theoretical Framework. As evidenced by the summaries above, social scientists have considered several processes to better understand the effects of parental incarceration on children. These processes include individual- and family-level factors, as well as psychological, emotional, economic, and social factors. (Murray et al., 2012b; Murray & Farrington, 2008). Potential explanations emphasized in criminological literature include

insufficient or decreased parental supervision, as well as diminished access to economic resources. For example, Murray, Farrington, Sekol, and Olsen (2009) point out that the level of care and supervision of a child before, during, and after parental imprisonment is vital to the future outcomes for that child. However, the removal of a parent can have long-term familial effects, which often impact the level of supervision provided for children (Phillips, Erkanli, Keeler, Costello, & Angold, 2006).

In order to better inform the parental incarceration literature about differential effects of paternal and maternal incarceration, this study is proposed. This author agrees that in order to formulate the most effective policies and interventions, policy-makers need to know which combination of parental incarceration factors (i.e. mother or father incarcerated) present the most risk for offspring's future involvement with the criminal justice system. Theoretical notions addressed in the perspectives and research findings outlined in this section guide my hypotheses.

The following section provides a review of past research on the effects of parental incarceration. This summary is intended to underscore the complexities of, not only parental incarceration experiences, but also of parental incarceration research. While the analyses of this current study are limited to a small piece of the pie, the following literature review is intended to provide an understanding of the bigger picture.

Empirical Research

The idea that children of criminals might themselves become criminal has been a long-standing consideration within the field criminology and is one that continues to present new challenges for researchers (see Murray, Loeber, & Pardini, 2012b). With more parents behind bars than ever before, interests in familial links to criminality perpetuate this line of research, with literature on this topic growing substantially in recent years (Murray & Farrington, 2008).

Researchers have taken notice of the complexities of the issue at hand, and scholars worldwide have studied the effects of parental incarceration, using both qualitative and quantitative methods and various international samples of offspring of incarcerated parents (Murray et al., 2012b). In order to accurately hypothesize the effects parental imprisonment has on offspring, we must also recognize that this upward trend in incarceration has not impacted all children equally. Across the U.S., high rates of imprisonment have been concentrated in a small number of communities, with typically the poorest, urban areas among those most affected (Clear, 2007; Travis & Waul, 2003). Accordingly, these inequalities have disproportionately impacted ethnic minorities, as well.

As mentioned earlier, is important to consider these additional risk factors for adulthood criminal justice outcomes, as parental imprisonment experiences may represent one event in a series of adverse experiences throughout children's lives (Murray, Farrington, & Sekol, 2012a; Johnston, 2006; Phillips et al., 2006; Hagan & Dinovitzer, 1999). Many studies have explored the potential detrimental effects of parents' incarceration on offspring's future outcomes through various pathways; however, findings have not been consistent, with results differing based on the sample or research methods utilized in analyses. As results have been inconclusive about the association between parental incarceration and children's adverse outcomes, some suggest that the risks for children appear fairly strong while others claim that there is no specific risk to children imparted by parental incarceration. Oftentimes, offspring's adverse outcomes can be explained by predated risk factors associated with children's social disadvantage and other life stressors (Murray et al., 2012b; Arditti & Few, 2006). Hence, the entirety of parental incarceration effects remains unclear (Murray et al., 2012a; Murray et al., 2012b; Siegel, 2011; Wildeman, 2009; and Murray & Farrington, 2008).

This review of empirical research presents the literature by categorizing the research findings. The first section includes studies that have found strong effects linking parental incarceration experiences to children's poor future outcome. An additional summary provides literature that has explored the compounding, and sometimes confounding, risk factors most often associated with children who have experienced parental incarceration, and finally, this chapter ends with a summary of studies that have found, after controlling for alternative risk factors, no specific effect of parental incarceration experiences.

Parental Incarceration Effects on Offspring. Murray and Farrington (2005) completed a large-scale analysis using longitudinal data to examine the effects of parental incarceration on son's antisocial outcomes later in life. Utilizing data from 411 English boys in the Cambridge Study of Delinquent Development, Murray and Farrington (2005) compared several groups of boys between the ages of 0 and 10: 1) boys separated from parents due to incarceration 2) boys separated from their parents for reasons not related to criminal justice involvement (i.e. divorce, marital separation, illness, or death), and 3) boys from two-parent homes. Although their sample of boys who experienced parental incarceration was limited to 40 observations (17 before birth, 23 between 0-10 years of age), Murray and Farrington (2005) found a significant impact from parental imprisonment experiences even after controlling for parental criminality, parent-child separation factors, and associated childhood risk factors.

By examining the samples' lifetime outcomes by the age of 48, Murray and Farrington (2005) concluded that children who lost a parent due to incarceration were more at-risk for worse future outcomes than any of the control groups – even those who had been separated from parents by death and those whose parents were incarcerated before they were born. More specifically, Murray and Farrington (2005) linked parental incarceration experiences to poor

mental health outcomes and antisocial behavior that could not be explained by parental criminality or separation. However, their study has some weaknesses due to the small sample size of boys who experienced parental incarceration and the fact that the data was collected between 1953 and 1964 – a fact that calls the data’s applicability to current parental incarceration experiences into question. In spite of these weaknesses, Murray and Farrington’s (2005) findings align with much of the additional research coming out of qualitative studies and further quantitative analyses pertaining to parental incarceration effects.

Two years after Murray and Farrington’s (2005) publication, Huebner and Gustafson (2007) reported similar findings using U.S. data from the National Longitudinal Survey of Youth (NLSY). Limiting their sample to children born to young mothers (ages 14 to 22) in 1978, Huebner and Gustafson (2007) examined future adult offending for children whose mothers were incarcerated at any point before their child’s 24th birthday (n= 31) compared to children whose mothers were not incarcerated (n= 1,666). Of all the mothers originally sampled in 1978, twenty-six were incarcerated at some point during their child’s life (before 24 years old).

Controlling for a variety of risk factors (i.e. family processes, peer influence, economic and educational resources) and demographic variables (i.e. race, mother’s age when she gave birth, socioeconomic status), Huebner and Gustafson (2007) examined adult children’s probation and conviction statuses and found a significant association between having a mother incarcerated and increased odds of adulthood criminal justice outcomes. While only 10 percent of the control sample had records of criminal conviction, 26 percent of the 31 children whose mothers had been incarcerated had their own adulthood conviction records. This group of children also reported increased levels of delinquent peer pressure during adolescence and were four times more likely to have served probation during their adulthood.

In the same year, Dallaire (2007) completed a comparative analysis of outcomes for offspring who experienced the incarceration of their mother or father. Analyzing data collected for the 1997 Survey of Inmates in State and Federal Correctional Facilities, Dallaire (2007) compared maternal versus paternal prisoners' reports pertaining to their adult children's incarceration status and minor children's living situations. Dallaire (2007) found that family size (higher number of children in the home) and intrafamilial incarceration (i.e. incarceration of a spouse or other immediate family members) were significant predictors of offspring of imprisoned parents becoming incarcerated themselves. Interestingly, Dallaire (2007) also found that mothers who were incarcerated were 2.5 times more likely than incarcerated fathers to report their adult-children had spent time behind bars. Mothers were also significantly more likely than fathers to score higher on an overall measure of risk factors associated with having incarcerated offspring.

Considering the link found between parental incarceration and adverse life outcomes, it is understandable why researchers and professionals alike have designated these children as vulnerable and in need of extra support (Murray et al., 2009). Attempting to address these concerns, researchers have better informed our understanding of the potential psychological effects of losing a parent to incarceration, as well as the potential moderating effects neighborhood contexts can have on children's parental incarceration experiences. Some of the potential factors, as found in additional literature, are presented in the following section.

Compounding and Confounding Risk Factors. Because the experience of parental incarceration is not evenly distributed throughout society, researchers must consider many covariates associated with individuals' future outcomes (Murray et al., 2012a). Children most often impacted by parental incarceration not only suffer the collateral consequences of punitive,

ill-planned criminal justice policies such as those discussed in Chapter 1, but also must often endure a myriad of other disproportionate, negative outcomes associated with growing up in impoverished, urban, and predominantly minority communities. Braman and Wood (2003) explain that populations hardest hit by mass incarceration are among the most fragile in our society. Many of these families are already on the brink of emotional or financial ruin before being hard-pressed by an often-unsympathetic correctional system (Travis & Waul, 2003). Similarly, children living in these communities face daily hardships like ongoing poverty and instability, diminished access to resources, and family substance abuse and/or mental illness – all risk factors for negative future outcomes further exacerbated by the experience of imprisonment of a parent (Braman & Wood, 2003; Rose & Clear, 2003; Travis & Waul, 2003).

Along the same lines, Murray et al. (2009) report that children with parental incarceration experiences were more likely to have disadvantaged backgrounds than comparison group children involved in court or clinical settings. Scholars have posited that, for children in disadvantaged neighborhoods whose parent has been incarcerated, it can be difficult to develop the relationships needed to circumvent the intergenerational cycle of imprisonment, as the family and community supports needed to attenuate the loss of a parent to incarceration are difficult to locate in such areas (Travis & Waul, 2003).

Further exacerbating such situations are the great lengths often taken to keep the incarceration of a loved one private, as all family members, adults and children alike, must cope with the shame and social stigma associated with imprisonment (Hairston, 2002). Children are often fed misinformation or intentionally deceived by immediate family members or caretakers to avoid dealing with the additional stress of parental incarceration. As Hairston (2002:8) writes, “imprisonment is not a reason for celebration or to be proud...it is not the goal one seeks for

oneself or one's children". For some children, misinformation given to them about their parents' incarceration results in extreme confusion in regard to their fathers' or mothers' whereabouts (Murray & Farrington, 2005).

In addition to higher likelihoods of social disadvantage, children who experience parental imprisonment are approximately twice as likely to develop undesired mental health outcomes, such as anxiety and depression, than children whose parents have not been incarcerated (Murray et al., 2009). In their systematic review of literature pertaining to parental incarceration experiences that had been completed to date, Murray et al. (2009) highlight the findings and outline recommendations for future, more thorough research. In their review, the authors found support for their hypothesized correlations between parental imprisonment and children's antisocial behaviors and mental health issues. They explain that, in reaction to the imprisonment of a parent, children may "act out or become withdrawn, anxious, or depressed" (Murray et al., 2009:6). In fact, children who experience parental imprisonment are about twice as likely to develop such undesired outcomes than children whose parents have not been incarcerated (Murray et al., 2009). These undesirable outcomes do not necessarily occur only in childhood or while a parent is incapacitated but, indeed, may happen throughout the child's life course- during or after parental imprisonment or even well into adulthood (Murray et al., 2009).

Furthermore, children with incarcerated parents may be subject to bullying or teasing as a result of the social stigma associated with imprisonment (van de Rakt et al., 2011). In their in-depth interviews with disadvantaged families impacted by the imprisonment of a loved one, Braman and Wood (2003) found children do not talk about their experiences and emotionally withdraw from social settings and relationships due to the confusion and social stigma associated with parental imprisonment. Nesmith and Ruhland (2008) report similar patterns of isolation and

rejection from peers amongst children with incarcerated parents. Interviewing 34 children with incarcerated parents, researchers recorded several reports of anxiety felt by these children, with many fearing discussing the whereabouts of their parents with their peers. Nesmith and Ruhland (2008) also report children's feelings of distress in regard to their current caregivers' increased responsibilities and strain. They explain that children of incarcerated parents were quite aware of the stress their parents' imprisonment had placed on their current caregivers and extended family.

Wakefield and Wildeman (2011) highlight the confounding risk factors that could also, or more directly, affect most children with parents in prison, as their findings suggest these children were not on pathways to positive outcomes *prior* to parents' imprisonment. Utilizing two popular longitudinal data sets with representative samples of American youth and their parents (Project on Human Development in Chicago Neighborhoods (PHDCN) and the Fragile Families and Child Wellbeing Study (FFCW), Wakefield and Wildeman (2011) avoided some of the pitfalls associated with prior research that relied on somewhat outdated, international, possibly irrelevant datasets.

The authors' main goal was to underscore the potential for intergenerational inequality, specifically racial inequality, as a result of mass imprisonment. Through sophisticated analyses of paternal imprisonment effects on offspring, they found increases in both externalizing (i.e. behavioral) and internalizing (i.e. mental health) problems when compared to children whose fathers had not been incarcerated. However, when taking children's preexisting disadvantage into account, paternal incarceration effects weakened.

Wakefield and Wildeman (2011) are not alone in finding parental incarceration effects weaken when more sophisticated analyses or different data sources are used. The following

section outlines studies that have achieved similar results or even found the effects of parental incarceration disappear after controlling for key factors.

Disappearing Effects. Kinner, Alati, Najman, and Williams (2007) found disappearing effects of parental incarceration using an Australian-based sample of children born to mothers between 1981 and 1983. Kinner et al. (2007) compared outcomes for 137 children whose paternal influence (father or mother's partner) had been incarcerated anytime before the children's 14th birthday. With a comparison group of over 2000 children born during the sampling period, Kinner et al. (2007) initially found that paternal incarceration significantly impacted children's level of antisocial behavior and internalizing behaviors. However, after controlling for a myriad of family, parent, and childhood risk factors (i.e. parenting style, maternal mental health, domestic violence), Kinner et al. (2007) reported no effect of paternal incarceration on those outcomes. They conclude by stating,

“in the context of general disadvantage, paternal arrest and imprisonment may have relatively little impact...and in the context of broader psychosocial disadvantage, it may be that paternal imprisonment is not as damaging as once thought” (Kinner et al., 2007:1153).

However, Kinner et al. (2007) note that future research should consider the different impact maternal incarceration may have on offspring, as well as differences between offspring's gender and reactions to parental incarceration.

Murray, Janson, and Farrington (2007) achieved similar findings using a Swedish sample of children born in 1953 who were all living in Stockholm 10 years later. Comparing the rate of convictions of the adult-children who experienced parental incarceration between the ages of 6 and 19 years old with children whose parents were not incarcerated, Murray et al. (2007) initially found parental incarceration experiences to be a strong predictor of adult-children's (19 to 30

years of age) criminal behavior. However, after controlling for parental criminality (i.e. regressing additional comparison group of 245 youth from the same cohort but whose parents were incarcerated before their children's birth only), parental imprisonment had no additional effects on offspring's outcomes. Murray et al.'s (2007) findings suggest parental incarceration effects did not cause offspring's offending. However, because of the location and years in which the data was collected, the authors posit that their results could be biased by the contemporaneous social contexts and incarceration policies in Sweden. They suggest further research regarding the potential differences such social contexts might incur.

Current Study. The current study focuses on a small piece of the parental incarceration puzzle by examining the differences in offspring's adulthood arrest outcomes according to which parent (mother or father) was incarcerated. Guided by past research findings and theoretical frameworks described in Chapter 2, it is hypothesized that offspring who experienced the imprisonment of a parent will be more likely to report having been arrested themselves when compared to respondents' who never had an incarcerated parent. Furthermore, I hypothesize that offspring whose mothers had been incarcerated will be more likely to report personal arrest when compared to offspring whose fathers were incarcerated. The subsequent chapters address the methodology and results of this study and conclude with a discussion of the limitations, findings, and implications for future research.

CHAPTER THREE: METHODOLOGY

Sample

To answer the current research questions, this study utilized public-use data from the National Longitudinal Study of Adolescent Health (Add Health), available for download on the Inter-University Consortium for Political and Social Research (ICPSR) website. Add Health is currently a four-wave, nationally representative, longitudinal sample of American youth, providing data on participants from grades 7 through 12 into adulthood. Add Health allows for measuring deviant and criminal behavior, as well as a variety of other variables that may affect participants' behavior and lifetime outcomes.

Wave 1 of Add Health was collected in 80 representative communities in the United States between 1994 and 1995. Participants included approximately 90,000 middle and high school students who completed in-school surveys, along with a subsample who completed additional in-depth in-home surveys. For this subsample, a parent or guardian also completed parental questionnaires, providing more detailed measures for data analyses. Follow-up interviews with the in-home survey subsample have been completed at each wave. Approximately 2 years after Wave 1 was completed, researchers collected Wave 2 of the Add Health, and then Wave 3, about 5 years later (2001-2002). The most current round of data collection (Wave 4) took place between 2007 and 2008, and these data recently became available for public-use on the ICPSR website.

Measurement of Variables

Outcome variable. To estimate respondents' experiences with official criminal justice intervention, the Wave 4 dichotomous variable "Have you ever been arrested?" ($0 = no$, $1 = yes$)

was selected as this study's binary outcome variable: lifetime arrest experience. Thirty respondents who were currently incarcerated during Wave 4 data collection were recoded from $8 = \textit{legitimate skip}$ to $1 = \textit{yes}$, as these respondents had obviously been arrested in their lifetime and had completed other sections of the survey. Any observation with values associated with refusing to answer or illegitimate skips of the question were recoded as missing and not included in this analysis ($n = 17$).

Wave 4 respondents were between the ages of 24 and 33 years of age (see Table 1 for descriptive statistics). As criminality typically peaks during adolescence (i.e. 15 to 17 years of age) then gradually declines over time, this notion of the age-crime curve and the sample age range suggests most respondents' propensity to commit crime would be declining, or essentially desisting from criminal activity (Hirschi & Gottfredson, 1983). By measuring offspring's experience with arrest at this wave, I am able to assess potential outcomes associated with parental incarceration experiences that include and somewhat surpass the peak ages for criminal involvement (Hirschi & Gottfredson, 1983).

Main predictor variables. The independent variables assessing respondents' experiences with parental incarceration were measured using two questions from Wave 4: "Has/did your biological mother ever spend/spent time in jail or prison?" and "Has/did your biological father ever spend/spent time in jail or prison?". Both questions were dichotomous ($0 = \textit{no}$, $1 = \textit{yes}$) variables. Any observations missing values (i.e. refusals or don't knows) on these main predictors were not included in this analysis ($n = 49$ and $n = 294$, respectively).

Control variables. Due to their established associations with deviant outcomes and as guided by prior parental incarceration literature and criminological theory, the following control variables were included in this analysis: offspring's age, sex, race, level of education by Wave 4

and prior delinquency measure (Hannon, 2003). Additionally, socioeconomic status, household structure, and parents' age and education level were also included.

Offspring characteristics. Offspring refers to the original sample of school-aged respondents who, at Wave 4, are now adults answering about their parents' parental incarceration. It is not referring to original respondents' own children.

Offspring's biological sex was dummy-coded into a dichotomous variable (0= *male*, 1= *female*). Respondents' race/ethnicity was also dummy-coded into a dichotomous variable: race/ethnicity (0= *non-White*, 1= *White, non-Hispanic*). Because over half of the sample identified as White, non-Hispanic, the remaining race/ethnic categories were collapsed into a single non-White category for ease of comparison.

Offspring's level of education was measured at Wave 4. This variable was dummy-coded to indicate whether or not respondents had graduated high school or equivalent (0= *did not graduate high school or equivalent*, 1= *high school graduate or equivalent*).

Offspring's prior delinquency was assessed using fifteen Wave 1 variables summed into a Wave 1 Delinquency Scale. Respondents were asked if they had committed various acts, ranging in seriousness, over the past 12 months. The delinquent acts asked about included activities from stealing small items to stealing cars or selling drugs. The answer options included (0= *never*, 1= *once or twice*, 2= *three or four times* or 3= *five or more times*). As modeled in prior Add Health research (see Haynie, 2001), answers to these 15 items were summed with higher scores indicating more delinquency ($\alpha = 0.82$). I then divided these additive terms by the total number of questions to obtain offspring's average item responses ranging from 0 to 3, with 3 indicating more delinquency. The Wave 1 Delinquency Scale was used to inform our analyses, as prior delinquency is the best predictor of future delinquency.

Family characteristics. Offspring's socioeconomic status was assessed using a retrospective question answered by the now-adult respondents at Wave 4: "Before you were 18 years old, did anyone in your household ever receive public assistance, welfare payments, or food stamps?" Valid answer options included ($0 = no$, $1 = yes$). Any observations missing values (i.e. refusals or don't knows) were not included in this analysis ($n = 12$).

Household structure was assessed using Wave 1 data from the Parental Questionnaire, as was parents' age and parents' education level. Household structure was dummy-coded into a dichotomous variable ($0 = single\ parent\ home$, $1 = married$). Parents' education level was also dummy-coded to indicate whether or not the participating parent graduated high school or equivalent ($0 = did\ not\ graduate\ high\ school\ or\ equivalent$, $1 = high\ school\ graduate\ or\ equivalent$).

Analysis

To examine the impact of parental incarceration effects on offspring arrest experiences, a series of logistic regressions were conducted. However, before estimating my regression models, a series of bivariate analyses were also conducted using STATA 12. Logistic regression is the appropriate method to use when assessing a dichotomous dependent variable because it minimizes violating statistical assumptions associated with using linear OLS regression techniques (Weisburd & Britt, 2007). While logistic regression techniques do not produce results that are as easily interpreted or straightforward as OLS coefficients, logistic regression allows examination of bounded, dependent variables in terms of predicted probabilities and odds ratios. Also unlike OLS regression results, the percent of variance explained by logistic regression models is not provided by an R^2 statistic (Weisburd & Britt, 2007). Because of the lack of interpretation of pseudo- R^2 values provided by STATA (McFadden pseudo R^2), a post-

estimation classification of predictions was reported to more accurately assess how well the regression models predicted offspring's arrest (Acock, 2010; Weisburd & Britt, 2007). A Hosmer-Lemeshow post-estimation fit command was also calculated, providing another Chi-square statistic comparing predicted values to actual values. These results are outlined in more detail in Chapter 4.

CHAPTER FOUR: RESULTS

Using public-use data from the National Longitudinal Study of Adolescent Health, I ran a series of bivariate analyses to assess correlations and independence of groups prior to running logistic regression analyses. All analyses were completed in attempt to determine the importance of parental incarceration experiences in the prediction of offspring's arrest outcomes by Wave 4. The current chapter presents and displays results from the bivariate analyses, as well as the logistic regression models.

General Variable Characteristics

The working sample for this study was 4042 participants, approximately 18 percent ($n=832$) of whom reported parental incarceration experiences. Respondents' biological sex was nearly evenly split (54 percent female), as was respondents' race/ethnicity, with 58.6 percent White, non-Hispanic participants. Respondents' average age at Wave 4 was 28 years old ($SD = 1.81$) but ranged from 24 to 33 years of age, and 93.6 percent of this sample had earned a high school diploma or equivalent.

Offspring's prior delinquency scores measured at Wave 1 ranged from 0 to 3, with higher scores indicating more delinquency. The sample mean was 0.27 ($SD = 0.34$). Over 70 percent of the sample was recorded as living in a two-parent home at Wave 1, and approximately 24 percent reported residing in a household where public assistance was received at some point before they turned 18 years of age.

Parents' average age at Wave 1 was 41.6 years of age ($SD = 6.54$), and over 85 percent of parents who answered the parental questionnaire in this sample reported having a high school diploma or equivalent. As for parental incarceration experiences, 3.5 percent of this sample

experienced the incarceration of their mother, and 15.1 percent experienced having a father incarcerated. For those who experienced maternal incarceration, 59 percent were daughters. Along those same lines, 54.6 percent of the offspring who experienced paternal incarceration were also female. In terms of the dependent variable, 28.6 percent of this sample reported having been arrested in their lifetime. Further univariate statistics for all variables described above and included in the analyses are displayed in Table 1.

Table 1.
Overall Sample Descriptive Statistics (N=4103)

Variables	<i>M</i>	<i>SD</i>	Min	Max	<i>f</i>	% of total N
<i>Offspring's Characteristics</i>						
Age (years at Wave 4)	28.38	1.81	24	33		
Sex ^a					2761	54.0
Race/Ethnicity ^b					3743	58.6
Level of Education by Wave 4 ^d					4787	93.6
Wave 1 Delinquency Scale Score	0.27	0.34	0	3		
Lifetime Arrest Experience ⁱ					1457	28.6
<i>Family Characteristics</i>						
Socioeconomic Status ^c					1242	24.3
Household Structure ^e					3955	70.2
Parent Age	41.66	6.54	20	80		
Parent Education Status ^f					4786	85.3
Maternal Incarceration Experience ^g					177	3.5
Paternal Incarceration Experience ^h					655	13.8

^a The reference category is females

^b The reference category is White

^c The reference category is household received public assistance

^{d, f} The reference category is at least a high-school diploma or equivalent

^e The reference category is two-parent household

^g The reference category is mother spent time incarcerated

^h The reference category is father spent time incarcerated

ⁱ The reference category is has been arrested

^j The reference category is a parent spent time incarcerated

Correlations

A pairwise correlation matrix was performed to assess possible collinearity between the variables included in the analyses (see Table 2). The matrix provided an initial glimpse into the relationships between these variables and an understanding of the extent to which they are related. Very few of the variables were not significantly related to one another, and all theoretically guided presumptions were confirmed by this initial analysis.

For example, in terms of the magnitude of relationships between variables, those correlated to respondents' lifetime arrest experiences included respondents' biological sex and Wave 1 delinquency scores reaching almost moderate strength ($r = -0.27$ and 0.28 , respectively). More specifically, these correlation values suggest males in this sample were more likely than females to report having been arrested – a relationship that is not surprising given the disproportionate number of men involved in the criminal justice system. Similarly, those who scored higher on the Wave 1 Delinquency Scale and, therefore, self-reported more delinquency as youth, were also more likely to report having been arrested in their lifetime. Again, this is not surprising given the fact that the best predictor of future behavior is prior behavior.

Pertaining to variables related to parental incarceration experiences, respondents' who were non-White were more likely to have a mother or father in prison, as were respondents' who reported receiving public assistance (i.e. welfare) at some point during their childhood. Most importantly, our main variables of interest were significantly correlated with both maternal and paternal incarceration experiences related to offspring's lifetime arrest experience. To explore this relationship more closely, a series of chi-square analyses were performed.

Table 2.*Bivariate Correlations of Model Variables Predicting Probability of Arrest*Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Variable	Age	Sex	Race	Socio-economic Status	Level of Education by Wave 4	Wave 1 Delinquency Scale Score	Lifetime Arrest Experience	Household Structure	Parent Age	Parent Education Status	Maternal Incarceration Experience	Paternal Incarceration Experience
Age	-	-.06***	-.01	-.00	.01	.02	.02	-.02	.21***	-.04**	-.00	.02
Sex	-.06***	-	-.02	.13***	.04**	-.14***	-.27***	-.01	-.02	-.02	.02	.00
Race	-.01	-.02	-	-.11***	.06***	-.04***	-.04**	.22***	.01	.19***	-.06***	-.06***
Socio-economic Status	-.00	.13***	-.11***	-	-.20***	.07***	.13***	-.16***	-.08***	-.15***	.09***	.14***
Level of Education by Wave 4	.01	.04**	.06***	-.20***	-	-.10***	-.15***	.10***	.05***	.22***	-.06***	-.08***
Wave 1 Delinquency Scale Score	.02	-.14***	-.04***	.07***	-.10***	-	.28***	-.09***	-.02	-.02	.05***	.09***
Lifetime Arrest Experience	.02	-.27***	-.04**	.13***	-.15***	.28***	-	-.12***	-.04**	-.04**	.08***	.11***
Household Structure	-.02	-.01	.22***	-.16***	.10***	-.09***	-.12***	-	.04**	.08***	-.11***	-.19***
Parent Age	.21***	-.02	.01	-.08***	.05***	-.02	-.04**	.04**	-	.00	-.02	-.15***
Parent Education Status	-.04**	-.02	.19***	-.15***	.22***	-.02	-.04**	.08***	.00	-	-.07***	-.08***
Maternal Incarceration Experience	-.00	.02	-.06***	.09***	-.06***	.05***	.08***	-.11***	-.02	-.07***	-	.05***
Paternal Incarceration Experience	-.02	.00	-.06***	.14***	-.08***	.09***	.11***	-.19***	-.15***	-.08***	.05***	-

Chi-Square (χ^2) Results

By cross-tabulating a dummy-coded variable measuring any parental incarceration experience ($0 = no$, $1 = yes$) with a dichotomous measure of offspring's arrest experiences ($0 = no$, $1 = yes$), an initial step towards assessing the potential effects of parental incarceration was taken. More specifically, a chi-square test of independence was performed to examine the relation between offspring's experience with the imprisonment of a parent and personal arrest experience. The relationship between these variables was significant, $\chi^2(1, N = 5059) = 90.14$, $p < .001$. Offspring who experienced the incarceration of a parent were more likely to have been arrested (42 percent) than offspring whose parents were never incarcerated (26 percent). The results of the first chi-square are displayed in Table 3.

Table 3.

Cross-tabulation of Any Parental Incarceration Experience and Offspring's Arrest Experience

<i>f</i> (% total N = 5059)	Offspring Arrest Experience		Total
	No	Yes	
Never experienced parental incarceration	3135 (74.1)	1093 (26.0)	4228 (100)
Did experience parental incarceration	481 (58.0)	350 (42.1)	831 (100)
Total	3616 (71.5)	1443 (28.5)	5059 (100)

$\chi^2 = 90.14$ (df = 1, $p = 0.000$)

This process was repeated to test maternal and paternal incarceration experiences separately. As outlined in Table 4, a chi-square test of independence was performed to examine the relation between offspring's experience with having a mother behind bars and personal arrest experiences. The relationship between these variables was significant, $\chi^2(1, N = 5048) = 34.45$, $p < .001$. Forty-eight percent of offspring who experienced the incarceration of their mother also reported being arrested at some point in their lifetime, while only 28 percent of offspring who did not experience maternal incarceration reported arrest.

Table 4.*Cross-tabulation of Maternal Incarceration Experience and Offspring's Arrest Experience*

<i>f</i> (% total N = 5048)	Offspring Arrest Experience		Total
	No	Yes	
No maternal incarceration experience	3519 (72.2)	1352 (27.8)	4871 (100)
Maternal incarceration experience	92 (52.0)	85 (48.0)	177 (100)
Total	3611 (71.5)	1437 (28.5)	5048 (100)

 $\chi^2 = 34.45$ (df = 1, $p = 0.000$)

This relationship was also examined for offspring whose fathers were imprisoned. A third chi-square test of independence was performed to examine the relation between offspring's experience with paternal imprisonment and personal arrest experience. The relationship between these variables was significant, χ^2 (1, $N = 4732$) = 60.59, $p < .001$ (see Table 5). Again, a higher percentage (41 percent) of offspring who experienced the incarceration of their father reported arrest while only 26 percent of offspring who did not experience paternal incarceration reported arrest.

Table 5.*Cross-tabulation of Paternal Incarceration Experience and Offspring's Arrest Experience*

<i>f</i> (% total N = 4732)	Offspring Arrest Experience		Total
	No	Yes	
No paternal incarceration experience	3052 (74.2)	1053 (25.8)	4078 (100)
Paternal incarceration experience	389 (59.5)	265 (41.2)	654 (100)
Total	3414 (72.2)	1318 (27.9)	4732 (100)

 $\chi^2 = 60.59$ (df = 1, $p = 0.000$)

Wanting to explore this effect even further, two final chi-squares tests were performed specifically looking at the different effects of maternal or paternal incarceration on arrest depending on offspring's biological sex. In Table 6, results from the chi-square analysis testing maternal arrest experiences by daughters and sons are displayed. The relationship between these variables was significant, χ^2 (1, $N = 177$) = 6.66, $p < .05$. Sons (59.7 percent) whose mother was

incarcerated at some point during their life were more likely than daughters (40 percent) to have been arrested. Overall, almost half (48 percent) of all children in this sample whose experienced maternal incarceration were eventually arrested themselves.

Table 6.

Cross-tabulation of Offspring with Maternal Incarceration Experience and their Arrest Experience

<i>f</i> (% total N = 177)	Offspring Arrest Experience		
	No	Yes	Total
Sons who experienced maternal incarceration	29 (40.3)	43 (59.7)	72 (100)
Daughters who experienced maternal incarceration	63 (60.0)	42 (40.0)	105 (100)
Total	92 (52.0)	85 (48.0)	177 (100)

$\chi^2 = 6.66$ (df = 1, $p = 0.010$)

Similar results were achieved when assessing paternal arrest experiences specific to offspring's biological sex (see Table 7). Again, the relationship between having fathers who were incarcerated and sons and daughters also experiencing arrest was significant, χ^2 (1, $N=726$) = 67.19, $p < .001$. Sons who experienced paternal incarceration at some point during their lifetime were more likely than daughters to have been arrested (58 percent and 26.7 percent, respectively).

Table 7.

Cross-tabulation of Offspring with Paternal Incarceration Experience and their Arrest Experience

<i>f</i> (% total N = 654)	Offspring Arrest Experience		
	No	Yes	Total
Sons who experienced paternal incarceration	126 (42.3)	172 (57.7)	298 (100)
Daughters who experienced paternal incarceration	263 (73.9)	93 (26.1)	356 (100)
Total	389 (59.5)	265 (40.5)	654 (100)

$\chi^2 = 67.19$ (df = 1, $p = 0.000$)

However, the overall percentage of offspring who report arrest after paternal incarceration experiences (41 percent) was less than those who report being arrested after mothers'

imprisonment (48 percent), possibly suggesting stronger effects of maternal incarceration on offspring's arrest outcomes.

Logistic Regression Results

At this stage, it was time to further specify the effects of maternal and paternal incarceration on offspring by determining the separate and combined influence of parental incarceration experiences and offspring and family characteristics. The dichotomous outcome of offspring arrest was predicted using three different models: 1) a simple model including the dichotomous independent variables indicating offspring's experience with either maternal or parental incarceration 2) a simple model including only theoretically guided continuous and categorical variables measuring offspring's personal and family characteristics as predictors of arrest and 3) a full model including the dichotomous parental incarceration measures while controlling for offspring and family characteristics.

The control variables included were age (years), a dummy-coded sex variable (females were the reference category), a dummy-coded race/ethnicity variable (White, non-Hispanic was the reference category), a dummy-coded socioeconomic status variable (recipients of public assistance were the reference category), a dummy-coded measure of level of education (high school graduate or equivalent by Wave 4 was the reference category), a measure of prior delinquency (average item response to 15 item delinquency scale at Wave 1), a dummy-coded household structure variable (two-parent household was the reference category), parents' age (years), and a dummy-coded parental level of education variable (high school graduate or equivalent was the reference category). The unstandardized logistic regression coefficients (*b*) and odds ratios (*OR*) are given for each model, along with indicators of the models' significance (χ^2) and fit (*Hosmer-Lemeshow and total percent correctly predicted*) (see Table 8).

Table 8.
Logistic Regression Models Predicting Offspring Arrest

Variable	Model 1 (N= 4721)		Model 2 (N= 4357)		Model 3 (N=4042)	
	<i>b</i>	<i>OR</i>	<i>b</i>	<i>OR</i>	<i>b</i>	<i>OR</i>
Constant	-1.08	.34***	0.78	2.18	0.69	1.99
<i>Independent Variables</i>						
Maternal Incarceration Experience	1.03	2.81***			0.96	2.63***
Paternal Incarceration Experience	0.69	2.00***			0.37	1.45***
<i>Offspring Characteristics</i>						
Age			-0.01	0.99	-0.01	0.99
Sex			-1.29	0.27***	-1.31	0.27***
Race/Ethnicity			-0.01	1.01	0.02	1.02
Level of Education by Wave 4			-0.76	0.47***	-0.69	0.50***
Wave 1 Delinquency Scale Score			1.62	5.05***	1.57	4.79***
<i>Family Characteristics</i>						
Socioeconomic Status			0.65	1.92***	0.57	1.76***
Household Structure			-0.39	0.67***	-0.34	0.71***
Parents' Age			-0.14	1.00*	-0.02	0.98*
Parents' Level of Education			-0.02	0.98	0.03	0.98
Model χ^2	76.07***		752.08***		692.36***	
df	2		9		11	
Hosmer-Lemeshow	-		8.31		19.85*	
% Correctly Predicted	72.21		75.05		75.33	

*** $p < .001$; ** $p < .01$; * $p < .05$

As displayed in Table 8, all three models were predictive of offspring's arrest experiences. Model 1 which included only maternal and paternal incarceration experiences revealed parental incarceration experiences to be a significant predictor of offspring criminal justice outcomes (Model $\chi^2 = 76.07$, $p < 0.001$). However, Model 2, which included only offspring characteristics and family-related variables, was also statistically significant (Model $\chi^2 = 752.08$, $p < 0.001$) and indicated that offspring's biological sex, level of education, prior delinquency, socioeconomic status and household structure during childhood, as well as parent's age were statistically significant predictors of likelihood of offspring's arrest experience. Finally, Model 3, the full model including parental incarceration experience and all offspring and family characteristics,

provided the best prediction of offspring's arrest experiences with 75.3 percent of correctly classified outcomes compared to the earlier models (72.2 percent and 75.1 percent, respectively). Both maternal and paternal incarceration experiences remained statistically significant predictors ($b = 0.96$; $b = 0.37$, respectively) when controlling for all Model 2 characteristics. In addition, all Model 2 variables also remained statistically significant predictors when included with parental incarceration experiences (see Table 8 for coefficient values).

For ease of interpretation, the percentage change in odds was also calculated for all significant variables in the Model 3. The two variables most drastically increasing the odds of offspring's arrest were having a mother incarcerated (163 percent) and prior delinquency (379 percent). Experiencing paternal incarceration was not did not result in as glaring an increase as maternal experiences but did also increase the odds of offspring arrest by 45 percent. Being female significantly decreased the likelihood of arrest for offspring, with women 73 percent less likely to report this criminal justice outcome. Having earned a high school diploma or equivalent also decreased the chances of offspring arrest by 50 percent.

As for family characteristics, growing up in a household where public assistance was received increased offspring's odds of arrest by 76 percent. A similar increase in chance of offspring's arrest was found for respondents from single-parent homes, whose odds of reporting arrest increased by 71 percent if they did not reside in a two-parent home at Wave 1. Finally, parents' age was also a statistically significant predictor with each unit decrease in parent's age (i.e. younger parent) increasing the odds of offspring's arrest outcomes by 2 percent.

In sum, the results achieved from these analyses indicate that including parental incarceration experiences in predictive models of offspring's arrest outcomes enhances the accuracy of the model. Along these same lines, several of respondents' personal and family characteristics were

also highly predictive of offspring's arrest outcomes, with only a slight increase in Model 3's correct percentage classified when parental incarceration experiences were added.

The following and final chapter begins by outlining some limitations of this study. Then, keeping these limitations in mind, a discussion of these results in relation to previous literature and the current study's research questions is provided. This chapter concludes with suggestions for future research.

CHAPTER FIVE: DISCUSSION, LIMITATIONS AND CONCLUSION

Various theoretical frameworks have been utilized in parental incarceration research and continue to be integrated to best address the call for a more comprehensive understanding of the effects of parental incarceration on offspring. Despite the lack of clarity from previous research findings, there is growing consensus among scholars and practitioners alike that research on effects of parental incarceration warrants a multi-dimensional approach in assessing multiple outcomes (Murray et al., 2012b; Aneshensel, Rutter, & Lachenbruch, 1991). Along these same lines, there is increasing agreement that researchers consider how having experienced parental imprisonment affects offspring at points in their lives beyond their parents' prison stay (Giordano, 2010; Murray, Farrington, Sekol, & Olsen, 2009; Phillips et al., 2006; Murray & Farrington, 2005).

While researchers rely on estimates of the true number of children affected by America's reliance on mass incarceration, scholars posit that effects of parental imprisonment on offspring may be of the utmost importance when considering intergenerational transmission of criminality (Murray, Loeber, & Paridini, 2012; Siegel, 2011; Hagan & Dinovitzer, 1999). More to the point, it remains unclear if issues related to experiencing parental incarceration are temporary or perhaps have more persisting effects throughout offspring's life course (Murray et al., 2012b). Also, given the increased prevalence of children and families impacted by the imprisonment boom, researchers have called for a comprehensive understanding of how individuals, families, and the wider community are impacted (Murray & Farrington, 2008; van de Rakt, Murray, & Nieuwebeerta, 2011; Clear 2007; Travis & Waul 2003; Hagan & Dinovitzer 1999).

Although this study considered only a small piece of this complicated puzzle, the findings aligned with and added to the growing body of research on effects of parental incarceration, as

well as the larger field of research on intergenerational transmission of antisocial behavior. In terms of the first hypothesis pertaining to the effects of parental incarceration on offspring's arrest outcomes, the results suggest that the odds of offspring's arrest are increased for those who have experienced parental incarceration. Also, it appears for sons and daughters who experienced parental incarceration, sons were more likely to be arrested than daughters. Finally and as hypothesized, results show the effects of maternal incarceration experiences were stronger than experiencing the imprisonment of a father. These results reflect prior research findings with various scholars positing that maternal incarceration may induce more strain, stigma, or trauma on offspring and, therefore, increase the likelihood of adverse outcomes such as arrest. Our results also provide support for the notion that experiencing parental incarceration is one of many factors offspring must contend with, as low socioeconomic status and residing in a single-parent household were also significant predictors of offspring's arrest (Siegel, 2011; Dallaire, 2007).

Some limitations to consider include that the full logistic regression model (Model 3) may not be correctly specified despite its significance, as all relevant variables may not have been included. When attempting to avoid specification bias in predicting outcomes, it is important to include all relevant variables as guided by theory and prior research. For example, Pratt and Cullen (2000) suggest self-control levels are integral for accurately predicting delinquency and antisocial behavior despite other sample characteristics or theoretical constructs. By more carefully selecting the variables to include in the model, the measurement of offspring's odds of arrest may be more precise.

For research on the effects of parental incarceration, Murray et al. (2012b) clarify that failing to include the necessary variables (i.e. preexisting risk factors) may lead to overestimation of the effects of experiencing parental incarceration. Some additional variables that should be

considered in future parental incarceration research using Add Health include the number of children in a family, parental communication, supervision, and closeness, and genetic predispositions. Variables that may not be available in Add Health but that have also been posited as relevant to parental incarceration research include caretaker stress, parental antisocial behavior or mental health problems, and history of offspring neglect or abuse (Giordano, 2010; Murray and Farrington, 2008).

Another limitation of this study was that it did not attempt to address time ordering of parental incarceration experiences with family or offspring characteristics. It is possible, or even likely, that having a parent behind bars impacted some of the significant family and offspring characteristics predicative of arrest. For example, Wave 1 delinquency scores were completed by respondents between the ages of 11 and 21. It is possible that Wave 1 measures of delinquency, socioeconomic status, and household structure could be contemporaneous measures or evaluated subsequent to parents' imprisonment. Also, I did not control for the length of parents' imprisonment stay in this model. Different outcomes that may result from a few days stay versus a few years behind bars is an important factor when considering the impact on offspring. Because of these reasons, the influence of the model variables I included may be over or underestimated.

As evidenced by this study's findings, it is important to remain aware of offspring's lifetime experiences before, during, and after experiencing parental incarceration. As Giordano (2010) notes, simply by virtue of their parents' involvement with the criminal justice system, these children are exposed to several unique risk factors, and it is often too late in the game to offer them services post-parental incarceration. Again, it is integral to gain better understanding of the most consequential combinations of risk factors associated with adverse future outcomes

for offspring dealing with parental incarceration. To that point, a mixture of both quantitative and qualitative analyses are necessary to better establish the scope of intergenerational transmission, as well as the ‘how’s’ and ‘why’s’ behind the numbers (Giordano, 2010).

In sum, with imprisonment rates having exponentially increased over the past few decades and the number of children impacted by this phenomenon having also increased, the need for pragmatic consideration of the impact parental imprisonment has on these children is evident. Also, because high rates of incarceration are concentrated in a small number of communities, logic dictates further exploration of the contextual factors that might also be impacting these children’s lives. Finally, despite the limitations of this study, its findings are important and meaningful. Children are the cornerstones of our future, and nurturing their healthy development should be of the utmost importance. As these findings reveal, the loss of a parent to incarceration can negatively impact children’s lifetime outcomes, and it is possible that our nation’s reliance on mass incarceration has subsequently penalized generations of children for their parents’ crimes. However, it is also important to note the resilience of youth and children’s remarkable ability to thrive despite the odds stacked against them.

In the future, it will be important to consider the factors that keep at-risk youth from falling victim to cumulative negative life circumstances. Although our results suggest children who experience parental incarceration have increased odds of being arrested themselves, there were still 27 percent who beat these odds and were not arrested despite their experience with parental incarceration. To better inform future interventions and policies, researchers should attempt to uncover the resilient characteristics and successful methods offspring have used to circumvent the intergenerational transmission of antisocial behaviors. As the nation with the largest prison population worldwide, our future, along with our children’s, depends on it.

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