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The Intergenerational Transfer of Criminal Justice Involvement:  
Risk and Protective Factors As Moderating Variables

By  
Caitlin Storm

Claremont Graduate University  
2019



### **APPROVAL OF THE DISSERTATION COMMITTEE**

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Caitlin Storm as fulfilling the scope and quality requirements for meriting the degree of Doctorate of Philosophy in Economics and Health Promotion Sciences.

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## **Abstract**

The Intergenerational Transfer of Criminal Justice Involvement:  
Risk and Protective Factors As Moderating Variables

by  
Caitlin Storm

Claremont Graduate University: 2019

Previous literature identified evidence of a transfer of criminal justice involvement between generations of family members. This relationship has proven especially strong between parents and children. Different demographic factors slightly alter the strength and significance of the transfer, but the established relationship between the criminal justice involvement of the parent and the increased likelihood of the child's criminal justice involvement remains consistent.

Data from the National Longitudinal Survey of Youth 1997 was used to analyze the effect of the father's criminal justice involvement on his child's. Using binary logistic regression models, predictor variables were included in a step-wise fashion to identify the role that a father's imprisonment, as well as risk and protective factors, play in the child's future likelihood of arrest and incarceration. The risk and protective factors served as proxies for trauma and resilience, respectively, and were analyzed to determine if they also served as moderators. The results showed that while the risk and protective factors were significant predictors of a child's future arrest and incarceration, they did not moderate the relationship between the father's imprisonment and the child's criminal justice involvement.

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## Chapter 1

### Introduction

The number of individuals in the United States that have been involved in the criminal justice system has increased dramatically in recent decades. On the more intense end of the spectrum, individuals who were under control of the U.S. Corrections System, which includes incarceration, probation, and parole, in 2016 totaled 6,613,500.\* This number by itself is staggering, but when compared to the 1980 total of 1,842,100,\* is even more shocking.<sup>1</sup> Among other factors, many political, economic, and societal changes have occurred since 1980, which can account for much of increase in the population who have gone through the Corrections system. Criminal justice policy changes, such as those that have expanded the length of sentences that convicted individuals serve, resulted in individuals being incarcerated for longer periods, causing them to remain in jails and prisons as more individuals enter the system, further crowding the facilities and increasing the point-in-time count of individuals in the Corrections system. Partly in reaction to the need for space for the increasing Corrections population, but also partially in response to the profitability of Corrections, many governmental and private entities have directed money towards creating additional Corrections centers. This allowed for even more individuals to be housed, but in tandem, created a need for those spaces to be filled. The U.S. also witnessed a greater problem with drugs during the 1980s. Countries increased their exporting of illegal drugs to the U.S., which expanded the availability of illegal substances for residents. In response, the U.S. government enacted stricter, "tough on crime" policies that

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<sup>1</sup> Kaeble, D. And Cowhig, M. (2018). *Correctional Populations in the United States, 2016*. Washington, DC: Bureau of Justice Statistics. *Key Statistics: Total Correctional Population*. Washington, DC: Bureau of Justice Statistics.

\*Totals are adjusted for individuals with multiple correctional statuses to prevent double counting.

created mandatory minimum penalties for offenses associated with certain drugs, thereby increasing the number of individuals who were arrested, convicted, and sentenced. While there are many other contributing factors to the increase in the number of people involved in the criminal justice system, influences on the micro level are also important to explore and understand if any meaningful change in this trajectory is to occur.

Regardless of the reasons that contribute to more individuals being involved in the criminal justice system, evidence suggests that there are significant costs, both tangible and intangible, that are associated with this trend. A 2015 report from the Vera Institute of Justice found that the average daily cost of incarcerating an inmate in a local jail ranges from \$47.62 in Cherokee County, Georgia, to \$571.28 in New York City, New York. The largest contributor of these costs is personnel salaries and benefits, but inmate programs and health care, administrative costs, capital costs, and legal fees all contribute to the figures, although not every jail provides the same level or range of programs for inmates. Despite the wide variance in cost of jails, the financial burden on taxpayers and local governments is still significant, especially as the jail population remains high.

The rising costs of Corrections can also be seen at the Federal level. The Department of Justice, Bureau of Prisons calculated the average daily cost to incarcerate Federal inmates as \$94.82 for the Fiscal Year (FY) 2016. The average daily cost increased to \$99.45 in FY 2017. However, these only represent a fraction of the costs that are incurred by having an increasing proportion of the population incarcerated. The system-involved population is not only costly to taxpayers and the governments who pay for the facilitation of system-involved population, but



individuals and who become system-involved, their families, and their communities, also bear the intangible costs that are often overlooked.

The many intangible costs associated with criminal justice system involvement are seen not only while the individual is system-involved, but also after he/she is released from the system. The role of the criminal justice system is often seen as a means to punish violators of the law, and in some cases, rehabilitate the individual so that they return to society and are deterred from committing another crime. Despite this intention, more evidence has surfaced that suggests an individual who goes through the Corrections system is released with more deleterious outcomes than when they entered Corrections. Once individuals return to society, they often have difficulty finding work, which can lead to not having health care, not being able to pay for housing or utilities, and added stress for the individual and families. Communities that experience a higher prevalence of justice-involved individuals are often considered “less safe,” and may affect the happiness and security of community members. Unfortunately, these are only a few of the negative impacts, or social costs that involvement in the criminal justice system can have on individuals, families, and communities. As a result of both the tangible and intangible costs of criminal justice system involvement across the different levels of payers, reducing criminal justice involvement is a relevant and timely social issue.

When a parent has been involved in the criminal justice system, children often face many burdens that are felt during childhood and that may also leave lasting impacts throughout the child’s life. In the immediate aftermath of the parent being system-involved, children are more likely to experience difficulty in the classroom. In one study, incarcerated mothers reported that

their children experienced more behavioral, school, and learning problems.<sup>2</sup> These problems not only impact the child in the classroom, but may also domino into disadvantage for the rest of the child's life if the child is unable to learn effectively, or produce grades that will allow the child to pursue higher education or better job opportunities. Other studies have found that children are more likely to engage in risky behaviors, such as illicit drug use, prescription drug abuse, and have more sexual partners, when a parent has been system-involved.<sup>3</sup> Children are also more likely to face physical health issues, including high cholesterol, migraines, asthma, HIV/AIDS, and reports of fair/poor health.<sup>4</sup> These negative health outcomes may explain part of the reason that children of system-involved parents were also more likely to die prematurely compared to children whose parents were not system-involved.<sup>5</sup> There are clear, harmful effects from having a parent who has been involved in the criminal justice system, all of which may actually contribute to the child being more susceptible to criminal justice system involvement, as other studies have found.

Many researchers have sought to unpack the factors that lead individuals towards criminal justice involvement. While there are a multitude of reasons that have been identified, this chapter seeks to cover the theories and evidence behind a more narrowed focus: the cycle of intergenerational criminal justice involvement. Research that looks at a parent's criminal justice

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<sup>2</sup> Bloom, B., & Steinhart, D. (1993). *Why punish the children. A reappraisal of the children of incarcerated mothers in America.* San Francisco: National Council on Crime and Delinquency.

<sup>3</sup> Heard-Garris, N., Winkelman, T. N., Choi, H., Miller, A. K., Kan, K., Schlafer, R., & Davis, M. M. (2018). Health care use and health behaviors among young adults with history of parental incarceration. *Pediatrics*, 142(3), e20174314.

<sup>4</sup> Lee, R. D., Fang, X., & Luo, F. (2013). The impact of parental incarceration on the physical and mental health of young adults. *Pediatrics*, 131(4), e1188-e1195.

<sup>5</sup> Van De Weijer, S. G., Smallbone, H. S., & Bouwman, V. (2018). Parental imprisonment and premature mortality in adulthood. *Journal of Developmental and Life-Course Criminology*, 4(2), 148-161.

involvement as an influencing factor in his/her child's future criminal justice involvement has explained this cycle through biological, psychological, and social learning forces. This is of particular concern if a parent's criminal justice involvement has a direct influence on the likelihood of a child becoming involved in the criminal justice system. With a direct effect established, children of system-involved parents comprise an especially vulnerable population.

The first aim of this chapter is to identify theories that explain an intergenerational cycle of criminal justice involvement. Secondly, correlational studies that examine the consistency between what the theorists have proposed and what the studies have found will be summarized. Finally, gaps in the knowledge of the intergenerational relationship that have yet to be explored will be addressed.

Before delving into theories and studies, it is necessary to clarify the relationship of interest. While most of the theories and studies focus on biological parents and their children, the effect a non-biological parent has on his/her child also provides interesting and important information. However, most of the literature assumes biological relation. System-involvement, for the purposes of this chapter, is defined as previous or current contact with the criminal justice system. This includes being arrested, convicted, sentenced, or incarcerated in either jail or prison. For parents, there were no restrictions for inclusion based on length of time involved in the criminal justice system, or for the types of crime associated with system-involvement. Parents who were identified as being on parole or probation were not included in this definition.

The system-involvement of the children included the same system-involvement categories as the parent, but also included delinquency as another form of system-involvement. As a result, some of the outcomes of interest were measured when the children were still considered minors,

while other analyses identified system-involvement outcomes of children when they were adults.

An additional caveat to note is this chapter is concerned with criminal justice involvement, not criminality, necessarily. Criminal justice involvement is measured through surveys reported by the individual, the individual's family, or someone in close relational proximity, or through official police records. While not the same as criminality, criminal justice involvement does overlap a great deal. Criminal justice involvement provides a better, more reliable measure to determine if that particular factor had an impact on children's likelihood of criminal justice involvement. However, due to the lack of specific theories for criminal justice involvement, some of the supporting theories focus on the transmission of criminality, which can also help explain some of the criminal justice system transmission. Criminal justice system involvement captures a large portion of criminality, although not every individual in the system is guilty of a crime. Similarly, not every criminal is necessarily involved in the criminal justice system.

## **Theories**

This analysis draws on theories from criminology, public health, and psychology to understand the intergenerational criminal justice transmission. While many disciplines have focused more on criminality, rather than criminal justice involvement, many of the same concepts still apply.

These disciplines draw from both the inherited and learned behavior approaches to explain why criminality and criminal justice system involvement, may be repeated from one generation to the next.

The theoretical explanations for criminality have moved back and forth between nature and nurture, as has been the case for other cultural and timely topics. Some of the earliest researchers of crime and criminality suspected that biology explained one's propensity towards crime. Cesare Lombroso was one of the first significant contributors to biological positivism, one branch of criminological theories that focus on biological attributes as the causes of criminal behavior.<sup>6</sup> Lombroso performed assessments of the physical attributes of craniums, finding that there were certain features that were common across the craniums of criminals. Certain features, such as facial and cranial asymmetry, were external biological signals that an individual was likely to be a criminal. These physical traits could then be passed down to the next generation. The belief that criminality had a biological component, and was therefore inheritable, became the dominant explanation for criminal behavior during the 18<sup>th</sup> century. While Lombroso's particular finding about cranial features was later debunked, it paved the way for extensions of inheritable traits that make individuals more prone to criminality.

More recently, cognitive theories looked beyond the physical attributes of individuals and instead focused more on cognitive ability. Theorists found this feature to be a strong determinant of crime, which could also be passed to the next generation.<sup>7</sup> The extent to which a parent's intelligence is passed down to children is difficult to attribute due to other factors, such as the quality of the teaching the child receives in school, which can also affect one's intellectual ability. Advances in genetic analysis have also resurfaced biological arguments for criminality.

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<sup>6</sup> Lombroso, C. (2006). *Criminal man*. Duke University Press.

<sup>7</sup> Herrnstein, R. J., & Murray, C. (2010). *The bell curve: Intelligence and class structure in American life*. Simon and Schuster.

One study identified a variation in the monoamine oxidase A (MAO-A) gene in maltreated boys as a common marker of violent criminal behavior as adults.<sup>8</sup> A second analysis using Finnish prisoners also identified the MAO-A gene as a significant predictor of violent criminal behavior, as well as the CDH13 gene, which was associated with violent behavior, such as homicide.<sup>9</sup> These findings suggest that certain biological traits may play a role in one's propensity to commit violent criminal acts, and which increase one's chances of becoming involved in the criminal justice system. Because the MAO-A and CDH13 genes are inheritable, there may be some criminal behavior that has a strong likelihood of being passed down to the next generation. That does not translate as all individuals who possess the "criminal" genes will commit violent offenses. While there may be genes that can make someone more susceptible to either specifically violent or any criminal behavior in general, the passing down of those traits to the next generation is due to chance. Also, this does not mean that only individuals with certain biological characteristics will commit all crimes. There are likely other factors, independent of genes, that can influence an individual to commit an offense.

Adrian Raine and his colleague Laura Baker sought to determine the heritability of certain characteristics that can lead to violent and criminal behavior. After performing a series of assessments on identical and fraternal twins. Using multivariate genetic analysis, estimates of heritability were computed. Raine and Baker found that nearly half of all of the variability in antisocial behavior was explained by genes. After averaging and combining measures from the

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<sup>8</sup> Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W., ... & Poulton, R. (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297(5582), 851-854.

<sup>9</sup> Tiihonen, J., Rautiainen, M. R., Ollila, H. M., Repo-Tiihonen, E., Virkkunen, M., Palotie, A., ... & Saarela, J. (2015). Genetic background of extreme violent behavior. *Molecular psychiatry*, 20(6), 786.

perspectives of children, parents, and teachers, the results showed that 96% of antisocial behavior was heritable.<sup>10</sup> However, as with any reporting, there is potential for biased and unreliable responses. Without a definitive, scientific measure, the results are only reflective of the perceptions of the individual and others around the individual. Other twin studies found heritability of proactive aggression, where one uses force to get something, was around 50%.<sup>11</sup>

Although these and other twin studies have produced significant and dramatic results, they have also received a great deal of criticism for the extent to which their findings have been used as a justification for heritability. One condition often assumed in twin studies is the equal environment assumption (EEA). The EEA, or the belief that twins experience the same environment conditions, allowed researchers to assume little variance for experiences that the twins may be exposed to. Several studies have found that this assumption was not violated in either monozygotic, identical, or dizygotic, fraternal twins.<sup>12,13</sup> However, other research questioned the methodology of those studies, and believed the support of EEA to be flawed.<sup>14</sup> Therefore affirming the EEA could create misleading interpretations of lack of influence of

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<sup>10</sup> Baker, L. A., Jacobsen, K., Raine, A., Lozano, D. I. & Bezdjian, S. (2007). Genetic and environmental bases of childhood antisocial behavior: A multi-informant twin study. *Journal of Abnormal Psychology* 116, 219-35.

<sup>11</sup> Baker, L. Raine, A., Liu, J. & Jacobsen, K. C. (2008). Genetic and environmental influences on reactive and proactive aggression in children. *Journal of Abnormal Child Psychology* 36, 1265-78.

<sup>12</sup> Derks, E. M., Dolan, C. V., & Boomsma, D. I. (2006). A test of the equal environment assumption (EEA) in multivariate twin studies. *Twin Research and Human Genetics*, 9(3), 403-411.

<sup>13</sup> Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1993). A test of the equal-environment assumption in twin studies of psychiatric illness. *Behavior genetics*, 23(1), 21-27.

<sup>14</sup> Richardson, K., & Norgate, S. (2005). The equal environments assumption of classical twin studies may not hold. *British Journal of Educational Psychology*, 75(3), 339-350.

environmental factors. A second distinction rarely presented in twin studies is the possibility of the interaction of genes and environment, rather than simply the presence of genes and the environment.<sup>15</sup> Without the consideration for an interaction between genes and the environment, heritability findings based on differences between monozygotic and dizygotic twins may misinterpret results by putting unjustified confidence in the genes themselves. This assumption, too, is flawed and may disrupt the foundation for validity of twin studies.

While there is significant evidence that supports the biological explanation of criminality and criminal justice involvement transfer from one generation to the next, there is also support for children learning and repeating the behavior that they mimic from their parents. Even babies are born prewired to imitate, and have shown they have the ability to learn behavior.

Psychologist Andy Meltzoff conducted series of experiments that confirmed the ability of babies to learn and repeat behavior that they had been exposed to.<sup>16,17</sup> Although children can be especially impressionable in their early years, the ability to learn and repeat behavior has no age limits.

Social Psychologist Albert Bandura emphasized this ability of people to model behavior through the observation of others. Social learning theory emphasizes observational learning as the means for demonstrating imitated behavior.<sup>18</sup> Bandura found this to be especially true for

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<sup>15</sup> Ibid.

<sup>16</sup> Meltzoff, A.N. (1988). Infant imitation after a 12-week delay: long-term memory for novel acts and multiple stimuli. *Dev Psych* 24, 470-76.

<sup>17</sup> Klein, P. J., and Meltzoff, A. N. (1999). Long-term memory, forgetting and deferred imitation in 12-month old infants. *Dev Sci* 2, 67-82.

<sup>18</sup> Bandura, A., & Walters, R. H. (1977). *Social learning theory*(Vol. 1). Englewood Cliffs, NJ: Prentice-hall.



people whom the observer admires or looks up to, or who has an authoritative position in the observer's life. This is likely to be the case for children witnessing a parent's behavior. If children witness criminal behavior or criminal justice involvement, such as the arrest or removal of a parent from a household to serve a sentence, social learning theory suggests that this modeling will influence the child to mimic the criminal behavior. Children who observe criminal justice system involvement by their parent, as well as the negative consequences such as removal from the home, or additional stress experienced by the family members, children should be less incentivized to mimic any behavior that lead to that outcome. Still, others suggest that if criminal justice involvement is what the child has been exposed to, it may be expected that the child continue that family tradition.<sup>19</sup> Without having exposure to alternative, non-criminal justice involved behaviors, that could potentially dissuade children from following in their parent's footsteps, children will likely continue to repeat behaviors that they have witnessed, whether it produces positive or negative outcomes. Children who are encouraged by their parents to engage in deviant behavior may be conditioned to do so. Operant conditioning, as explained by social psychologists, can use both positive and negative influences to shape one's behavior.<sup>20</sup> Using rewards, parents may create a positive association that encourages children to be involved in criminal activity. Children may also be dissuaded from pursuing an alternative path to criminality through the parents' use of punishments that deter any of those behaviors. Parents may actively

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<sup>19</sup> Butterfield, F. (2018). *In my father's house: A New View of How Crime Runs in the Family*. Knoopf; First Edition.

<sup>20</sup> Skinner, B. F. (1963). Operant behavior. *American psychologist*, 18(8), 503.

discourage their children's involvement in positive activities, or the child's pursuit of education, activities that may provide a trajectory away from system-involvement.

Even in the event where the behavior of the parent leads to poor outcomes, there may be an internal drive of the children to rationalize and justify the behavior with the outcome. When one's parent, whom a child sees as an authoritative figure and role model, engages in criminal behavior that has negative consequences for both the parent and the family, the child may seek to internally justify or overlook that disharmony. Psychologist Leon Festinger described this as cognitive dissonance, where there is an inconsistency between attitudes and behavior. This may lead a child to repeat a behavior of the parent, despite the negative outcomes they have already witnessed that will arise if they engage in the behavior.

Other social psychologists hypothesized that there may be other forces at play, such as how people reconcile beliefs and behaviors. Fritz Heider believed that dispositional attribution, assigning the cause of behavior to internal causes, such as personality, as the reasons for repeated behavior.<sup>21</sup> Children may inherit the traits that caused the parent to become involved in the criminal justice system.

On the other hand, Heider also described situational attribution as assigning behavior to external reasons outside of the person's control, such as specific events or situations. Edward E. Jones and Keith Davis developed correspondent inference theory that postulated that an individual looks primarily at the intentional behavior of others, which then draws a clear path from motive to action, which may help to explain a child's understanding of the parent's criminal

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<sup>21</sup> Malle, B. F. (2008). Fritz Heider's legacy: Celebrated insights, many of them misunderstood. *Social Psychology*, 39(3), 163-173.

behavior.<sup>22</sup> Later, the idea of one's own control over actions also influenced the literature around attribution theories.<sup>23</sup> This theory suggests how the transmission of criminal justice system involvement may be outside of the child's control given that they have been exposed to negative events, such as their parent's criminality/system-involvement. Similar to learned helplessness, children of system-involved parents may see themselves going down the same path because they are simply unable to achieve an alternative path.

Both the biological and learned perspectives provide valuable information to better understand this parent-child relationship, even if neither fully or conclusively explains it. A relatively new branch of genetics research may provide the best explanation of how system-involvement may be passed from one generation to the next. This branch called epigenetics draws from both a biological explanation and the environment that one is exposed to, in order to explain genes and genetic expression. Epigenetics has been studied for decades, although more recently has been redefined to understand the mechanisms of information that is not encoded in deoxyribonucleic acid (DNA) and how it is transmitted to the next generation.<sup>24</sup> Often referred to as the "software" for how DNA, the "hardware," is read, epigenetics explains factors such as the environment and lifestyle choices that result in how genes are expressed.<sup>25</sup> However, Caspi et al.

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<sup>22</sup> Jones, E. E., & Davis, K. E. (1965). From acts to dispositions the attribution process in person perception. In *Advances in experimental social psychology* (Vol. 2, pp. 219-266). Academic Press.

<sup>23</sup> Wortman, C. B., Panciera, L., Shusterman, L., & Hibscher, J. (1976). Attributions of causality and reactions to uncontrollable outcomes. *Journal of Experimental Social Psychology*, 12(3), 301-316.

<sup>24</sup> Felsenfeld, G. (2014). A brief history of epigenetics. *Cold Spring Harbor perspectives in biology*, 6(1), a018200.

<sup>25</sup> Vergin, J. (2018). Unlocking violent crime through epigenetics. *Deutsche Welle*.

(2002) found the interaction of the MAO-A gene, described earlier as one of the genes found to be common in violent offenders, and exposure to maltreatment to interact and predict antisocial and violent behavior. Children that may have inherited certain traits from their parents who were system-involved, may also be exposed to certain environmental factors that cause certain expressions of those genes to occur. Research shows that even trauma can be passed through genes. In one study, stress that was experienced by mothers during pregnancy was associated with epigenetic changes in their child.<sup>26</sup> Experiences that negatively impacted the parent may also negatively impact his/her child by the unique expression of certain genes that are passed down. Additionally, Ferguson described the complexity involved in the interaction of genes and environment, as it relates to one's propensity towards antisocial personality and behavior (ABP).<sup>27</sup> Between the 53 observations from 38 studies, the range of findings in ABP variance due to genetics was inconsistent, confirming that the genetic and environmental factors form a complicated explanation of adverse outcomes, including ABP. However, there are multiple ways that genes and environment interact and affect one's susceptibility towards criminality, and which may not always result in a different expression of the genes. Ottman found that there are multiple models of the gene and environment interaction.<sup>28</sup> The models vary based on the direction of cause, whether the gene influences the environmental "risk factor," or if the

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<sup>26</sup> Serpeloni, F., Radtke, K. M., Hecker, T., Sill, J., Vukojevic, V., Assis, S. G. D., ... & Nätt, D. (2019). Does Prenatal Stress Shape Postnatal Resilience?—An Epigenome-Wide Study on Violence and Mental Health in Humans. *Frontiers in genetics, 10*, 269.

<sup>27</sup> Ferguson, C. J. (2010). Genetic contributions to antisocial personality and behavior: A meta-analytic review from an evolutionary perspective. *The Journal of social psychology, 150*(2), 160-180.

<sup>28</sup> Ottman, R. (1996). Gene–environment interaction: definitions and study design. *Preventive medicine, 25*(6), 764-770.

environment directly impacts the gene. The gene and environment may also independently increase the risk of the negative outcome, and thus, when they are both present, there is an even greater increase in risk for the negative outcome. Without having one clear formula that completely explains the role both the genes and environment play, there is still uncertainty about the transmission of criminal justice involvement. Despite the uncertainty, the gene and environment interaction may still provide the best explanation of how criminal justice involvement is passed from one generation to the next.

While there is inconclusive evidence that explains the transmission of system-involvement from one generation to the next, one thing remains clear: there is a general understanding and acceptance that children who have system-involved parents show an increased susceptibility to becoming system-involved as well. While this susceptibility does not necessarily translate to a future of system-involvement, children with a system-involved parent, or parents, are not destined to repeat their parents actions, and may in fact go on to lead lives completely removed from the criminal justice system, it does present a challenging social dilemma that requires more attention. Many studies have not only identified that this subpopulation, children of criminal justice system-involved parents, are vulnerable to becoming system involved, but have also sought to identify other factors that may add more information to understanding the relationship.

### **Findings Specific To Intergenerational Transmission of Criminal Justice Involvement**

Many studies have sought to unpack the intergenerational transmission of criminal justice involvement through various analytical methods and sample populations. Criminal justice involvement can be interpreted rather broadly, but this chapter will look at four general parental

interactions with the criminal justice system that have shown to play a significant role in child outcomes. The system-involvement of the parent that will be considered in this chapter include: contact with police, arrest, conviction, and incarceration. The studies that are included in this analysis are grouped together by the parent's type of criminal justice involvement, and will be presented in ascending order of severity of involvement. Within each grouping, studies that analyze the effect of a parent's criminal justice involvement in his/her child's criminal justice involvement were included. There are many studies that identify the parent's criminal justice involvement and the range of outcomes it has on children. For this chapter, only studies that used outcomes related to the child's criminal justice involvement were included. Most of the child outcomes were measured once the child reached adulthood. However, there are a couple of studies that were included even though they looked at juvenile delinquency as an outcome of interest, rather than adult criminal justice involvement due to the relatively small number of studies that examined the transmission of criminal justice involvement.

Although the literature is not extensive in any of the four groups, this chapter will provide a review of what contributions have been made, and how the four parental variables impact children in regards to the children's interaction with the criminal justice system. The first group of studies analyzed the effect parent contact with police had on children.

#### *Parent Contact with Police*

Only one study used the parent's contact with police as a predictor of the child's criminal justice involvement. Using data from the Pittsburgh Youth Study, Farrington et al. (2001) conducted two main analyses to quantify the relationship between a parent's contact with police and their child's

contact with police. The Pittsburgh Youth Study tracked offending and antisocial behavior in a prospective longitudinal survey of first, fourth, and seventh grade boys who lived in Pittsburgh. Survey data from the three cohorts of boys, grouped by grade level, were collected via interviews with the subject, a relative of the boy, most often the mother, and the boy's teacher. Assessments were conducted every six months for three years, and information about contact with police was verified by juvenile court records. In this study, only the fourth and seventh grade cohorts were included.

The authors used a non-traditional definition of "arrest" whether or not freedom of movement was restricted, the usual definition of "arrest."<sup>29</sup> Arrest in this study was defined as any contact with law enforcement as an offender, at any point in one's life, for any reason apart from minor traffic violations. 932 youth met this criterion.

Analyzing data up through age 18 for the oldest sample of boys, and up to an average age of 16.6 for the middle sample, the likelihood of a boy's arrest was compared to the arrests of his family members. Odds ratios of arrests were calculated for the boys and each family member including sisters, brothers, father, mother, uncles, aunts, grandfathers, and grandmothers. The parent-child relationship, the results of the boy and father relationship yielded an odds ratio of 4.9 for arrests, while the boy and mother relationship yielded an odds ratio of 3.9 for arrests, both significant. The odds ratios were interpreted as the boys who had a father who had been arrested, or had contact with police, were 4.9 times more likely to also be "arrested" than boys whose father had not been "arrested." The odds ratio for child "arrest" was greatest for father's "arrest." Odds ratio relative to mother's arrest was the second largest, 3.9, indicating that boys who had a

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<sup>29</sup> Legal Information Institute (LII) (2019). <https://www.law.cornell.edu/wex/arrest>.

mother who had been arrested were 3.9 times more likely to be arrested than their peers. Both the father's and the mother's contact with police had a significant impact on their son's likelihood of being arrested, but the criminal justice system involvement of the father appears to have a greater impact on their sons. Siblings' arrest risk showed the same parental relationship. Results were significant for the relationships between brother and father (OR=2.7), brother and mother (OR=2.2), sister and father (OR=2.9), and sister and mother (OR=2.9). Although not the focus of the study, the sibling-parent results provide insight into the impact daughters face by their parent's criminal justice involvement. These results indicated that same-sex relationships had more influence than different-sex relationships, which made boys more vulnerable to arrest if their father had been arrested and girls more vulnerable when their mother has been arrested.

A second analysis was conducted and included in the study, separate odds ratios for biological- and step-fathers. The odds ratios relative to biological and step-father arrests were 4.8 and 5.7, respectively, which indicated that the step-fathers' arrest had a greater influence on the son's likelihood of arrest than did biological fathers' arrest. While the results from both analyses are significant, there are limitations to how they should be interpreted.

The authors were careful to include information about relatives and their arrests only if the relative was present in the household, so as to optimize accuracy with arrest information. This requirement increases the likelihood that the subjects of the study had contact and interacted with the relatives who were involved in the criminal justice system. What is unknown based on the data, is how much contact there was between the two parties, and for what duration, before and after, the relative had contact with police. Additionally, the results from the first analysis do not indicate whether relatives, apart from the fathers, were biologically related or not, making it



impossible to distinguish a genetic variable in the intergenerational familial transfer of contact with police between the mother and the boy, as well as between the sibling and the parents.

In the second analysis, the influence of step-fathers on the subject may be overestimated. The high odds ratio may be an indication of the already disruptive home life the subject was experiencing by having a biological father removed from the house, and then having an additional father-figure brought into the house. The sons who were included in the odds ratio analysis for biological fathers may have a slightly more stable home life compared to the sons who were included in the analysis with their step-fathers. Other research has shown that divorce or death of a parent had a significant impact on children, which may also contribute to the increased instability those sons faced.<sup>30</sup> Still, there is too little data from this study to make any broader conclusions about causality. This was also true for the results of the odds ratios with the subjects' brothers and sisters in relation to their father. However, on the surface, these results point to step-fathers having a greater influence in the son's criminal justice involvement.

In both analyses, the length of time for data collection was also a limitation of the study. Boys were followed only until an average age of 18 for one cohort, and until an average age of 16.6 for the second cohort. Although 18 is considered by some to be in the "peak" criminality age range, it does not provide a complete picture as to the boys' lifetime of police contact.<sup>31</sup> This also requires careful interpretation of the analyses so that the strength of the relationships are not

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<sup>30</sup> Juby, H., & Farrington, D. P. (2001). Disentangling the link between disrupted families and delinquency: Sociodemography, ethnicity and risk behaviours. *British Journal of Criminology*, 41(1), 22-40.

<sup>31</sup> Encyclopedia of Crime and Justice. (2002). *Age and Crime*. The Gale Group, Inc. <https://www.encyclopedia.com/law/legal-and-political-magazines/age-and-crime>

overestimated. The analyses were helpful for determining juvenile delinquency up until the mid-to late-teen years; however, beyond that, no interpretations should be drawn.

While this study had inherent limitations due to the lack of information about the family's exact biological component, as well as the extent and quality of the familial relationships, it is the only study that examined police contact without additional criminal justice involvement, such as arrest or conviction. Police contact represented the lowest magnitude on the criminal justice involvement scale, but it still provided pertinent results regarding low-level involvement that was transferred from one generation to the next.

#### *Parent Arrest*

Similar to studies that analyzed contact with police, only one study met the criteria for inclusion in its analysis of the effect parental arrest, the traditional definition, had on a child's future criminal justice involvement. Junger et al. (2013) accessed data from families in the Netherlands who had a child born in 2006. The family data was collected by Dutch police in an electronic database. Information about parents', grandparents', and siblings' arrests, that did not include misdemeanors or traffic violations, was collected and analyzed regarding the concentration of arrests and offending within families.

The authors used bivariate odds ratios that produced results from the three generations that found a grandparent's arrest increased the mother's likelihood of arrest by over three times compared to that of a mother when the grandparent did not experience arrest (OR= 3.3). Similarly, a grandparent's arrest also increased the likelihood of the father's arrest (OR=2.9 for the grandfather and OR=3.9 for the grandmother). The results also showed that the odds of

arrests of the sibling of the child born in 2006 were likely to increase with the arrest of the mother (OR=3.9), but not for any other relative. The relationship of arrests across three generations indicated that a parent's involvement in the criminal justice system, by arrests, did have a significant impact in the lives of children. While only the mother's arrest had a significant impact on the sibling's arrest, both the grandmother's and grandfather's arrest impacted the likelihood of the mother's and father's arrest. The study indicated that the age of the siblings was an important factor to the child's arrest, which provided insight into why only the mother's arrest played a significant role in the likelihood of the sibling's arrest. Given that the study sample was based on children born in 2006 and their families, there is a strong likelihood that their siblings were around the same age of the child when the data was collected. Since the child was relatively young at the time of the data collection, the siblings were also likely to be young. If this was the case, the results indicated that a mother's arrest had a significant and more immediate impact on a child, particularly when the child was young and thus more likely to be dependent on a maternal figure. However, when the father was arrested, the effect on the sibling's likelihood of future arrest was not significant, which was an indication that the mother was likely still present in the sibling's life and that the effect may be seen later on in life. If that was the case, it would be expected that if the study extended to the time when the child and siblings reached adulthood, the father's arrest would also have a significant effect on the sibling's likelihood of arrest, which would confirm the results between grandparents and parents.

Junger et al. produced significant and meaningful results in the relationship between one generation's arrest and the next generation's arrest, but there were still limitations for conclusive interpretations of the data. As was touched on earlier, the ages of the siblings were not included,

which did not allow for a complete picture of the siblings arrest profile. If the siblings were fairly young, they may have had a significant likelihood of getting arrested as they grow older and reach the age range where arrest is more prevalent. This may have resulted in an underestimation of the odds of a sibling being arrested when one of their parents was also arrested. The odds ratios between grandparents and parents offered a more complete picture of each generation's criminal justice involvement. Another indication from the results found that the larger odds associated with a mother's arrest indicated that children are more susceptible to being affected by the mother's arrest than by the father's. This suggested that mothers play a more crucial role in the stability of a child's life, at least early on. However, given the grandparents' and parents' results, it was likely that the presence of the mother in the child's life when the father was arrested only delayed, rather than eliminated, the likelihood of arrest.

### *Parent Conviction*

The third grouping of studies used convictions as the marker of criminal justice involvement for the parent. A conviction represented more severe criminal justice involvement than contact with police without arrest, and arrest. When a person is convicted, the individual has been found guilty of the crime that he/she has been charged with.<sup>32</sup> As a result of this more intense involvement of the parent, children may experience a different impact in their criminal justice involvement.

In their 2008 study, Van de Rakt, Nieuwbeerta, and Dirk de Graaf identified the transmission of convictions from fathers to their children with data from the Criminal Career and

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<sup>32</sup> Legal Information Institute. (2019). Cornell Law School. <https://www.law.cornell.edu/wex/conviction>.

Life Course Study (CCLS). The CCLS provided a large dataset that was established by the Netherlands' Institute for the Study of Crime and Law Enforcement (NSCR). Within the dataset, criminal careers of 4,271 men, considered a representative sample from offenders in the Netherlands in 1977, were mapped using criminal records information from the Public Prosecutor's Office, as well as population data. Non-criminal law offenses were excluded from the data, and juvenile offenses were only included if they resulted in a conviction. Data was collected for these men and their children from 1977 until 2003. Van de Rakt, Nieuwbeerta, and Dirk de Graaf created a matched control group to compare with the convicted men from the CCLS data. The control group consisted of 717 men who had 1,133 children. The total number of children included in the CCLS dataset was 6,952.

The data from the case and control groups were used in a semi-parametric group-based model, which created criminal trajectories of the fathers and categorized them into five groups based on the shape of the trajectory. For all of the children included in the dataset, convictions over a life course (from 1977 until 2003) were analyzed first by creating a person-period file. The file consisted of the number of convictions by year for each subject, in order to account for all of the years a child was eligible for a criminal conviction. Children's conviction trajectories were then modeled with this data. Three groups: boys, girls, and children, were analyzed. The boys' trajectory was larger than that of girls' at every year. Additionally, the boys' trajectory saw more peaks, compared to the steady rate of girls' convictions, with the largest peak occurring during the late teens and early twenties.

The authors sought to determine how similar the trajectories of the children and fathers were, and therefore determine if the patterns of convictions were similar from one generation to

another, and thus “passed down.” Data was analyzed both prospectively and retrospectively. The prospective analysis looked at the number of convictions the children had in relation to the fathers’ trajectory group. The children were divided into four groups, by number of convictions. Using Poisson regression analysis, the results showed that fathers with no convictions most often had children who also did not have any convictions. Additionally, the control group of fathers had the lowest likelihood of having children who were convicted more than five times. Fathers who committed one or very few delinquent acts had fewer children with zero convictions, but more children who were convicted once and two to five times, compared to the control fathers. Fathers who committed many delinquent acts were more likely to have children with more than five convictions, even compared to the more persistent trajectory group. Across all father groups, girls were more likely to have zero convictions compare to boys. However, it is apparent from the results that for boys, girls, and children, the more persistent the father was at offending, the higher the likelihood that the child would be convicted as well, and with greater frequency.

The second prospective analysis estimated a hierarchical Poisson regression model with age, age squared, and age cubed to predict the probability of criminal conviction for the children between ages 12 and 39. Four curves were plotted based on the fathers grouping, with the exception of the highest offender group. The rest of the father groups were plotted, which resulted in similar curve patterns for each group, albeit with varying heights. All four of the sons’ trajectory curves were similar in shape, with a major peak in the late-teens to early-twenties, followed by a smaller peak in the late-thirties. The prediction of convictions was lowest for boys of the control fathers, and increased with the intensity of the father’s offending.

The prediction of convictions for girls showed more variation by group. The girls from the control fathers had the lowest likelihood of being convicted throughout their lifetime. The girls whose father had very few offenses were only slightly more likely to be convicted than the control fathers' girls, but the fathers who had very few offenses that primarily occurred during adolescence showed a gradual increase in probability, with a peak around the early thirties, and then a gradual decline thereafter. The girls of fathers who had many delinquent acts started at a higher probability of conviction, then increased more sharply, with a peak in the early twenties, and then declined slightly in the early- and mid-thirties before another increase in the late-thirties.

The retrospective analysis used a semi-parametric group-based model, with a zero-inflated Poisson estimate of group-based trajectory, which was expected to follow a cubic function of age. Based on the results, children were grouped into similar behavioral trajectories. The groups of children were compared within the groups of fathers. Similar to the results of the prospective analysis that compared children, grouped by the number of their convictions within each father group, the control fathers had the largest proportion of children with no delinquencies. The total percentage of non delinquent children decreased as the severity of the conviction career of the father increased. This pattern held true for sons and daughters as well.

These results suggested a dose-response relationship between the convictions of fathers and the convictions of their children. The more convictions the father had acquired over his lifetime, the more likely that children had a relatively large number of convictions as well. Children from the "most criminal" fathers, the fathers with the most convictions, initiated their criminal careers earlier, in addition to having more substantial criminal careers. This suggests

that children with a father who has been convicted are more vulnerable to being convicted compared to children whose father had no convictions. Additionally, the more persistent the father's conviction career, the more extensive a criminal career the child is likely to have. This finding was especially true for boys who were more susceptible to a higher number of convictions than daughters. However, the authors caution that with public data there may be an underestimation of delinquent acts, so the number of convictions may only represent a portion of the actual criminal career.

Besemer and Farrington (2012) also used group-based trajectories to understand if fathers who offended produced children who offended, and if the fathers who offended more frequently produced children who were also more likely to be frequent offenders. This study used data from the Cambridge Study in Delinquent Development (CSDD), a prospective longitudinal survey from 411 males who were contacted in 1961-1962 when they were 8-9 years old. The subjects were mostly white, middle-class, and lived in a geographically similar location in London. Interviews with the subjects took place periodically over the span of 40 years. Teachers and parents were also interviewed up until the boys were 14. Information about the males (second generation, 'G2'), their parents' (first generation, 'G1'), siblings', and female partners' offenses and convictions were collected from the Criminal Record Office (CRO), the National Identification Service (NIS), and the Police National Computer (PNC). Minor offenses and crimes were not included. From 2004 to 2007, the CSDD interviewed the subjects' children (third generation, 'G3'), who were born between 1970 and 1984. However, in this particular study, only the police records were used in the analysis. Additionally, only information about the study males, their fathers, and their siblings were included.



The police reports used convictions as the measure of criminality for both the study subjects and their father. Only convictions between the 12<sup>th</sup> and 40<sup>th</sup> birthday were included in this study. For the fathers, a zero-inflated Poisson model was used along with the Bayesian information criterion (BIC), which identified three trajectory groups: non-offending fathers who had no convictions, low chronic or sporadic offenders who had on average 1.5 convictions, and chronic offenders who had on average 6.5 convictions, or relatively many convictions with a peak in their late teens and early twenties.

In the first model, the difference in conviction rates of children were compared between the fathers' trajectory groups. There were significant differences between the non-offender and low chronics, and between the non-offenders and chronics, with children of sporadic and chronic offenders having a higher conviction rate compared to children of non-offenders. The difference between children of low chronics and chronics was not significant, which suggested evidence of a transmission of offending when children who have been exposed to offending through their father were compared to children who had not been exposed to offending. However, there were no significant differences in children's outcomes when the intensity or magnitude of offending exposure by the father changed, which suggested that there was not a dose-response relationship with father and child offending.

Conviction trajectories of children were estimated for both the sons and daughters. Five trajectory groups were identified for the sons, and they included: non-offenders, with no convictions; low desisters, with an average of two convictions in their teens and early twenties; low chronic offenders, who had an average of five convictions over their life-course; high desisters, who had an average of 11 convictions during their teens and early twenties; and

chronic offenders, who had an average of 18 convictions over their life-course, with a peak in offending during their late teens and early twenties. For daughters, a three-group model was estimated using the following groups: non-offenders, with no convictions; low desisting offenders, with an average of two convictions; and chronic offenders, with an average of seven convictions, and peak in convictions during their late-teens and early-twenties.

The father and son trajectories were compared and adjusted standardized residuals (ASR) were calculated. The results showed that non-offending fathers had a higher proportion of non-offending sons, while chronic offending fathers had a high proportion of high desister and chronic offender sons. Not all of the other ASRs were significant, which indicated that the different types of offending of fathers did not predict the different types of offending of sons. However, the overall association between the two trajectories was significant, which indicated that the two groups of trajectories were similar.

For fathers and daughters, the overall association was significant. Similar to the results for sons, the non-offending fathers had a higher proportion of non-offending daughters. The low offending and chronic offending fathers had more offending daughters, but the specific offending trajectories of fathers did not predict similar specific offending trajectories of daughters. One surprising result showed that the chronic offending fathers predicted low desister daughters more so than sporadic offending fathers.

While the results of this study confirmed the intergenerational transmission of offending, it did not indicate that fathers who were more frequent offenders produced more frequent offending sons or daughters. Still, the study only used official data, which may have underrepresented the

total amount of offending of both fathers and children, which limited the ability to draw major conclusions from these results.

Van de Rakt et al. (2010) also analyzed fathers' criminal careers from the Career and Life Course Study (CCLS) dataset. The representative sample of the offending population included 4,271 fathers and 6,921 children. Only children who were 12 years and older in 2003 were included. In this study, a number of additional variables were considered in the analysis, which included the number of convictions of the father after the child's 12<sup>th</sup> birthday, whether the child experienced parental divorce, and whether the child's father died between 1977 and 2003.

Van de Rakt et al. analyzed four hierarchical logistic regression models to dissect the intergenerational transmission of convictions between fathers and their children. All of the models controlled for the following variables: sex, parental divorce, father's death, and the number of children in the family. These variables were controlled for due to the evidence that each independently contributed to a child's conviction.

In the first model, the key parameter was the effect of the total number of the father's criminal convictions. The results showed the key parameter to be statistically significant, which predicted the child's chance of being convicted. The authors took the total number of fathers' convictions to be an indicator of self-control, which, inferred from the results, was then passed down to children.

The second model sought to determine if the timing of a father's conviction impacted the child's likelihood of being convicted with the inclusion of a "learning" effect and "decay" effect. Both effects produced results that were positive and significant. The learning effect was interpreted as the more time that has passed since the father was last convicted, the greater the

decrease in the likelihood of the child's conviction. The decay effect found that it took five years after the initial conviction to see the rise in the child's chance of conviction decrease by half.

The third model included all of the elements of the second model as well as a "reinforcement" effect and "cumulative learning" effect. The reinforcement effect was positive and significant, which indicated that when a father was convicted more frequently, there was a slower rate of decrease for a child's chance of conviction. In this model, after the father's fifth conviction, it took six years for the rise in a child's chance of conviction to decrease by half. The cumulative learning effect was insignificant in the model, which would have found that when a father was convicted a second or third time, the child's chance of conviction did not increase.

In the fourth model the learning and decay effects for adolescents and subjects with divorced parents were estimated. The learning effect for kids with divorced parents was highly significant, which indicated that when a child's parents were divorced, the chance that the child was convicted in the year the father was convicted increased to a smaller extent compared to a child whose parents were married. The learning effect for adolescents was significant, which showed that the learning effect was larger for adolescents than for adults. The decay effect variable for children of divorced parents was insignificant, meaning that there was no significant difference in decay between children with divorced parents and children with married parents. The adolescent decay effect was significant, which indicated that the rate of decay was faster when fathers offended when the child was an adolescent than as an adult.

Based on the results of the four models, the researchers concluded that the likelihood of children being convicted was impacted both by their fathers' timing of convictions and the number of convictions, which were also moderated by parental divorce and the child's age.

However, this study used official data, limiting the number of variables that were included in the models.

Farrington, Coid, and Murray (2009) used data from the Cambridge Study in Delinquent Development (CSDD), the study of the 411 males in London and their families who were followed for 40 years. The authors calculated the odds ratios of convictions by gender and generation (G1, G2, and G3). The odds ratio for subject males and their fathers was 3.5 (CI 2.2-5.5), finding that of the G2 males who had convicted fathers, 63% were convicted, while 33% of G2 males with a father who had not been convicted, were convicted. There was a significant relationship between G1 females and G2 males (OR 2.3, CI 1.3-4.2), with 38.4 % of G2 males being convicted with a non-convicted mother, while 59.3% of G2 boys with a convicted mother were convicted. The second generation's convictions also showed to have an impact on the third generation. For G3 males (OR 3.2, CI 1.9-5.6), 37.2% of those with a convicted father were also convicted. Only 15.5% of males without a convicted father were themselves convicted. However, the results for G3 females were not significant, but they were substantial (OR 2.0, CI 0.7-5.5), 4.4% who had a father who was not convicted were convicted, while 8.5% with a convicted father were convicted.

This study also analyzed the mediating variables that could influence the strength of the intergenerational relationship between the first and second generations. This second analysis introduced four categories of risk factors: parent conviction, socio-economics status, family dynamics, and individual characteristics that helped predict the boys likelihood of conviction. The results showed that having a parent who had been convicted before the boy's 10<sup>th</sup> birthday increased the likelihood of conviction. If the father had been convicted, the boy's likelihood of

being convicted was significant (OR 3.1, CI 1.9-5.0). If the mother was convicted before the boy's 10<sup>th</sup> birthday, his likelihood of being convicted was also significant (OR 3.8, CI 1.8-7.9).

Socio-economic factors that showed to be significant predictors of the boy's likelihood of offending included: low family income, large family size, poor housing, and delinquency in school. Low social class was not a significant predictor of boys later offending. The strongest predictor out of the significant risk factors was large family size, which predicted 61.2% of boys in large families would be convicted while 35.0% of boys who were not in a large family would be convicted.

The family dynamic category had a large number of significant risk factors. Young mother, parental conflict, disrupted family, harsh discipline, poor supervision, low parental interest in education, and depressed mother were all variables that, when present in the boys life at 10 years old, were predictive of future conviction. The only variable that was not a significant predictor was depressed father. Individual characteristics that were present when the boy was 10 were also very predictive of their future convictions. Risk factors such as daring, poor concentration, high impulsivity, low non-verbal IQ, low verbal IQ, low attainment, and unpopular were all statistically significant. Individual characteristics that were not significant were nervous-withdrawn, few friends, high neuroticism, and high extraversion.

The third analysis used logistic regressions to predict the effect of parent convictions on conviction of G2 males. The number of convicted parents with the risk factors from the second analysis, the authors used the Wald statistic to determine the influence of that parent convictions had on the boy's convictions when other factors were also included in the equation. The first equation with just the parent convictions produced statistically significant results, with a Wald

statistic of 26.08 and a p-value of 0.0001, which indicated that a parent's conviction strongly predicted the son's conviction. However, when family and socio-economic risk factors were included in the second equation, the Wald statistic for parent convictions decreased to 8.00 with a p-value of 0.005. The third equation added individual risk factors to the variables in the second equation. In this equation, the Wald statistic was 5.28 with a p-value of 0.022.

The results of the logistic regressions suggested that the conviction of the parents was a significant predictor of the son's conviction, particularly when the model did not include any other variables. However, when more variables that were shown to be significant predictors of the boys future conviction based on the second analysis were added, the parent's conviction became a less significant predictor. This suggested that there were mediating variables that explained some of the relationship between parent convictions and child convictions.

In addition the relationship between G1 and G2 subjects, the study also determined the odds ratios of risk factors of G3 subjects and then conducted another logistic regression to determine if they also, explained some of the relationship between the convictions of G2 males and G3 males and females.

Family and socio-economic risk factors were identified for G3, with odds ratios calculated for each risk factor by gender. For both males and females, the most important family risk factor was if they had parents that divorced within the last five years (OR 3.3, CI 1.4-7.9, and OR 2.5, CI 0.8-7.7, respectively). For males whose parents had divorced within the last five years, 50% were predicted to have a conviction compared to 23.4% of males whose parents had not divorced within the last five years. 12.8% of females who had parents divorced within the last five years were predicted to be convicted, while 5.5% without divorced parents were

predicted to be convicted. The most important socio-economic risk factor for males was if he was not a homeowner (OR 3.4, CI 1.9-5.9). Of the males who were not a homeowner, 41.2% were predicted to be convicted, while 17.2% of males who were a homeowner were predicted to be convicted. For females, being unemployed was the most important socio-economic risk factor (OR 5.5, CI 2.0-15.8). Of the G3 females who were unemployed, 20.6% were predicted to be convicted compared to 4.5% of females who were not unemployed.

In the final analysis, two logistic regressions were run, one for G3 males and the other for G3 females. For each regression, the first equation included just the conviction of the G2 male. The second equation for both regressions added the family and socio-economic factors to the first equation to determine if the risk factors served as mediating variables. For the G3 males, the first equation of the regression produced a statistically significant result for the conviction of G2 males (Wald statistic 17.83, p-value 0.0001). When the risk factors were included in the second equation, the Wald statistic dropped in value and significance (Wald 11.13, p-value 0.0009), which indicated that the socio-economic risk factors explained some of the relationship between the G2 convictions and G3 males conviction (the family risk factors were not significant). The results of the G3 female logistic regression did not produce significant results in the first equation. The second equation only indicated that the socio-economic factors were significant (Wald statistic 5.23, p-value 0.022), but no other variables were significant.

This study provided useful information that confirmed that there was an intergenerational transmission of convictions. Additionally, the inclusion of risk factors in the regression analysis, it was apparent that there were mediating variables that explained some of the transfer of criminal behavior from one generation to the next, which implied that the reduction of risk



factors children face could reduce their likelihood of being convicted. However, this study grouped the risk factors into a score that was included in the regression analyses, making it difficult to determine which factors specifically contributed to the child's likelihood of conviction. This study also lacked consistency for data collection across generations, which may have affected the results.

A 2009 study by Hjalmarsson and Lindquist used crime records for fathers and their children from the Stockholm Birth Cohort Study (SBC) in the relationship between the father's sentencing and the child's likelihood of conviction. The SBC was comprised of a dataset from the Stockholm Metropolitan Study (SMS) and The Swedish Work and Mortality Database (WMD), which combined surveys and administrative records. Over 15,000 Swedish citizens born in 1953 and their fathers were included in the SBC dataset population.

In the first analysis, the authors looked at the relationship between the father's sentencing and the child's conviction at the extensive margin. Odds ratios were calculated that used the father's sentencing categories and the child's conviction categories. The father's sentencing produced five groups: any sentence, probation sentence, prison sentence, drunk and dangerous driving sentence, and exempt sentence. Children were categorized by the type of conviction they received, which included: any crime, violent, steal, fraud, vandalism, traffic, narcotic, and other.

A total of 40 odds ratios were calculated each for sons, daughters, and for an interaction variable of the father and daughter. For the sons' odds ratios, 35 out of the 40 were statistically significant, while all of the odds ratios were significant for daughters, and only seven were significant for the interaction variable. The interaction variable indicated that in those seven of the 40 regressions, the father-daughter relationship was significantly different than the father-son

relationship. Based on the results for sons, the odds ratio of 2.06 suggested that sons with a father who had any sentence were 2.06 times more likely to have a conviction (of any crime) than their peers who did not have a father with a sentence. For daughters, the relationship between their conviction of any type and their father's sentences were not significantly different than the relationship between sons and fathers.

A second analysis calculated the incidence rate ratios for the relationship between fathers and children at the intensive margin to determine if the number of sentences had an effect on the number of children's convictions. Again, 35 of the 40 odds ratios were significant for sons, 40 were significant for daughters, and only four were significant for the interaction of fathers and daughters. This suggested that for each additional sentence of the father, both sons and daughters likelihood of being convicted was impacted. Sons were 32% more likely to be convicted of any crime with each additional sentence of their father (OR 1.324). Again, the daughter-father relationship was not significantly different than that of sons and fathers.

To understand if the fathers' sentences had an impact early in the child's life, odds ratios were also calculated for the children's juvenile delinquency, grouped into two age ranges. Each type of juvenile offense was significantly impacted by the father's sentencing for both sons and daughters for each age range (ages 7-2 and 13-19). The results indicated that for children ages 13-19, the relationships of their juvenile delinquency with the fathers' sentencing were similar to their relationships during adulthood with convictions. Therefore, a child's criminal justice involvement was similar to their juvenile system involvement when they were younger.

The next stage of determining the intergenerational transmission was through a step-wise regression of the son's or daughter's criminality on father criminality, which controlled for

household and neighborhood. Other controls were included in the regression including proxies for socio-economic status, ability, stability of the household, household social support, and household attitudes. The results of the regression analysis for sons showed that the inclusion of the control variables in the analysis decreased the odds ratio with each additional proxy that was added. However, even with all of the proxies included the odds ratio for the extensive margin for son's conviction based on father's sentences was significant at 1.288. This was interpreted as sons who had a father with a sentence were 1.288 times more likely to be convicted than peers without a father with a sentence. Similarly, the step-wise regression for daughters decreased in the odds ratio as more proxies were included. The final equation with all of the proxies included produced an odds ratio of 1.570, which was significant. Daughters who had a father with a sentence were 1.570 times more likely to be convicted than daughters who did not have a father with a sentence.

The results of the step-wise regression for the intensive margin for sons produced results similar to the extensive margin regressions. The sons' regression that included all of the proxy variables showed a decrease in odds ratio as well as a decrease in significance. The final odds ratio was 1.059, but it was still significant with a p-value of 0.05. For daughters, the all-inclusive equation was still significant. This suggested that for sons, the dose-response relationship between fathers sentences and sons convictions was explained by other variables as well.

The authors also included step-wise regressions for both the intensive and extensive margins for sons by conviction type. In five of the six conviction types at the extensive margins, the odds ratios decreased and were no longer significant when the proxies were included. At the intensive margins, all six of the conviction types saw a decrease in their odds ratio and a

transition from a significant result, to a result that was not significant when all of the proxies were included in the analysis. These results indicated that the proxies explained more of the sons likelihood of conviction than the fathers sentences.

One last analysis used the quality of the father-child relationship as a predictor of the child's conviction as a juvenile. The authors used logistic regression analysis that produced odds ratios that indicated that children (both sons and daughters) who had a closer relationship with their father were more likely to be convicted as juveniles.

In addition to the analyses that sought to understand the relationship between parents and children, the study also attempted to disentangle the nature-nurture debate. Two analyses were conducted to determine if there was a genetic component to criminal justice involvement. The first analysis looked at adoptees compared to biological children. There were 258 adoptees included in the SBC cohort, which allowed the authors to compare their adopted fathers influence on their likelihood of conviction to children with biological fathers. Based on the results that were produced, the authors found weak evidence that biological traits were responsible for the son's convictions.

The second analysis used the timing of the father's sentences to determine if that caused an effect on the child's conviction. Fathers were grouped into three categories based on when they received their sentence and compared that to when the child was convicted (as a juvenile or as an adult). The odds ratios for the group of fathers who committed their crimes later in life were the largest and indicated that timing of the father's sentence mattered. This suggested that crime was not genetic, but was learned behavior. To add onto this inference, the study conducted extensive margin regressions and found that when the father had an additional sentence, both sons and

daughters had a greater chance of an adult record (OR 1.421 and OR 1.461, respectively). However, each additional prison sentence of the father decreased the sons and daughters likelihood of an adult record (OR 0.719 and OR 0.711, respectively). This suggested that the removal of the father from the home, as a result of a prison sentence, may have been a positive adjustment for children whose father would otherwise be a negative influence on their criminal behavior. However, the analysis did not provide chronological information about when the fathers received their sentences, and therefore, at what point they had been removed from their child's home and for how long.

This paper provided insight into the intergenerational transmission of sentences of the father to convictions of their children, both for sons and daughters. However, clearly there were other socio-economic and household variables that contributed to explaining the relationship. In the analyses that were performed, the factors within those risk categories were not specified, making it difficult to pinpoint exactly which variables made children more vulnerable to convictions. Based off of the genetic analyses, it appeared that the role of the father in the intergenerational transmission of conviction was based on him being a role model, and therefore the children mimicked his behavior rather than inherited the genes to produce that behavior.

Multiple Swedish population registers were utilized by Frisell, Lichtenstein, and Långström who sought to understand the relationship between violent offenses of family members, through crime data from over 12.5 million individuals over a time span from January 1973 to December 2004. The authors used a nested case-control model that compared individuals who had committed a violent crime to five controls (matched on age, sex, and birth country). Subjects who had a relative who was convicted of a violent crime were considered “exposed.”

A logistic regression with a robust sandwich estimator was used to analyze the difference in exposure between cases and controls. The results produced odds ratios for various family members. Apart from full siblings, the highest familial risk of all of the relatives was found between parents and children. For parents and biological children, the risk of the child being a violent offender was significant (OR 3.5, CI 3.5-3.6) when the biological parent was also a violent offender. For adopted children, there was still a higher risk compared to controls who did not have a violent offending adopted parent, but it was less than the biological parent's influence (OR 1.5, CI 1.2-1.9). The analysis also included female-specific relationships, such as the mother-daughter influence, which produced a significant risk (OR 6.3, CI 5.7-6.9) for daughters who had a mother who had a violent offense. These odds ratios presented evidence for intergenerational transmission in the parent-child relationship, particularly for female relationships. This suggested that there may be a genetic and environmental effect, but based on these analyses, it was difficult to distinguish. The study also included the socioeconomic position for each family. The results found that the higher the socioeconomic status of the family, the higher the risk of conviction for the family members. The authors believed this to be explained by the comparatively imbalanced crime rates between low socioeconomic positioned families and high socioeconomic positioned families. High socioeconomic families had significantly lower crime rates than families with low socioeconomic status, and the family factors for violent convictions had more weight in the explanation for intergenerational transmission.

The results of the study indicated that there were familial risks for violent crime convictions, particularly for parent-child relations. Not only was this true for biological children, but it was also shown in adopted children as well. This indicated that there was an environmental

effect for the transmission of criminal convictions within families. This did not exclude the possibility of a genetic effect as well, however. Additionally, the study results suggested that there were factors that can modify the intergenerational relationship.

Besemer, Axelsson, and Sarnecki (2016) conducted a study of intergenerational transmission of criminal justice system involvement that used the Stockholm Life Course Project (SLCP). The authors were interested in the transmission of convictions, specifically in same-gender relationships. They were also interested in the criminal trajectories of fathers compared to trajectories of their children. The SLCP used criminal administrative data from individuals born between 1941 and 1954, who were sent to various treatment programs for their offenses. Data was also collected from the control group as well as the subjects and control groups parents and children.

The authors first compared father-son relationships to father-daughter relationships. For sons who had a father with a conviction, the son had an odds ratio of 1.9, or were 1.9 times more likely to have a conviction compared to sons whose father had no convictions (OR=1.9, 95% CI 1.4-2.4). This relationship was significantly different compared to the father-daughter relationships. Daughters who had a father with a conviction were 3.5 times more likely to be convicted than daughters without a convicted father (OR=3.5, 95% CI 2.4-5.1). The authors then looked at mother-son and mother-daughter relationships, although the odds ratios were not significantly different. Sons were 2.7 times more likely to have a conviction if the mother also had a conviction. For daughters, they were 3.2 times more likely to be convicted if the mother had a conviction. These results suggested that the transmission of convictions was stronger for daughters than it was for sons. The authors also compared mother-son to father-son relationships

and found that there was no significant difference, which was what they also found for mother-daughter and father-daughter relationships.

The authors also used trajectory analysis to compare conviction trajectories of fathers to their children. Using the zero-inflated Poisson model and Bayesian information criterion (BIC), the model found five groups, one of which was a non-offender group. The other offending groups consisted of low rate offenders, desisters, late starting offenders, and high persisters. The results showed that children of fathers from any of the four offending trajectories were more likely to have a conviction compared to children of fathers from the non-offending trajectory. Finally, the authors found that the conviction trajectories of the fathers did not predict the conviction of the sons.

### *Parent Incarceration*

The final grouping, which represented the highest level of criminal justice system involvement, included a collection of studies where the parent had been incarcerated. This was a more severe level of criminal justice involvement of individuals who were not only convicted of a crime, but were sentenced to serve time as punishment for their crime. These studies included parents who had been incarcerated in jail as well as parents who had been incarcerated in prison. Generally, individuals who were sentenced to time in prison were found guilty of more severe crimes, while inmates who reported time in jail most likely had committed less severe offenses. In some cases, individuals who had been incarcerated in jail were not necessarily guilty of a crime, but rather, could have been awaiting trial. However, in that event, the individual was still experiencing the



negative effects of serving time in a system facility, which could have had an impact on the child's criminal justice involvement, regardless if the parent was innocent or guilty.

Looking at the effect of a mother's incarceration on child criminal justice system involvement as an adult, Huebner and Gustafson (2007) analyzed survey data collected by the National Longitudinal Survey of Youth 1979. Both males and females aged 14-21 responded to surveys from 1979 to 2000. Interviewers collected yearly survey responses about the respondents and their mothers from 1979 to 1994, and every other year from 1996 to 2000.

The authors used logistic regression models to identify the impact that a mother's incarceration had on a child's probation and conviction as an adult. In both models, age, race, ethnicity, and sex were included. Additionally, the authors took into account the child's education, delinquency, and whether the child experienced maternal absence. Maternal characteristics such as delinquency, education, if the mother smoked during pregnancy, and if the mother was under 18 years old when she had her first child, were also included. Finally, correlates of criminal behavior were also added to the model. These variables were: a measure of parental supervision, a measure of emotional support at home, and a measure of peer pressure.

The dependent variable in the first model was a measure of children who reported that they had served time on probation between 1994 and 2000. The results of this first model were significant and showed that children who had a mother who was incarcerated were four times more likely to serve time on probation as an adult compared to children whose mother had not been incarcerated ( $\exp(b) = 4.00$ ). The second model also produced significant results and showed that children who experienced maternal incarceration were nearly three times as likely to have a conviction as an adult compared to their peers who had not experienced maternal

incarceration ( $\exp(b) = 2.97$ ). Even with the inclusion of other variables that contribute to adult probation and conviction, maternal incarceration was a significant and impactful variable on a child's future criminal justice system involvement.

Muftic, Bouffard, and Armstrong (2016) used data from the National Longitudinal Survey of Adolescent Health from 1979 to find the effect that maternal incarceration had on offspring criminal justice involvement. The dataset used self-reporting surveys by the subjects as they reported on their own criminal justice involvement as well as their mother's incarceration. The authors sought to replicate Huebner and Gustafson's (2007) earlier work. This study used three dependent variables including adult arrest, adult conviction, and adult incarceration. Individual characteristics such as age, sex, race, and ethnicity, were included as well as if the respondent graduated high school, or had experienced maternal absence. Correlates of criminal behavior were controlled for. These variables were self-control, a delinquency scale, peer delinquency, and parental supervision.

Using logistic regression, these variables were included in six models, for each dependent variable with one of the two models that included additional parental characteristic variables. In the adult arrest models, maternal incarceration was a significant predictor of the child's adult arrest ( $\exp(b) = 2.492$ ,  $p < 0.01$ ). However, when the parental characteristics were included in the model, the amount of influence of maternal incarceration decreased, but was still significant ( $\exp(b) = 1.737$ ,  $p < 0.01$ ).

Maternal incarceration was also a significant predictor for the child's adult conviction and adult incarceration ( $\exp(b) = 2.399$  with  $p < 0.01$ , and  $\exp(b) = 2.478$  with  $p < 0.01$ , respectively). However, in both of those models, the magnitude of that predictor variable was reduced when the

parental characteristics were included ( $\exp(b) = 1.758, p < 0.01$ , and  $\exp(b) = 1.600, p < 0.05$ ). These results indicated that children who had experienced maternal incarceration were more likely to become involved in the criminal justice system (arrest, conviction, and incarceration) compared to peers who did not have a mother who was incarcerated. In all of the models, a mother's incarceration was a substantial and significant predictor.

The authors also used Propensity Score Matching (PSM) to create a matched group to compare to the subjects. Results of the logistic regression using PSM showed that maternal incarceration was a significant and substantial predictor of adult arrest, adult conviction, and adult incarceration. Children who experienced maternal incarceration were nearly 2.7 times more likely to be arrested as an adult than children who had not experienced maternal incarceration ( $\exp(b) = 2.692, p < 0.01$ ). Children whose mother was incarcerated were 1.9 times more likely to report the conviction as an adult and 2.0 times more likely to report incarceration as an adult ( $\exp(b) = 1.936, p < 0.05$ , and  $\exp(b) = 2.041, p < 0.05$ ), respectively). Although this study was unable to control for all confounding influences, it was able to identify the impact of maternal incarceration on child criminal justice involvement outcomes while it controlled for a number of other variables.

Murray, Janson, and Farrington (2007) used two data sets, the Project Metropolitan from Sweden and the Cambridge Study in Delinquent Development from England, to determine if parental incarceration predicted boys' delinquency. The project Metropolitan datasets is a prospective longitudinal survey of males and females born in 1953, who lived in the Stockholm Metropolitan area in 1963. The Cambridge study was a prospective longitudinal study of boys

who lived in South London in 1953. Criminal data for two generations was collected for both of these datasets.

The authors analyzed the Swedish data and grouped parental offenses into three categories: not convicted, convicted only, and convicted and incarcerated, to determine if any parental offense or non-offense had an effect on offspring offending up to age 19. In general, the findings showed parental incarceration was a better predictor than parent conviction without incarceration of offspring criminal justice involvement. The study first found the effect of parental criminality on offspring offending by the age of the offspring. If the parent's offending (conviction only and convicted and incarcerated) occurred before the child was born, the child was more likely to offend compared to peers who did not have an offending parent. For children who experienced parental offending between the ages of zero and six, they were also more likely to offend compared to peers without an offending parent. However, in this case, children who had a parent who was both convicted and incarcerated, had a higher odds ratio of offending compared to children whose parent was convicted only. Children whose parent offended while they were between the ages of seven and 19 had the highest odds ratios, which indicated that they were more likely to offend than children whose parents were not convicted. This group also had the highest odds ratios of offending compared to the other two groups who experienced parental offending earlier in life. This suggested that an offending parent increased a child's likelihood of offending, but the timing of the parents offense and incarceration also had an effect on the child's likelihood of offending. Up until 19, the older the child was, the more impactful the parent's offense was on the child's criminal justice involvement. It also appeared that there was a dose-response relationship between the number of times the parent was incarcerated and the

number of offenses of the child. The correlation coefficient found that this relationship was significant, albeit small ( $p < 0.001$ ,  $r = .06$ ).

The authors also found the other effects parental incarceration had. First, the effect of parental incarceration's influence on different types of crimes was determined. For each crime that was investigated, which included violence, theft, drug offenses, fraud, and other offenses, children who had a parent who was incarcerated had a higher likelihood of committing that crime compared to children who did not have an incarcerated parent.

The authors then determined how sex and class were affected by parental incarceration. Females appeared to be impacted more substantially than males, both in the odds ratios for offending between the ages of 19 and 30 ( $OR = 3.3$ ,  $p < 0.01$  and  $OR = 2.7$ ,  $p < 0.01$ ), as well as in chronic offending ( $OR = 5.5$ ,  $p < 0.01$  and  $OR = 3.0$ ,  $p < 0.01$ ). They also found that among children who were considered middle-upper class, those who experienced parental incarceration were more likely to offend compared to children who did not have an incarcerated parent ( $OR = 2.3$ ,  $p < 0.01$  for offending between 19 and 30, and  $OR = 3.1$ ,  $p < 0.01$  for chronic offenders). The magnitude of this effect was slightly lower for children who were considered working-class, although, it was still significant ( $OR = 2.1$ ,  $p < 0.01$  for offending between 19 and 30, and  $OR = 2.4$ ,  $p < 0.01$  for chronic offenders).

To determine if parental incarceration was an independent predictor of their child's offending, the authors used stepwise logistic regression. They included the number of the parents' convictions, added parental incarceration and found that parental criminality was a better predictor of offspring offending rather than parental incarceration. The authors compared the results from the Swedish dataset to Murray and Farrington's 2005 study that was based on data

from the Cambridge Study in Delinquent Development from England. Murray and Farrington found parental incarceration to be a stronger risk factor for child offending, which may have been a result of the shorter incarceration stays in Sweden.

Two datasets from two different countries, the Cambridge Study in Delinquent Development (CSDD) and the NSCR Transfive Study were used by Besemer et al. (2011) and compared the convictions of children as adults between those who had a parent who was in prison versus those who had a parent who was convicted but not incarcerated. Results from the CSDD dataset in England showed that both boys and girls had more convictions when their parent was imprisoned than when the parent had been convicted but not imprisoned. The results from the Netherlands dataset, the NSCR Transfive Study, showed that children of convicted parents had a higher conviction rate compared to children with parents who were imprisoned. However, the results for the Netherlands dataset were not significant.

The study also examined possible moderators, such as which parent was imprisoned, the age of the child at parental imprisonment, gender of child, the number of parental imprisonments, and the length of parental imprisonment. Only the number of parental imprisonments and the length of parental imprisonments were found to be moderators. Additionally, a multivariate regression analysis was run, which controlled for risk factors associated with criminal behavior, including: parental conflict, low family socio economic status, low family income, teen mother at first birth, parents' interest in education, the poor job record of father, and large family size. These factors were combined and included in the regression, which did not affect the significant relationship between parental imprisonment and convictions of the child.

Murray and Farrington (2005) also used the Cambridge Study in Delinquent Development (CSDD), the English dataset of 411 males and their parents, to compare outcomes of boys of prisoners with boys who experienced parental separation due to other causes. The researchers used logistic regression to identify the effect that the various forms of parental separation had on convictions and imprisonment of the child. The results found that children who experienced parental imprisonment between 0 and 10 years old were at a higher risk of conviction and imprisonment compared to children who experienced no parental imprisonment or separation, and compared to children who experienced parental separation for reasons other than imprisonment. Although separation from the parent may still have had an impact on children in terms of negative outcomes including criminal justice involvement outcomes, those who had a parent who was separated due to imprisonment seemed to be the most impactful in a child's likelihood of conviction and imprisonment.

### *Limitations*

Many of the studies that were identified and included in the intergenerational transfer of criminal justice involvement literature used data from populations outside of the United States. While there were some common themes that spanned most criminal justice involvement, there were major differences that limited the universality and applicability of the results found in the studies. One problem that arose from research outside of the U.S. was that each country defined their own criminal laws, which did not always hold consistent from country to country. When some behaviors were considered criminal in one country and legal in another, it could disrupt the consistency in findings. Additionally, the degree of criminal justice system involvement for

crimes varied by country, which added to the inconsistency with the studies that had been included in this chapter if it assumed that incarceration for a certain crime was constant between countries. Finally, each country's corrections system falls along the range of rehabilitative to punitive in how they treat their populations. While that has not been included as a factor in these models, these international differences, and even more localized differences in the criminal justice system, should be considered when extrapolating findings.

The population samples were another inconsistency within the literature. The most popular samples had included the transfer of criminal justice involvement between father and sons. While that was originally due to the low numbers of women who had been system-involved, that imbalance has begun to shift. As future research around criminal justice involvement continues, the ability to include women will increase. However, until the samples of women become more robust, many of the studies around the transfer of system-involvement will focus on the father's effect on their sons.

Finally, there were inconsistencies with the degree of criminal justice involvement, which was not clearly outlined in every study. The definition of incarceration, regardless of where the incarceration occurs, can vary widely. The length of time that the parent served in jail or prison was not always accounted for, which resulted in a wide range of incarceration experiences being condensed into one type of experience. It is necessary to include information about the nuances in incarceration experiences which may shed further light onto the specifics about that form of criminal justice involvement and why it may have had the significant impact it did on the criminal justice involvement outcomes of children.



## **Future Research**

The current slate of literature around the intergenerational transfer of criminal justice involvement does not extensively address moderating variables that influence the strength of the transfer. An area that is especially lacking is around moderating variables that encompass trauma and resiliency, two influential factors in the overall wellbeing and health for individuals, particularly for children.

### *Trauma*

Trauma and the long-lasting impacts it can have in one's life gained attention after results from the Center for Disease Control and Prevention (CDC)-Kaiser Permanente Adverse Childhood Experiences (ACE) Study were published. Felitti et al. (1998) collected information from over 9,000 adult patients between 1995 and 1997 who responded to questions about various categories of negative childhood experiences such as, experienced and witnessed abuse, having a household member who used illegal substances, and if they had a family member who had been incarcerated. Indications of these experiences were then correlated with risk behaviors and health outcomes. The researchers found that there was a graded relationship between the negative experiences (ACEs) and the behavior and health outcomes, so that patients who reported having a higher ACE score experienced more risky behaviors and had worse health outcomes.

Since the CDC-Kaiser Permanente study, additional research has centered on the negative physical, physiological, and emotional impacts of trauma. Dr. Nadine Burke-Harris has been one of the leading voices that furthered research in the field of trauma and ACEs. Dr. Burke-Harris and her partners at the Center for Youth Wellness research the scientific basis for the negative

effects that are experienced from trauma in childhood and into adulthood.<sup>33</sup> One of the ways that early trauma exposure greatly impacts the child's developing brain is in areas that oversee executive functioning, such as the prefrontal cortex. Part of executive functioning deals with inhibitory control, which can keep an individual from acting impulsively. When the executive function of a child's brain is damaged from trauma, a child may be less likely to regulate emotions and keep from acting impulsively or aggressively. The anterior cingulate cortex is another area of the brain impacted by trauma, which oversees emotional regulation. Children exposed to trauma are less likely to adequately and appropriately manage negative emotions, which could then result in negative or aggressive behavior. However, the Center has also concluded that the negative effects of trauma, including disruptions to the child's brain, can also be mitigated through interventions when the trauma is identified early.

With the research that has been conducted around Adverse Childhood Experiences (ACEs) and other forms of trauma, it is clear that there is a significant impact on individuals, that can lead to risky behaviors as well as negative health outcomes, particularly when trauma is experienced early in life. With the incarceration of a household member included in the ACEs assessment, that experience has been identified as trauma that affect a child's impulse control, which can then increase the susceptibility towards risky behaviors and negative health outcomes. It is likely, therefore, that children who are more likely to engage in risky behaviors are also more likely to end up involved in the criminal justice system. Many of the behaviors that can lead to criminal justice involvement are inherently risky, which make proxies for trauma included in the analyses in this chapter, strong candidates for the child's future criminal justice

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<sup>33</sup> The Center for Youth Wellness. (2019). <https://centerforyouthwellness.org/>

involvement. The two variables that will act as proxies are the Physical Risk Index and Delinquency Index.

The trauma variables are also likely to moderate the effect that a parent's involvement in the criminal justice system has on the child's involvement. As the ACE study concluded, the higher the number of ACEs one experienced, the more susceptible he/she is to negative health and wellness outcomes. For children who have a father who has been in prison and who are already experiencing increased susceptibility to becoming system-involved compared to peers who do not have a father who was in prison, any additional experiences of trauma are likely to make children even more vulnerable to becoming system-involved. Additionally, the negative impacts trauma has on a child's brain may impair the child's ability to cope with additional stress and regulate negative emotions. If a child is already experiencing trauma from having a father imprisoned, any additional stress will likely exacerbate the negative outcomes they are prone to, such as criminal justice involvement. Therefore, it is hypothesized that the Physical Risk Index and Delinquency Index variables will moderate and strengthen the relationship between a father's imprisonment and the child's criminal justice outcomes. If that is the case, children with imprisoned fathers who have experienced less trauma will have less likelihood of child arrest and incarceration, whereas those children who experience more trauma in addition to their father's imprisonment, will have a stronger likelihood of child arrest and incarceration.

## *Resiliency*

Researchers have thought of the flip side of trauma as resiliency, which has been outlined as the ability to overcome significant hardship.<sup>34</sup> Resiliency can be developed through various protective factors that help mitigate or offset trauma's negative impacts. The Center on the Developing Child at Harvard University identified supportive adult relationships as one protective factor that can help children bounce back from adversity, among other positive experiences. When positive influences are present in a child's life, there is the potential for the brain to re-wire and build positive new neural connections that allow the brain to heal where it had been damaged. When protective factors are present in a child's life, skills around executive function and self-regulation are developed, which is essential for children to operate with more self-control and develop the necessary skills they need to succeed in school and beyond.

The Enriching Environment Index provides a measure of factors related to resiliency that may help to offset the trauma that children experienced by having a father who was in prison. When the factors comprising the Enriching Environment Index are present in a child's life, there is a stronger likelihood that those positive influences will help heal the child's damaged executive functioning capabilities, which can prevent the child from pursuing risky behaviors such as criminal justice involvement. It is therefore hypothesized that the Enriching Environment Index will be a significant predictor of Child Arrest and Child Incarceration, but will reduce the child's likelihood of both. Additionally, children who have higher Enriching Environment Index scores are likely to experience a weaker transfer of criminal justice involvement from their father than children who have lower Enriching Environment Index scores because of the protective

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<sup>34</sup> The Center on the Developing Child, Harvard University. (2019). <https://developingchild.harvard.edu/science/key-concepts/resilience/>

factors that have helped the high Enriching Environment Index children develop the skills they need to offset the trauma of having a father in prison.

While there have been studies that looked at the different levels of criminal justice system involvement by the parent and the effects that had on their child's criminal justice system involvement, there are still gaps in the literature that can be filled. An exploration into the role trauma and resiliency play, not only in the child's tendency towards system-involvement, but also how they effect the parent-child transfer of system-involvement, is a worthwhile next step.

## Chapter 2

Previous research has sought to clarify the intergenerational transfer of criminal justice involvement. The various methods and populations that have been examined draw similar conclusions about the relationship between a parent and child, namely that a parent's involvement in the criminal justice system, regardless of degree or magnitude, increased the likelihood that the child will also become involved in the criminal justice system in some form. These conclusions were drawn from a spectrum of criminal justice system involvement as defined by the following encounters: contact with police officers for any reason apart from minor traffic violations, arrest, conviction, and incarceration. For children who have a parent who was involved in the criminal justice system through contact with police, arrest, conviction, or incarceration in jail or prison, their likelihood of following in the parent's footsteps is magnified. Intergenerational transmission of criminal justice involvement has yet to be fully delineated, but one theory suggests that the parental encounters with law enforcement that children experienced may influence their future actions. Others theories point to a biological directive, or a "criminality gene," which may make criminal justice involvement more likely. More recent research has identified gene expression as a possible culprit, in which negative experiences may cause certain genes to be expressed differently in some individuals, that can make an individual more susceptible to criminal justice system involvement. Additionally, there may be specific genes that are passed down that inherently make an individual more likely to exhibit aggressive or criminal behavior. When those genes are exposed to negative circumstances, such as abuse or maltreatment, the exposure can interact with the gene to increase one's likelihood of criminal justice system involvement.

Due to variations in each child's exposure to the criminal justice system through his or her parent, as well as the variations in genetic makeup, among other factors, pinpointing the exact risk factors associated with having a parent who is system-involved that can lead a child to become involved in the criminal justice system may be an impossible task. However, valuable information can be gleaned from pursuing additional research into what factors, in addition to a parent's criminal justice involvement, may make a child more prone to criminal justice involvement. Additionally, identifying factors that moderate the parent-child relationship can help to provide valuable information for policies and programs that seek to reduce the next generation who are likely to become offenders from actually doing so.

Potentially important factors that have not been addressed in research on intergenerational system-involvement include the roles of trauma and resiliency. This research will assess the extent to which trauma and resiliency have an effect on the child's criminal justice involvement, while taking into account the child's father's criminal justice involvement. Second, this research will identify if trauma and resiliency are moderating factors that strengthen or weaken the transfer of criminal justice involvement between generations. The idea of factors that moderate the relationship has only modestly been explored in previous research, but could offer insight into how to prevent children who have shown to be more susceptible to criminal justice involvement from doing so.

Furthering the literature on children's criminal justice inclinations, particularly around children who have shown to be more vulnerable to system-system-involvement because of their parent's system-involvement, will not only help to understand what factors add to that inclination, but also what factors may help reduce that inclination. Given the already significant

research that has established parental criminal justice involvement's effect on a child's criminal justice involvement, it is important to explore the intricacies of the relationship. Variables that represent the child's exposure to trauma, as well as the factors in their life that promote resilience, can provide useful insight into the child's criminal justice involvement.

Additionally, determining if those factors act as moderators can also contribute to the literature. The current state of literature does not include significant analyses around moderators, however identifying factors that strengthen or weaken the impact of a parent's criminal justice involvement will provide meaningful knowledge, particularly for programs and policies that aim to prevent the next generation from offending.

The analyses presented in this chapter will test for the influence risk and protective factors have on a child's arrest and incarceration. By including risk and protective variables in the economic models, significant results will suggest that trauma and resilience play a role in a child's susceptibility or aversion to criminal justice involvement. However, there is a possibility that significant results may extend beyond just predicting child outcomes, and may in fact strengthen or weaken the relationship between the father's prison involvement and the child's arrest and incarceration.

### **Aims and Hypotheses**

There are three primary aims this research seeks to accomplish. The first aim of the research is to confirm previous findings that a father's imprisonment was a significant predictor of future arrest and incarceration for the child. It is likely that, based on findings of previous research related to the intergenerational transmission of criminal justice involvement, a father's imprisonment will



have a significant and positive impact on the child's criminal justice outcomes. In other words, a child with a father who has been imprisoned will have a higher likelihood of becoming arrested and incarcerated compared to a peer whose father has not been imprisoned.

The second aim is to determine if childhood trauma and resilience serve as risk or protective factors for future arrest and incarceration of children who have experienced father imprisonment. It is predicted that both the risk and protective factors will be significant predictors. The risk factors are predicted to have a positive impact on both child arrest and child incarceration, or an increased likelihood that a child will be arrested or incarcerated. This hypothesis stems from the research on childhood trauma that has shown to negatively impact a child's health and wellness outcomes. There have also been specific risk factors, or experienced traumas, that have been directly correlated to criminal justice system involvement. When these traumas are experienced early in a child's life, it can exacerbate the negative impact they have on both short- and long-term outcomes. Although the risk factors that have been directly linked to criminal justice involvement are not included in this analyses, it is expected that other risk factors that are included in the analysis, will produce similar results.

While it is hypothesized that the risk factors will affect the child outcomes in a positive way, or make the child more likely to be arrested or incarcerated, the protective factors are likely to have the opposite, albeit still significant, effect. As recent research has found, certain factors present in a child's life can have a buffering effect on the negative impacts experienced from trauma.<sup>35</sup> Many of the specific factors vary by study, but general themes of resilience are consistent and include: social and emotional wellness, supportive and nurturing parents, and

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<sup>35</sup> Harper Browne, C. (2014). The strengthening families approach and protective factors framework: Branching out and reaching deeper. *Washington, DC: Center for the Study of Social Policy*, 21-24.

stability within the household. As a result, the presence of protective factors included in this analysis that are integrally related to the fundamental tenants of resiliency, will likely deter the child from becoming involved in the criminal justice system.

The third and final aim is to assess whether trauma and resilience moderate the relationship between parents' and children's system-involvement. That is, might earlier childhood trauma render the child more vulnerable to parental system-involvement and might resilience factors, internal or environmental, reduce the child's vulnerability to parental involvement? The economic models used in this analysis will reflect all three of the aims and hypotheses outlined.

## **Data**

The dataset used for this analysis was from the National Longitudinal Surveys (NLS), a collection of surveys funded primarily by the Bureau of Labor and Statistics, in addition to multiple other organizations. The NLS surveys collect information across multiple points in time via surveys conducted by interviewers. The NLS survey used for this analysis was the NLS Youth 1997 (NLSY97), which identified measures of interest by including questions about the labor market, lifestyle, health, education, relationships, and criminal justice involvement.

Randomly selected households were visited by interviewers who surveyed all eligible youths. A small proportion of the youths, 3,855 of the 8,984 respondents, were siblings from the same household. The eligibility criteria for selected youth included all randomly selected household residents who were between the ages of 12 and 16 as of December 31, 1996. In addition to the eligible youths, parents were also interviewed. A total of 75,291 households were

screened in 147 primary sampling units. The interviewers used computer-assisted personal interviewing systems to minimize the possibility of inconsistencies

The total number of respondents in the first year of the NLSY97 survey was 8,984. The respondents were comprised of a cross-sectional sample and a supplemental sample to create a more equally representative sample based on race. There were follow-up surveys for both the cross-sectional and supplemental samples conducted each year for 17 years, and then every two years thereafter. For this research, only a sample of the total NLSY97 population was used. The sample was selected based on those who answered all of the survey questions that were used in the models, which included Birthday Year, Sex, Race, Father Prison, Physical Risk Index, Delinquency Index, Enriching Environment Index, Child Arrest, and Child Incarceration. All of the survey questions were asked of the respondents when they were youth, except the child arrest and child incarceration questions, which were asked when the respondents were adults. This resulted in 1,432 youth respondents that comprised the sample for this chapter.

Within this sample, the respondents comprised a nearly equal distribution between birthday years, with 487 youth born in 1982, 484 born in 1983, and 461 born in 1984 (See Table 1). The distribution between males and females was also fairly equal; male respondents comprised 52.6% of the sample, or 753 respondents, and females represented 47.4%, or 679 respondents. Respondents did not represent all race groupings equally, but rather had a relatively high representation of non-black/non-hispanic with 764 respondents. There were 373 black respondents, and 280 hispanic respondents. Only 15 youth identified as mixed race.

Table 1. Variable Frequency Table

Variable		Frequency	Percent
<b>Birthday Year</b>	1982	487	34%
	1983	484	33.8%
	1984	461	32.2%
<b>Sex</b>	Male	753	52.6%
	Female	679	47.4%
<b>Race</b>	Black	373	26%
	Hispanic	280	19.6%
	Mixed Race	15	1%
	Non-Black/Non-Hispanic	764	53.4%

*Independent Variables Not of Interest*

Variables representing the youths' sex, race, and age were included in all of the models, and were from the survey conducted in 1997. While not of interest for this model, these factors have been explored in previous intergenerational criminal justice involvement research. The variable representing the sex of the youth was a dichotomous variable. The race variables originated as one variable with four race options and was then computed into four different dummy variables based on each of the four options in the economic models. The four options included: Black, Hispanic, Mixed Race (non-Hispanic), and Non-Black/Non-Hispanic. The non-black/non-hispanic group included all other races that were not already grouped. However, the breakdown of race, such as white, Asian, etc., within the Non-Black/Non-Hispanic group. The following three race variables were included in each of the models: Race(1) (Hispanic), Race(2) (Mixed Race), and Race(3) (Non-Black/Non-Hispanic). The variable Race(0) (Black) was not included

in the models in order to avoid heterogeneity between all of the race. Lastly, the birth year of the youth was included, with the responses ranging from 1980-1984, however, the sample for this chapter only included youth born in 1982, 1983, and 1984.

Although the aforementioned variables were not specifically of interest in the analyses in this paper, they were included to create a significant model that would allow the independent variables of interest to be analyzed.

### *Independent Variables of Interest*

#### Father Prison

The NLSY97 contains a number of parental criminal justice involvement indicators, however, the Father Prison variable was the only indicator included in the analysis. This was in part to keep the models simple and consistent with the type of parental criminal justice involvement, as the focus was more on the risk and protective factors. Additionally, the Father Prison variable provided a small, but robust enough sample of children who had responded positively to having a father in prison. The Mother Prison variable, which identified children whose mother had served a prison sentence, was identified but ruled out as an addition to the models due to the low number of respondents who said they had a mother who had been to prison, and therefore would not produce meaningful results.

The Father Prison variable was based on the youth respondents' answer to the following question:

“As far as you know, did your father ever serve a prison sentence for a conviction before your 16th birthday?”

This question was asked of respondents in 2013. The youth had the option of responding “yes” or “no,” which resulted in a dichotomous variable. The number of youth who responded “yes” to having a father in prison was 92 out of the 1,432 included in the analyses.

### Physical Environment Risk Index

The NSLY97 Codebook Supplement prepared by Child Trends, Inc. and the Center for Human Resource Research at The Ohio State University and describes the variables that are included in this analysis. Three variables were chosen and used as proxies of trauma and resiliency experienced by children.

The first variable that was included was the Physical Environment Risk Index. The index was comprised of five questions about the physical environment of the child. Each question was coded into either having risk present or no risk present. Questions 2 and 3 were coded into three risk categories: high risk, moderate risk, and no risk. The questions included:

1. In the past month, has your home usually had electricity and heat when you needed it? (Youth report)
2. How well kept are most of the buildings on the street where the adult/youth resident lives? (Interviewer report)
3. How well kept is the interior of the home in which the youth respondent lives? (Interviewer report)
4. When you went to the respondent’s neighborhood/home, did you feel concerned for your safety? (Interviewer report)
5. In a typical week, how many days from 0 to 7 do you hear gunshots in your neighborhood? (Youth report)

Each youth respondent was given a composite score based on his/her coded responses. The scores ranged from 0-700, with higher scores indicating a higher physical environment risk. Respondents who answered all of the five questions were given a composite score based on their

responses. Additionally, respondents who only answered four of the five questions were assigned a composite score that was based on a weighted value of the respondent's raw score, in order to account for the unanswered question. Any respondents who answered three or fewer questions were not included. This variable was included in the second and third blocks of the second and fifth models presented in this paper. The distribution of scores for the respondents was skewed towards the lower end, with 835 respondents having scores of either 0 or 100.

### Delinquency Index

A second measure of trauma that was included in two of the models was a Delinquency Index score. Youth respondents were asked 10 questions about their delinquent behaviors. The following 10 questions were asked and scored:

1. Have you ever run away, that is, left home and stayed away at least overnight without your parent's prior knowledge or permission?
2. Have you ever carried a hand gun? When we say hand gun, we mean any firearm other than a rifle or shotgun.
3. Have you ever belonged to a gang?
4. Have you ever purposely damaged or destroyed property that did not belong to you?
5. Have you ever stolen something from a store or something that did not belong to you worth less than 50 dollars?
6. Have you ever stolen something from a store, person or house, or something that did not belong to you worth 50 dollars or more including stealing a car?
7. Have you ever committed other property crimes such as fencing, receiving, possessing or selling stolen property, or cheated someone by selling them something that was worthless or worth much less than what you said it was?
8. Have you ever attacked someone with the idea of seriously hurting them or have a situation end up in a serious fight or assault of some kind?
9. Have you ever sold or helped sell marijuana (pot, grass), hashish (hash) or other hard drugs such as heroine, cocaine or LSD?
10. Have you ever been arrested by the police or taken into custody for an illegal or delinquent offense (do not include arrests for minor traffic violations)?

Each question was scored 1 if the response was “yes,” and 0 if the response was “no.” The points were summed and the youth respondent was given an aggregate score for his/her delinquency, which ranged from 0 to 10. The distribution of Delinquency Index scores were skewed towards the lower end of the spectrum of scores.

### Enriching Environment Index

The Enriching Environment Index was included in the NLSY97 survey. As a good indicator of resilience or protective factors that children may be exposed to and which may provide a buffer to traumatic experiences, this index was included in the third and sixth models. There were three questions that youth responded to, which were compiled into a score for an enriching environment. The questions included:

1. In the past month, has your home usually had a computer?
2. In the past month, has your home usually had a dictionary?
3. In a typical [school week/work week/week], did you spend any time taking extra classes or lessons for example, music, dance, or foreign language lessons?

The youth responded either “yes” or “no” to the three questions. “Yes” responses were scored one point, “no” responses scored 0. The scores for the three questions were summed so that each respondent had an Enriching Environment Index score between 0 and 3, with the higher the score indicating a more enriching environment that the respondents had been exposed to as youth.

A Receiver Operating Characteristic (ROC) analysis was performed to identify a “cut point” for an Enriching Environment Index score that would accurately predict the respondents’



true positive predictions of arrest and incarceration.<sup>36</sup> The ROC analysis did not produce significant results, and therefore no cut point could be determined. The Enriching Environment Index was then recoded from a categorical variable into four different variables dummy variables (Enriching Environment(0), Enriching Environment(1), Enriching Environment(2), and Enriching Environment(3)). The three dummy variables representing scores of 1, 2, and 3, compared to a score of 0, were included in the model to determine if the variance in the likelihood of criminal justice involvement was different for respondents across the range of scores. It was hypothesized that the decrease in risk was relatively small for respondents who had a score of 1 compared to respondents who had a score of 0. However, for respondents with a score of 3, their decrease of criminal justice involvement compared to respondents with a score of 0 was likely to be much higher than what would be captured if the Enriching Environment Index was not transformed into dummy variables. As the score increases, it is likely that the decrease in susceptibility to criminal justice involvement will also increase. However, that increase would not be captured if the Enriching Environment Index was not transformed into different variables. The non-dummy results would only produce a static change in likelihood of criminal justice involvement.

### *Dependent Variables*

#### Child Arrest

The dependent variables of interest for the youth criminal justice outcomes included arrests and incarceration. These variables were selected to span a range of severity in criminal justice

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<sup>36</sup> International Business Machines (IBM). (2019). IBM Knowledge Center, ROC Curves. Retrieved from [https://www.ibm.com/support/knowledgecenter/en/SSLVMB\\_24.0.0/spss/base/idh\\_groc.html](https://www.ibm.com/support/knowledgecenter/en/SSLVMB_24.0.0/spss/base/idh_groc.html).

involvement in order to better understand the degree to which a child may be influenced by his/her father. There were a number of child criminal justice involvement measures that were collected in the NSLY97 surveys including arrests, charges, court appearances, convictions, guilty pleas, and sentencings.

Child Arrest was selected as one of the two dependent variables for the models. Arrests provide a good variable to represent the less severe end of the spectrum of criminal justice involvement. An arrest is defined as when a police officer, either with an arrest warrant or without if probable cause and exigent circumstances are present, deprives an individual of freedom of movement.<sup>37</sup> Arrests occur when an individual is suspected of being involved in a crime and the police officer takes the individual into custody to continue the process of determining if the individual is involved in the crime or not. Qualification for arrests go beyond the basic minor infractions, such as traffic violations. When an arrest takes place, the individual who is being arrested has not necessarily committed any crime, and thus is not a completely precise measure of criminality or involvement in a crime. However, every individual who is arrested comes in contact with the criminal justice system, regardless of guilt. Due to the low-threshold (comparatively) of becoming involved in the criminal justice system through arrest, father imprisonment will likely have a larger effect on children than the other criminal justice system involvement variable, incarceration.

The original prompt from the NLSY97 that measured child arrest was:

“Respondent’s monthly arrest status in 2015; calculated for each month beginning with the month that R turned 12.”

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<sup>37</sup> Legal Information Institute (LII) (2019). <https://www.law.cornell.edu/wex/arrest>.

The following options were provided to respondents:

“Respondent not arrested in this month and not arrested in a previous month.”

“Number of times Respondent arrested in this month,” (producing a number of 1 to 98).

“Respondent arrested previously but not in this month.”

For this analysis, the child arrest variable was recoded to combine the number of youth who responded positively to having been arrested in December 2015 and the number of youth who responded positively to having been arrested in a previous month. This resulted in a dichotomous variable that indicated if the youth had ever been arrested (in December 2015 or before), or if the youth had never been arrested. The number of children who responded negatively to the prompt, or had reported never being arrested, was 925. The remaining 507 respondents reported that they had been arrested.

### Child Incarceration

The second dependent variable that was used in the other three models was a measure of incarceration for the youth, that was measured in December, 2015. Unlike an arrest, incarceration provides a more significant measure of an individual’s criminal justice system involvement.

The statement that the youth responded to was:

“Respondent’s monthly incarceration status 2015; calculated for each month beginning with the month that Respondent turned 12.”

The youth chose from the following responses:

“Respondent not incarcerated in this month and not incarcerated in a previous month.”

“Respondent was incarcerated during all or some of this month.”

“Respondent incarcerated previously but not in this month.”

The incarceration variable was recoded as a dummy, which grouped the youth who responded that they were incarcerated during all or some of the current month and the youth who responded that they were previously incarcerated but not in the current month, to indicate if the youth had ever been incarcerated or if he/she had never been incarcerated. This variable was included as a measure of criminal justice involvement that was more significant than the measure of arrest. Incarceration indicates with a strong likelihood that the respondent was not only arrested for a crime, but was also convicted and sentenced for that crime. There were 1,288 respondents who reported they they had never been incarcerated, while respondents reported that they had been incarcerated.

#### Case Reports—Counts

The basic counts of fathers and children who were involved in the criminal justice system were calculated. Fathers who were imprisoned were more likely to have a child who had been arrested (50.0%) compared to fathers who had not been to prison (34.4%). Children who were arrested were more likely to have a father who was imprisoned (9.1%) compared to children who were not arrested (5.0%). Similarly, fathers who were imprisoned were more likely to have a child who had been incarcerated (19.6%) compared to fathers who had not been to prison (9.4%). Children who were incarcerated were more likely to have a father who was imprisoned (12.5%) compared to children who were not incarcerated (5.7%).

## **Economic Models**

Six binary logistic regression models were used to analyze the relationship between a parent's criminal justice involvement and the child's criminal justice involvement. Three proxy variables for resilience and trauma, which represented the risk and protective factors, were included in the analyses to determine if they had an effect on the child's criminal justice system involvement. In each of the six models, one of the three risk and protective factors was included as a predictor variable, to determine if, independently, each had an influence on Child Arrest and Child Incarceration.

Additionally, the proxies were also transformed into interaction variables and included to determine if they played a moderating role in the relationship between the father's imprisonment and the child's arrest or incarceration. Independently, the risk and protective variables were multiplied by the Father Prison variable to create new variables. The interaction variables were included as predictor variables in the models. Significant results of the interaction variables would indicate that the independent variable interacting with Father Prison acts as a moderator between Father Prison and Child Arrest or Child Incarceration.

Each model included one of the three risk or protective variables and the corresponding interaction variable. These proxies and interaction variables were added in separate blocks, entered in as a step-wise method that created three stages of results for each model in addition to a basic model without any variables included. The initial block did not include the risk or protective factors or the interaction variables, but did test the Father Prison's role as a predictor of the dependent variables. The second block added the proxy variable to the other independent variables and tested for the risk or protective factor's role as a predictor of Child Arrest and Child

Incarceration. The next block added the interaction variable, which then tested for the risk or protective variable's role as a moderator.

For this non-linear analyses that focused on outcomes of interest that are continuous rather than dichotomous, binary logistic regression provided an analytical method to quantify the likelihood of a particular outcome given certain factors in a symmetrical fashion. In this analysis, binary logistic regression allowed for the influence of father's prison involvement, and the risk and protective factors, to create a logarithm of the odds of child arrest and child incarceration. Additionally, binary logistic regression analysis allows for blocking, or the introduction of new variables in a step-wise fashion. This allows for simplified analysis of the new variables through a direct comparison of the different blocks of each model. This analysis method allowed for the testing of moderator variables through the creation and inclusion of interaction variables.

To ensure there was no multicollinearity with the variables that were used in the six economic models, correlations between variables were scanned and verified that there was not a significant correlation.

### *Child Arrest Models*

The first three models used Child Arrest as the dependent variable. Each model included the independent variables in block one: Sex, Birthday Year, Hispanic, Mixed, Non-Black Non-Hispanic, and Father Prison. In the first child arrest model, block 2 added the Physical Risk Index variable to variables analyzed in block one to test if the first risk factor was a significant predictor, and indeed increased a child's likelihood of arrest. In block 3, the interaction variable FatherPrison \* Physical Risk Index was added to test for the Physical Risk Index's role as a

moderator. If significant, the Index would be considered a moderating variable in the relationship between father prison and child arrest. It was predicted that the Physical Risk Index would strengthen the child's likelihood of arrest, and therefore moderate that relationship between father and child. The equations for each block are depicted below:

Block 1 :

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison}$$

Block 2:

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Physical Risk Index}$$

Block 3:

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Physical Risk Index} + B_8 \text{ FatherPrison} * \text{Physical Risk Index}$$

The second of the three models used the same variables in block 1, but used the Delinquency Index for the independent variable of interest for block 2 to test if Delinquency predicted child arrest, as hypothesized. Block 3 included all of the variables in block 2 and also included the interaction variable Father Prison \* Delinquency Index. The inclusion of the interaction variable tested for the Delinquency Index's role as a moderator. Greater delinquency involvement, or a higher Delinquency Index score, was predicted to strengthen the role that a father's imprisonment had on the child's arrest. The three blocks of the Delinquency Index model were:

Block 1 :

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison}$$

Block 2:

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Delinquency Index}$$

Block 3:

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Delinquency Index} + B_8 \text{ FatherPrison} * \text{Delinquency Index}$$

The final model used the same variables as the previous two models for block 1. In block 2 of the third model the Enriching Environment Index variables were used to represent the child's resiliency, which was added to the variables in block 1. This tested for the Enriching Environment Index's role as a predictor of child arrest. It was predicted that a high index score would decrease the child's likelihood of arrest. The interaction variables, Father Prison \* Enriching Environment Index variables, were added to block 3 and were tested for the Enriching Environment Index's role as a moderator. The positive benefits that resiliency has shown to bring to a child's outcomes influenced the prediction that the presence of a more enriching environment could weaken the influence that a father's imprisonment had on the child's criminal justice involvement.

Block 1 :

$$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison}$$



Block 2:

$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Enriching Environment Index variables}$

Block 3:

$\text{logit}(\text{Child Arrest}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Enriching Environment Index variables} + B_8 \text{ FatherPrison} * \text{Enriching Environment Index variables}$

### *Child Incarceration Models*

The three Child Incarceration models used the same variables and sequencing as the three Child Arrest models. In block 1 of each model, Sex, Birthday Year, the Race dummy variables, and Father Prison were included. In block 2 of the first model, the Physical Risk Index was added, whereas in block 3, the Physical Risk Index and the interaction variable Father Prison \* Physical Risk Index were added. Similar to the arrest models, a high Physical Risk Index value was predicted to increase the child's likelihood of incarceration and also strengthen the relationship between the father's and child's involvement in the criminal justice system.

Block 1 :

$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison}$

Block 2:

$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Physical Risk Index}$

Block 3:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Physical Risk Index} + B_8 \text{ FatherPrison} * \text{Physical Risk Index}$$

The second model analyzing Child Incarceration included the Delinquency Index of the youth respondents, acting as a proxy for trauma, in the second block. The child's delinquency was hypothesized to increase the child's likelihood of incarceration. Block 3 tested for the moderating effect of Delinquency of youth by included the interaction variable Father Prison \* Delinquency Index. Delinquency was predicted to strengthen the influence the father's imprisonment had on the child's incarceration.

Block 1 :

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ Father Prison}$$

Block 2:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ Father Prison} + B_7 \text{ Delinquency Index}$$

Block 3:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ FatherPrison} + B_7 \text{ Delinquency Index} + B_8 \text{ Father Prison} * \text{Delinquency Index}$$

The final model using Child Incarceration as the outcome of interest included the Enriching Environment Index variables in the second and third blocks. As was hypothesized with the Child Arrest model, the child's exposure to a highly enriching environment, as indicated by a high

Enriching Environment Index score, will decrease the child's likelihood of incarceration.

Additionally, the interaction variables of Father Prison and the Enriching Environment Index variables were included in block 3, and were predicted to act as moderators that would weaken the father's influence on child arrest when the father had been in prison.

Block 1:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ Father Prison}$$

Block 2:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ Father Prison} + B_7 \text{ Enriching Environment Index}$$

Block 3:

$$\text{logit}(\text{Child Incarceration}) = B_0 + B_1 \text{ Sex} + B_2 \text{ Birthday Year} + B_3 \text{ Hispanic} + B_4 \text{ Mixed Race} + B_5 \text{ Non-Black Non-Hispanic} + B_6 \text{ Father Prison} + B_7 \text{ Enriching Environment Index variables} + B_8 \text{ Father Prison} * \text{Enriching Environment Index variables}$$

## **Results**

### *Model 1*

The results from the first model found children who had experienced parental incarceration to be more likely to experience arrest. When the physical risk that the child had experienced was also accounted for, child arrest was more likely for those who had experienced father imprisonment and increased exposure to physical risks. Table 2 presents the results from the three blocks of the first binary logistic regression model. The only variables that were significant predictors of child arrest were Sex, Non-Black Non-Hispanic, and Father Prison. While the results of the other

independent variables provide interesting insight into a child's likelihood of arrest, the only variable of interest in this first block is Father Prison. As hypothesized, and as previous literature suggests, when a child's father has been incarcerated in prison by the time the child is 16, it is a significant predictor of a child's future arrest. The Exp(B) value of Father Prison was 2.0, which suggests that a child who has a father who has been to prison has an increased odds of 2.0 of being arrested compared to a child whose father has not been to prison.

Previous research has not addressed the role physical risk has played in the child's susceptibility to arrest. In the second block of the model, the Physical Environment Risk Index (Physical Risk) was added to the independent variables that were in block 1. When this new variable was included, Father Prison remained significant, although it decreased slightly to 0.012. The odds of a child being arrested also decreased when Physical Risk was included. Children who with a father who has been imprisoned are 1.8 times (there is not sufficient precision to go to 3 digits) more likely to become arrested than their peers. The Physical Risk variable was also a significant predictor of child arrest, but had a minimal impact on increasing the odds of Child Arrest, confirming the second hypothesis. For each unit increase of the Physical Environment Risk Index, the odds of a child being arrested increased by 1.0.

In the first attempt to identify Physical Risk Index as a moderator in the parent-child criminal justice involvement relationship, there was no indication that the risk factor played a role beyond a predictive variable of Child Arrest. Block 3 of the model included the interaction of the variables Father Prison and Physical Risk. The Father Prison \* Physical Risk did not prove to be a significant predictor of child arrest, indicating that Physical Risk Index was not a moderator between Father Prison and Child Arrest.

Table 2. Logistic Regression of Demographic Factors, Father Prison and Physical Risk Index, and Moderators on Child Arrest

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000	0.000
<b>Sex</b>	0.380*	0.371*	0.371*
<b>Birth Year</b>	1.065	1.045	1.044
<b>Hispanic</b>	0.832	0.907	0.907
<b>Mixed Race</b>	0.764	1.004	1.000
<b>Non-Black/Non-Hispanic</b>	0.767*	0.962	0.965
<b>Father Prison</b>	1.988	1.769*	1.991
<b>Physical Risk Index</b>		1.002*	1.002*
<b>Father Prison * Physical Risk Index</b>			0.999

*Model 2*

In the second model with Child Arrest as the dependent variable, the Delinquency Index variable was added in the second block as another proxy for the child’s risk exposure. Block 1 for the first model was the same for block 1 in models 2 and 3. The results showed that the significance of the Father Prison variable decreased slightly from 0.002 in Block 1 of the model to 0.030 in Block 2, still making a father’s imprisonment a significant predictor of a child’s future arrest (See Table 3). The Exp(B) value of Father Prison decreased from 2.0 to 1.7, indicating that the odds of a child being arrested is 1.7 times greater for children who had a father who had been to prison, compared to children whose father had not been to prison. The second block of the model was primarily used to determine the role of the second risk factor’s role in the child’s arrest. The

Delinquency Index proved to be a significant predictor of Child Arrest. The Exp(B) value of Delinquency was also significant in magnitude, with a value of 1.6. This suggests that a one-unit increase of Delinquency Index, or one additional delinquent event that the child had experienced, increased the odds of a child being arrested by 1.6.

The third block of the model included the interaction variable Father Prison \* Delinquency Index to test for moderation. When this variable was added to the variables included in block 2, the Father Prison variable was no longer significant. However, the Delinquency Index remained a significant predictor of Child Arrest

The interaction variable Father Prison \* Delinquency Index did not produce significant results, which suggests that the Delinquency Index does not moderate the relationship between a father’s imprisonment and a child’s arrest, or as was predicted, a child’s delinquency did not strengthen the child’s likelihood of being arrest when his/her father was imprisoned.

Table 3. Logistic Regression of Demographic Factors, Father Prison and Delinquency Index, and Moderators on Child Arrest

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000*	0.000*
<b>Sex</b>	0.380*	0.469*	0.471*
<b>Birthday Year</b>	1.065	1.188*	1.187*
<b>Hispanic</b>	0.832	0.818	0.812
<b>Mixed Race</b>	0.764	0.605	0.581
<b>Non-Black/Non-Hispanic</b>	0.767*	0.742*	0.739*
<b>Father Prison</b>	1.988	1.686*	1.335
<b>Delinquency Index</b>		1.611*	1.593*
<b>Father Prison * Delinquency Index</b>			1.199

### *Model 3*

In the third model using Child Arrest as the indicator of criminal justice involvement, the Enriching Environment Index variable (Enriching Environment) was included as an independent variable of interest in the form of multiple dummy variables to test if it was a significant predictor of Child Arrest. When the Enriching Environment Index variables were added to the model, Father Prison remained a significant predictor of Child Arrest, increasing the odds that a child would be arrested by 1.8 if their father had been in prison, seen in Table 4.

The recoded dummy variables of the Enriching Environment Index were included in block 2 of the model. Enriching Environment(1), Enriching Environment(2), and Enriching Environment(3) all produced significant results. The results of Enriching Environment(1) indicated that a one-unit increase in the Enriching Environment(1) variable, from 0 where children responded that they did not have an Enriching Environment Index score of 1 to responding that they did have an Enriching Environment Index score of 1, decreased the odds of Child Arrest by 2.1. Enriching Environment(2) was also significant and had a more impactful result than Enriching Environment(1). The results indicated that compared to the Enriching Environment Index Score of 0, an Enriching Environment Index score of 2 decreased the odds of child arrest by 3.1. The third Enriching Environment indicator that was included was Enriching Environment(3). This produced the most impactful results of all of the Enriching Environment Index variables, and indicated that an increase of an Enriching Environment(3) value from 0 to 1 decreased the odds of Child Arrest by 4.4. This suggests that for children with a score of 3 for the Enriching Environment Index, compared to those with a score of 0, were much less likely to be arrested.

In the third block of the model, the interaction between Father Prison and each Enriching Environment indicator were included. By itself, Father Prison produced insignificant results, but the Enriching Environment indicators Enriching Environment(1), Enriching Environment(2), and Enriching Environment(3) all remained significant. However, the first interaction variable Father Prison \* Enriching Environment(1) was not significant, confirming that Enriching Environment(1) was not a moderator in the Father Prison-Child Arrest relationship. Similarly, Father Prison \* Enriching Environment(2) and Father Prison \* Enriching Environment(3) did not produce significant results. Insignificant results indicated that while the Enriching Environment variables may have predicted Child Arrest, they did not weaken the impact that a father's imprisonment has on a child's likelihood of arrest.



Table 4. Logistic Regression of Demographic Factors, Father Prison and Enriching Environment Index, and Moderators on Child Arrest

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000	0.000
<b>Sex</b>	0.380*	0.392*	0.392*
<b>Birthday Year</b>	1.065	1.070	1.066
<b>Hispanic</b>	0.832	0.817	0.815
<b>Mixed Race</b>	0.764	0.894	0.923
<b>Non-Black/Non-Hispanic</b>	0.767*	0.884	0.883
<b>Father Prison</b>	1.988	1.790*	1.024
<b>Enriching Environment(1)</b>		0.487*	0.437*
<b>Enriching Environment(2)</b>		0.320*	0.295*
<b>Enriching Environment(3)</b>		0.228*	0.213*
<b>Father Prison * Enriching Environment(1)</b>			2.243
<b>Father Prison * Enriching Environment(2)</b>			1.572
<b>Father Prison * Enriching Environment(3)</b>			1.124

*Model 4*

The next three models looked at Child Incarceration as the indicator of criminal justice system involvement. To keep consistent with the first three models that used Child Arrest as the child’s criminal justice system involvement, the same independent variables were included. The results from block 1 showed that Birthday Year, Hispanic, Mixed Race, and Non-Black Non-Hispanic were not significant predictors of Child Incarceration. Sex and Father Prison were the only variables that significantly predicted Child Incarceration. Father Prison was also significant in terms of magnitude (See Table 5). This suggests that children who have a father who has been in

prison have an increase of 2.5 odds of becoming incarcerated compared to their peers who did not have a father who had been to prison.

In the second block, Father Prison decreased in significance slightly from 0.002 to 0.009. This block of the model produced an Exp(B) value of 2.208, which indicates that children who have a father who was imprisoned there is an increased odds of 2.2 that the child will be incarcerated. The Physical Environment Risk variable was added to the model, and was a significant predictor of Child Incarceration. For every one-unit increase in the Physical Risk score, there is an increases in the odds of Child Incarceration by 1.0. As was hypothesized, the more physical risk that the child has been exposed to, the more likely it is that the child will be incarcerated.

When the interaction variable was included in the third block of the model, Father Prison was still significant, but less so than it was in the previous blocks, while Physical Risk remained significant. The Father Prison \* Physical Risk Index interaction variable did not prove to be a significant predictor of Child Incarceration, and was not considered a moderating variable. Unlike what was predicted, that a child with a father who had been to prison might experience magnified risk of incarceration when they were exposed to more physical environment risks, there was no moderating relationship.

Table 5. Logistic Regression of Demographic Factors, Father Prison and Physical Risk Index, and Moderators on Child Incarceration

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000	0.000
<b>Sex</b>	0.184*	0.176*	0.176*
<b>Birthday Year</b>	1.168	1.140	1.136
<b>Hispanic</b>	0.788	0.861	0.861
<b>Mixed Race</b>	0.547	0.798	0.803
<b>Non-Black/Non-Hispanic</b>	0.732	0.973	0.984
<b>Father Prison</b>	2.542*	2.208*	2.913*
<b>Physical Risk Index</b>		1.003*	1.003*
<b>Father Prison * Physical Risk Index</b>			0.999

*Model 5*

In the second model that used Child Incarceration as the dependent variable, the second proxy for risk, Delinquency Index, was included. When this variable was added to the model, Father Prison had a slightly less significant effect on Child Incarceration (See Table 6). The Exp(B) value of Father Prison in this block suggests that children with a father who was in prison have 2.1 greater odds of becoming incarcerated. The Delinquency Index was also a significant predictor of Child Incarceration. For every one-unit increase in the Delinquency Index, children had 1.3 increased odds of experiencing incarceration.

When the interaction variable Father Prison \* Delinquency Index was also included in block 3 of this model, Father Prison and Delinquency Index produced significant results.

However, the interaction of them did not produce significant results, confirming that the risk

factor of delinquent behavior did not moderate the father-child transmission of criminal justice system involvement. However, out of all of the interaction terms that were tested in the models, this produced the most significant results, although ultimately failed to meet the  $p < 0.05$  threshold for significance consideration.

Table 6. Logistic Regression of Demographic Factors, Father Prison and Delinquency Index, and Moderators on Child Incarceration

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000*	0.000*
<b>Sex</b>	0.184*	0.228*	0.222*
<b>Birth Year</b>	1.168	1.294*	1.293*
<b>Hispanic</b>	0.788	0.744	0.754
<b>Mixed Race</b>	0.547	0.526	0.539
<b>Non-Black/Non-Hispanic</b>	0.732	0.682	0.677
<b>Father Prison</b>	2.542*	2.108*	3.536*
<b>Delinquency Index</b>		1.346*	1.380*
<b>Father Prison * Delinquency Index</b>			0.788

### *Model 6*

The final model that used Child Incarceration as the child's criminal justice involvement indicator, added the Enriching Environment Index variables in block 2. The odds of a child's likelihood of incarceration due to their father's imprisonment decreased in this block (See Table 7). The Exp(B) value of 2.101 suggests that children who have a father who was in prison have an increased odds of becoming incarcerated by 2.1. The Enriching Environment(1) variable was significant and produced an Exp(B) value of 0.367. With this result, a one-unit increase in the

Enriching Environment(1) value decreases the odds of Child Incarceration by 2.7. For Enriching Environment(2), the results showed that it was a significant predictor of Child Incarceration. The variable's Exp(B) value of 0.152, indicates a decreased odds of 6.6 for a child being arrested when the Enriching Environment(2) variable increases by one-unit, or when the Enriching Environment Index score of 0 is compared to a score of 2. The Enriching Environment(3) variable produced similar results to Enriching Environment(1) and Enriching Environment(2). It was a significant predictor of Child Incarceration and the Exp(B) value suggests that for an increase of one-unit of the variable, it decreases the odds of Child Incarceration by 6.0. All four of the variables of interest produced results in-line with the hypothesized outcomes in terms of significant predictors of child incarceration.

The third block of the final model sought to determine if the Enriching Environment Index variables were moderators between Father Prison and Child Incarceration. It was predicted that a high Enriching Environment Index score would weaken the effect of a father's imprisonment on the child's incarceration. When the three interaction variables were included, Father Prison was no longer significant. Enriching Environment(1), Enriching Environment(2), and Enriching Environment(3) were still significant, however, it was the interaction variables that were of interest in this model. The first interaction variable Father Prison \* Enriching Environment(1) did not produce significant results with a p-value of 0.383, which indicated it did not act as a moderator. The other interaction variables Father Prison \* Enriching Environment(2) and Father Prison \* Enriching Environment(3) were also not significant. These too, were not considered moderators between Father Prison and Child Incarceration, which was not predicted.

Table 7. Logistic Regression of Demographic Factors, Father Prison and Enriching Environment Index, and Moderators on Child Incarceration

<b>Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>
	Exp (b)	Exp (b)	Exp (b)
<b>Constant</b>	0.000	0.000	0.000
<b>Sex</b>	0.184*	0.190*	0.189*
<b>Birthday Year</b>	1.168	1.164	1.157
<b>Hispanic</b>	0.788	0.773	0.764
<b>Mixed Race</b>	0.547	0.712	0.723
<b>Non-Black/Non-Hispanic</b>	0.732	0.919	0.909
<b>Father Prison</b>	2.542*	2.101*	1.348
<b>Enriching Environment(1)</b>		0.367*	0.323*
<b>Enriching Environment(2)</b>		0.152*	0.144*
<b>Enriching Environment(3)</b>		0.167*	0.171*
<b>Father Prison * Enriching Environment(1)</b>			2.296
<b>Father Prison * Enriching Environment(2)</b>			1.099
<b>Father Prison * Enriching Environment(3)</b>			0.000

The results of all six of the models indicate that the risk and protective variables were significant predictors of both levels of criminal justice system involvement for children. For Child Arrest, a lower-level of involvement in the criminal justice system, the risk factors, Physical Risk Index and Delinquency Index were both significant and positive predictors. However, the effect of the Physical Risk Index was relatively small, increasing the odds of Child Arrest by 1.0 for every one-unit increase. The Delinquency Index had a much more impactful effect on Child Arrest, increasing the odds that the child would be arrested by 1.6 for every one-unit increase.

For Child Incarceration, the higher-level of involvement with the criminal justice system, Physical Risk Index had only a slightly greater effect. For every one-unit increase in the Physical Risk Index, the odds of Child Incarceration increased 1.0. Although the increase in impact between child criminal justice outcomes was minimal, the greater impact the variable had for incarceration was surprising given the higher prevalence of arrests compared to incarcerations. However, arrests may be so prevalent that for an incarceration to occur, a father's criminal justice involvement may hold more weight, which appears to be the case. Unlike the Physical Risk Index, the Delinquency Index decreased in effect from Child Arrest to Child Incarceration. This indicates that being involved in more delinquent events increases the likelihood of a child being arrested more than a child being incarcerated, although it has an impact for both. The odds for child arrest increased by 1.6 for each one-unit increase in Delinquency Index, while the odds for child incarceration increased by 1.3. This may be due to Delinquency being an indicator of risky behavior, which may cover more illegal activities that qualify for arrest than for incarceration.

While both trauma variables were significant predictors of child arrest and incarceration, neither of them were found to act as moderators between the in the intergenerational transmission of criminal justice involvement between father and child. Each of the interaction terms that combined the Father Prison variable and the trauma variables produced insignificant results. Although this does not provide insight into risk factors analyzed in this research and how they may increase the susceptibility of criminal justice involvement of children of imprisoned fathers, the results show that these forms of trauma and risk do still increase the child's likelihood of arrest and incarceration.

Unlike the trauma variables, the resiliency variable, Enriching Environment Index had a significant but negative effect on the child criminal justice involvement outcomes. Across the three dummy variables Enriching Environment(1), Enriching Environment(2), and Enriching Environment(3), the impact was less for Child Arrest than for Child Incarceration. The largest impact for Child Arrest was with Enriching Environment(3) which indicated that a one-unit increase, or going from an Enriching Environment Index score of 0 to 3 decreased the odds of Child Arrest by 4.4. This result follows logically: the sharper the contrast between the Enriching Environment Index scores, or in level of protective factors, the larger the increase in likelihood of arrest between children with Enriching Environment Index scores of 0 compared to the highest score of 3. However, this same logic did not apply to the incarceration results. The largest effect was visible in the Enriching Environment(2) variable, with a one-unit increase resulting in a decrease odds of 6.6 for incarceration. It is surprising that the Enriching Environment(2) had a larger effect than Enriching Environment(3), especially considering the results for Child Arrest followed an increasing progression of protection from criminal justice involvement as the score increased. However, it is not surprising that protective factors, as encompassed in the Enriching Environment Index, provided buffering against negative criminal justice involvement outcomes.

The results of the analyses in this chapter confirmed the previous findings that children of system-involved parents, and specifically children who have experienced a father's imprisonment, are more susceptible to becoming system-involved. This was confirmed with a sample of American youth who participated in the NLSY97 Survey and were tracked over the course of over two decades. The addition of risk and protective factors in the models also produced findings that suggest trauma and resiliency may contribute to a child's likelihood of



becoming arrested and incarcerated. However, these factors did not produce significant findings that would indicate they moderate the transfer of criminal justice involvement from one generation to another. More research, which should include other measures of trauma and resiliency, is needed to understand this relationship in more depth.

## Chapter 3

### Discussion

Despite the seemingly logical fit that risk and protective factors are involved in the parent-to-child transmission of criminal justice behavior, the results from the six models did not confirm all of the hypotheses that were predicted. Only the first two hypotheses were supported with significant results, suggesting that a father's imprisonment, as well as risk and protective factors, are predictors of child criminal justice outcomes. The third hypothesis, that risk and protective factors act as moderators in the relationship between the fathers imprisonment and the child's arrest and incarceration, was not supported by the data.

#### *Hypothesis 1*

For all of the models, Father Prison was a significant predictor of Child Arrest and Child Incarceration. In this analysis, it was also hypothesized that the father's criminal justice involvement would have a significant and positive impact in the criminal justice outcomes of children. This falls in line with the previous literature on the intergenerational transfer of criminal justice involvement that has been explored in various countries and populations.

In addition to confirming the general finding that a parent's criminal justice system involvement makes the child more likely to also become involved in the criminal justice system, these results provided insight into the specific influence that a father's imprisonment had on the child's likelihood of arrest and incarceration. As with the less severe system-involvement that the parent had experienced, the most severe involvement, imprisonment, also proved to have a negative impact on the child.

Multiple studies examined a similar relationship that was analyzed in this paper. Besemer et al. (2011) found that a parent's imprisonment was a significant predictor of child convictions for a sample of young males living in England. Many of the other studies did not always state if the parent had been incarcerated in jail or prison, making it difficult to solidify the impact of a parent's imprisonment. As was found in this analysis, Besemer et al.'s findings held true for youth living in the United States in the 1980s and '90s in the National Longitudinal Survey of Youth 1997 (NLSY97), despite being tailored to the English population. However, in this case, only a father's imprisonment was analyzed, rather than both parents. Regardless of a parent's imprisonment or the father-specific imprisonment, children were negatively impacted and showed an increased likelihood of criminal justice involvement.

Although the specific details around the father's imprisonment and the child's arrest and incarceration were not available, this research supports the extension of the intergenerational transfer of criminal justice system involvement. Additional details might clarify if there was a more significant impact by the father's imprisonment depending on the child's gender, or if the timing of the imprisonment in the child's life played a role in the child becoming more susceptible to multiple forms of criminal justice involvement. What was clear was that when fathers are removed from the household due to system-involvement and must serve their sentence in United States' prisons, there is a damaging effect on children that leads to the children's increased involvement in the criminal justice system, from fairly minor interactions, such as arrest, to the more severe involvement, such as incarceration.

## *Hypothesis 2*

As was also hypothesized, the risk and protective factors included in the models produced significant results, indicating that both childhood trauma and resilience factors predicted the criminal justice outcomes for children. When the other variables in the models were held constant, both risk factors, Physical Risk Index and Delinquency Index, had a significant and positive impact on both Child Arrest and Child Incarceration. Similar to other research that included other forms of “risk” in their models, there are clearly a number of factors that can influence one’s criminal justice involvement. The Physical Risk Index identified multiple risks, or traumas, that were indicative of more dangerous living conditions that can disrupt a child’s home life, making it less stable. This instability can produce stress and expose the child to influences that may push the child towards a criminal justice involved path. While previous research has sparingly included proxies for trauma as predictive variables, the Physical Risk Index was introduced as a unique measure of safety and stability at the child’s residence that had not previously been analyzed. This specific form of trauma had not been used in research prior to this analysis, but these findings suggest that this is a significant factor in a child’s tendency toward arrest and incarceration when the father’s imprisonment is taken into account. This preliminary research indicates that risks around a child feeling safe in their own home and neighborhood not only needs additional research to better target these and other risk factors, but also identify tangible solutions to reduce a child’s exposure to these risks.

Similarly, the Delinquency Index encompassed the delinquent tendencies of children, which has a natural correlation to adult criminal justice involvement. Previous studies found that

juvenile offenders had a tendency to extend their offending into adulthood.<sup>38</sup> However, those findings did not include the father's prison involvement in their analysis. This research takes into account both the father's imprisonment and the child's delinquency involvement to understand the child's criminal justice involvement as an adult. This study also shows beyond the binary response of the child being involved in delinquent activities, if that leads to criminal justice involvement, while taking the father's prison involvement into account. The Delinquency Index is a composite score that comprises ten delinquent activities. This provides an account of the degree of involvement in delinquent activities, with a higher Delinquency Index score indicating that the child has committed a wide range of delinquent activities.

Conversely, the protective factor, Enriching Environment Index, was also significant but in the opposite direction. The Enriching Environment Index served as a proxy for resiliency, which combined multiple protective factors that added to a supportive and stable environment for the child. The specific experiences that were encompassed in the Enriching Environment Index had not been explored as predictive variables in the previous literature around intergenerational transmission of criminal justice system involvement. The significant results indicated that items encompassed in the Enriching Environment Index can expose a child to more protection from negative and traumatic experiences, and can reduce the risk of arrest and incarceration when the father's imprisonment is taken into account. The Enriching Environment Index was a positive influence in children's lives, which deterred children who had more enriching environments from criminal justice involvement. Children who had less enriching environments were more prone to being arrested and incarcerated.

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<sup>38</sup> Stouthammer-Loeber, M. (2010). Persistence and desistance in offending. Unpublished report. Life History Research Program, University of Pittsburgh, Pittsburgh, PA.

Additionally, A Receiver Operating Characteristic (ROC) analysis was performed to identify the cut point of the Enriching Environment Index scores. However, the analysis did not produce significant results that would have indicated a a threshold for the variable. Had the results been significant, it would have indicated that there was a particular score that significantly altered the effect the Enriching Environment Index had on Child Arrest and Child Incarceration. For this reason, the Enriching Environment Index was transformed into dummy variables that compared the scores of 1, 2, and 3, to the score of 0. From these results, the change in the likelihood of arrest and incarceration could be compared as the scores increased.

### *Hypothesis 3*

While the first two hypotheses were supported by the results in each of the models, the third hypothesis was not confirmed by the analysis in this particular research. All of the models that included the interaction variables were designed to identify the risk and protective factors' role as moderators in the father-child criminal justice involvement transfer. However, none of the models produced significant results. This indicated that neither the risk nor the protective factors strengthened or weakened the effect that the father's imprisonment had on the child's likelihood of arrest or incarceration. These results were surprising due to the evidence around trauma and resiliency that support the belief that neither biology, nor the experiences that children have been exposed to, which may make them more prone to criminal justice involvement, are set in stone. Despite being exposed to certain traumas and risk factors, research around resiliency suggests that children can be redirected towards a healthier, more productive path, given the right resources.

It is doubtful that this particular research is significant enough to derail the support that has been gathered around the non-static impacts of trauma and the redeeming components of resiliency. Rather, what is more likely is that the risk and protective factors used in this analysis were not the best indicators of trauma and resiliency. While they may serve as significant predictors for Child Arrest and Child Incarceration, they may not encompass the trauma and resiliency that can mitigate or exacerbate the impact that comes with having a father who is in prison. A better moderator of trauma and resiliency might be the child's quality of relationship with the father. If the child has a positive and healthy relationship with the father, the negative impact of the father being in prison might be weakened. The positive and healthy relationship may encourage communication between the father and child, which may allow the father to remain as a stable parental figure in the child's life. However, if the child has a toxic relationship with the father, the child may be resentful and angry by the father's imprisonment, which may heighten the likelihood of the child being arrested or incarcerated. Although the risk and protective variables that were included in this analysis did not produce results indicative of moderator status, these findings should not be applied across all other trauma and resiliency variables that are more likely to moderate the relationship. More research is needed in the area of trauma and resiliency as it relates to the intergenerational transfer of criminal justice involvement.

### **Limitations**

This research around the intergenerational transmission of criminal justice involvement and risk and protective factors provides confirmation and insight that adds to the somewhat limited

literature in the combination of these subject areas. However, there are some limitations with the results from this research. First, the NLSY97 is a compilation of surveys conducted over a period of time. As with any survey, there can be accuracy, validity, and reliability issues. Because surveys rely on the responses of the participants, there is the chance for inconsistency between what is reported and what is actually true. Unlike scientific measurements, which have a higher degree of accuracy, survey responses can lean towards the bias of the individual. For the particular responses that were included in this analysis, the independent variables not of interest are likely to be accurate due to their objective nature. However, the independent variables of interest may have less accurate reporting. Surveys also present issues with validity, or measuring what is sought to be measured. The Index variables may not be comprised of questions that truly measure the physical risk, delinquency, or enriching environment. The Index scores may also vary to some degree due to different interpretations of the questions. The reliability of surveys is therefore also a potential complication with the NLSY97 data.

In addition to the issues with with surveys, each of the variables that were used in the models had their own shortcomings that limit the applicability of these findings to larger populations. One complication that arises with the Father Prison variable is the actual question that was used to identify the youth who had a father who was imprisoned. The question, “As far as you know, did your father ever serve a prison sentence for a conviction before your 16th birthday?” was asked later in the child’s life, in 2013. From the time the youth respondent was 16 until the survey question was asked, the reliability of the youth’s response likely decreased, given the significant amount of time that had passed.



The reliability of responses may also be affected because the Father Prison variable touches on sensitive information that the youth respondents may not feel comfortable disclosing. This may be due to the stigma that surrounds criminal justice involvement, which may make the child's report of the father's imprisonment a disclosure that requires a high degree of vulnerability and trust with the surveyor, and what they believe the surveyor will use the information for. There is also the possibility that children do not have full knowledge of their father's prison involvement. In some cases, the mother who is left at home with the child when the father is incarcerated may choose to not disclose the truth about the father's absence to the child. This may be for a variety of reasons, such as the stigma around criminal justice involvement, particularly with imprisonment, or potentially, for the safety and wellbeing of the child. However, this lower degree of reliability with the data can disrupt the findings. In other studies around criminal justice involvement, researchers chose to use police records, which ensure more reliability and accuracy than surveys.

Finally, the question itself is not fully encompassing of all of the youth respondents who may have had a father who was in prison. There may have been respondents who had a father who was imprisoned either before the respondent was born, or after the respondent turned 16. Although there has been some research around the timing of imprisonment of the parent and the effect it can have on the child, the NLSY97 survey does not include the whole spectrum of children who have experienced father imprisonment. Without having the means to verify the responses of participants in the NLSY97, or include all of the participants who had a father who was imprisoned at some point in the child's life, the results of this research should be interpreted with caution.

The responses for the other independent variables of interest that represented the risk factors were also likely to be less reliable than other measures of trauma or resiliency might be. The Physical Risk Index was comprised of questions that the youth responded to and questions that the surveyor responded to, all of which were subjective, such as “When you went to the respondent’s neighborhood/home, did you feel concerned for your safety?” Depending on the interviewer, the responses to the question may have a wide range of answers. Like this question, many of the other questions for the Physical Risk Index were about perception, which again is not a scientific measurement, but rather a feeling or judgement. There was also subjective bias for the questions that were included in the Index, and for why it was considered a proxy for risk.

The same was true for the Delinquency Index. The statements that comprised that index were only a sample of the range of delinquent events that could be included to measure a child’s delinquency. Delinquent acts that may have had the most influential role on the child’s future system involvement may not have been included. Similar to the response to the father’s imprisonment, the self-responses to the delinquency prompts may also hold stigma or potential backlash if the truth about delinquent or criminal acts were truthfully disclosed.

The Physical Risk Index and Delinquency Index scores were both determined based off of answers that were given when the youth were in their tween and early teen years. The Indexes were not representative of the physical environment that children might have been exposed to either before or after the question was asked, which also would have an impact on the child’s life. A respondent may have experienced a high-risk physical environment early on in life, which may have a negative, and potentially greater impact, than the physical environment they were exposed to at the time of the survey. Similarly, the Delinquency Index was only representative of

the child's delinquent behaviors up until the child was 16 years old, which may not hold the complete history of the child's delinquent involvement. Children may not have been involved in delinquent behaviors at 16, but may have begun their delinquent involvement after the survey occurred.

While these two variables represent some aspects of risk factors or trauma that may impact a child's life, they do not completely encompass all of the trauma that the child may have experienced. Each of the two risk variables may only touch on one small aspect of trauma, which does not give an exact indication of the other facets of trauma that children have experienced. Other traumatic experiences may be more severe and impactful than the trauma that is captured in the Physical Risk Index and Delinquency Index. With new research suggesting that the impacts of trauma may be passed from one generation to another, there is no way to account for the trauma that children have not experienced directly, but have been impacted by.<sup>39</sup> Further, each child is unique and may have different ways of processing and reacting to trauma. Research has found that people with different temperament styles exhibit different levels of both internalizing behaviors, internal processes within an individual like depression or stress, and externalizing behaviors, acting out externally such as aggression, when they are exposed to stress.<sup>40</sup> Individuals of a specific temperament type may be more likely to react to trauma exposure in an external way, such as through engaging in delinquent acts. The Delinquency Index may only capture some of the individuals who have been exposed to trauma, but not the

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<sup>39</sup> Serpeloni, F., Radtke, K. M., Hecker, T., Sill, J., Vukojevic, V., Assis, S. G. D., ... & Nätt, D. (2019). Does Prenatal Stress Shape Postnatal Resilience?—An Epigenome-Wide Study on Violence and Mental Health in Humans. *Frontiers in genetics, 10*, 269.

<sup>40</sup> Oldehinkel, A. J., Hartman, C. A., De Winter, A. F., Veenstra, R., & Ormel, J. (2004). Temperament profiles associated with internalizing and externalizing problems in preadolescence. *Development and psychopathology, 16*(2), 421-440.

individuals who process stresses internally. Finally, what is traumatic to one person may not be traumatic or impactful to another. While there are some major events and experiences that researchers have found that lead to negative health and wellness outcomes,<sup>41</sup> each person will have varied impacts of that trauma. These variations make measuring trauma exposure and its impacts, even more difficult.

The Enriching Environment Index was also part of the survey, but had less subjectivity in the responses. The questions in the Index were related to specific enriching items and activities that the youth respondent had access to, so there was less room for subjectivity, however, the inherent flaws with survey responses were still present. Additionally, only three questions were included in the Index, making the weight of each question very significant. This presented problems for the quality of the Index as it serves as a proxy for protective factors. Although the questions were related to enriching qualities, there are likely better enriching and protective assets or activities that the child could be exposed to. The Enriching Environment Index also only gives a glimpse of the protective factors that children may have, so it is difficult to glean if the factors that comprise the Index are enough to protect against the trauma that comes from having a father who is in prison. More questions around positive relationships, extracurricular activities, and access to educational resources, may all be larger contributors to an enriching environment, and to protective factors that boost a child's resiliency.

For all of the risk and protective variables, the questions that comprised the Index were not delineated. Rather, only a composite score was calculated based on the youth's responses to

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<sup>41</sup> Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine*, 14(4), 245-258.

all of the questions. Having a dataset that has all of the various questions and statements that the youth answered in addition to the composite scores for each variable would allow researchers to see if there were specific risk or protective factors within the indexes that had a more significant impact, or possibly acted as a moderator. When the various physical risks, delinquent acts, and enriching resources are all grouped by category into a scored variable, the influence of each of the individual questions is lost, which can further muddy the results. This can result in two respondents having the same score, but having different experiences that allowed them to arrive at that score. This makes the scores difficult to interpret because each event or experience may hold different weight, or have a different type or level of influence on the child. While the risk and protective factors in this analysis act as decent proxies for trauma and resilience, they are not perfectly representative, which adds hesitation to both the results that were in line with the hypotheses and those that were not.

The two dependent variables, Child Arrest and Child Incarceration, were based on the self-response of youth. These two variables, as was the case with the Father Prison variable, have attached stigma, which could affect the respondent's likelihood of answering the questions about their personal criminal justice history truthfully. Therefore the number of positive responses to Child Arrest and Child Incarceration may be an underrepresentation of the actual number of children who have been arrested or incarcerated. Unlike surveys, especially with questions around controversial or sensitive information, Police records would provide more reliability because they are official records, so there is much less room for error. However, because the NLSY97 dataset was based solely on survey responses, the results of this analysis should be interpreted with caution.

This research was also limited to the variables that were measured in the NLSY97 survey, and the even smaller selection of variables that were chosen for the models. The variables that could be considered proxies for trauma and resiliency were not extensive in this particular dataset. The best, albeit, flawed options were included. Additionally, the criminal justice involvement of the father was limited, particularly for the type of models this research sought to produce. While the father's imprisonment was included, that does not indicate that the mother's criminal justice involvement does not play a role. The mother's imprisonment was measured in the dataset, but did not produce robust enough data to be used in these models. Finally, measures of the criminal justice involvement of the children was extensive in the NLSY97 dataset, but for the purposes of this research, only a few variables were useful.

Due to the wide range of categories that surveys touched on, and that were included in the dataset, the NLSY97 was the best option for this analysis. However, the NLSY97 did not have a large selection of variables that were strong indicators of trauma and resiliency. Although there are complications with using Indexes, they provide broader insight into the total trauma and resiliency exposure, more so than an individual variable could, and were useful as a first step in analyzing risk and protective factors as moderators in the father-child transmission of criminal justice behavior.

### **Future Research**

This analysis only provided a starting point in understanding risk and protective factors, and their role as moderators in the intergenerational transmission of criminal justice involvement.

Meaningful insight, despite not producing results that supported the third hypothesis, was gained

from the lack of evidence that suggest the risk and protective variables that were used in this analysis. There are many extensions of this initial research that could help to understand the role trauma and resiliency play, and potentially conclude that they are in fact moderators.

The significance of trauma and resiliency are fairly recent topics of research, which limits the types of variables that have been developed to accurately measure them. One of the best and most well-known measures of trauma is the Adverse Childhood Experiences (ACEs) questionnaire that identified 10 different traumatic experiences that lead to poor health and wellness outcomes.<sup>42</sup> This measure of trauma could be included in future models that look at risk factors as a moderator, and may provide a more accurate and comprehensive accounting of significant trauma that has shown to have negative impacts on a child's life.

Extensions of resiliency and its role as a moderator might include information about the emotional well-being of the child. The presence of a positive adult role has been considered a protective factor that can help protect against the negative impacts of trauma.<sup>43</sup> Although that would require a survey response by either the child or someone who knows the child well, it may be one of the more significant measures of a protective factors that builds resilience.

In addition to including a broader range of proxies for risk and protective factors, future extensions of this research can include other measures of criminal justice involvement for the father and children. The criminal justice involvement of the father in this research was limited to imprisonment, but other degrees of criminal justice involvement may be influenced more by risk

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<sup>42</sup> Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine, 14*(4), 245-258.

<sup>43</sup> Harper Browne, C. (2014). The strengthening families approach and protective factors framework: Branching out and reaching deeper. *Washington, DC: Center for the Study of Social Policy, 21-24.*

and protective variables. A lower level of system-involvement may be influenced by risk and protective variables to a greater degree than the higher level of imprisonment. Similarly, the results that were produced in this research indicate that the independent variables had different effects on each of the dependent variables. Extending the research to include other dependent variables that represent other levels of criminal justice involvement for the child could also produce results that show risk and protective factors could moderate that outcome.

## **Implications**

### *Costs*

Any involvement in the criminal justice system produces staggering costs not only to the individual, but to their families and communities as well. For a father who has been imprisoned, the costs are especially high. In these scenarios, the costs are not limited to financial, but span many areas such as emotional, relational, and physical.

Families of prisoners bear the unseen costs of imprisonment, which are significant and varied. Often the father was one of, if not the primary, financial contributors to the family prior to incarceration. When the father is removed from the household and no longer able to contribute, but rather, presents costs in the form of phone calls, visitations, and costs incurred during his imprisonment, the parent who remains at home must deal with the financial burden. This decrease in financial stability contributes to the stress and anxiety already felt by the family members who are suffering from the loss of their father, husband, or boyfriend, to the criminal justice system. The removal of the father from the household adds both geographical and emotional distance from his family members, which is also damaging to their relationships. Even



once the father is released from prison, if he is released, there are added challenges when reuniting and returning to the life the father had before he left to serve his prison sentence. Family members may not want a relationship with the father due to safety concerns, damaged relationships, or broken trust. Additionally, prisoners who have been released often encounter difficulties when trying to obtain and maintain a job. Many of these factors can contribute to the father's recidivism, which then repeats the costly experience of being imprisoned initially.

The costs incurred from imprisonment go beyond just the imprisoned father and his family; the surrounding communities also are impacted. When crime occurs near one's home, feelings of safety and trust of community members decreases. This fear can spread quickly and widely, making community members less likely to engage with their neighbors, participate in activities outside in their neighborhood, and taking steps to increase their personal security. These are only costs to community members that are not directly impacted, but indirectly impacted, by the crime of the father.

For direct victims of the offense, the burden will range depending on the crime he committed that resulted in a prison sentence. In some cases, victims will lose possessions from the offender engaging in stealing. In other cases, victims may lose their own life, or the life of someone they love. The costs associated for the previous victims may be monetary, or a sense of security, among other things. However, in the latter case, the loss of a human life cannot be quantified or monetized. Friends and family who lose a loved one as a result of a crime may experience emotional, mental, and physical damage that can last indefinitely.

Beyond the expenses that governments incur from incarcerating inmates, there are many other costs that burden the imprisoned father's family and community that cannot fully be

identified or accounted for. With this and other research that seeks to identify the factors and potential moderators that make a child more likely to follow the path of their father, there is more potential to intervene effectively and prevent the next generation from offending and adding to these costs. Deterring individuals who have shown to be more susceptible to criminal justice involvement from doing so, can not only allow governments to save and redirect money to other areas such as education or health care, but it can reduce the significant intangible costs that families, communities, and victims experience as well.

### *Programs*

The research around criminal justice involvement is relevant to everyone due to the lasting and damaging impacts it has not only for the individual and their families, but also their communities. Because of the breadth and depth of the disruption and costliness, to the family, communities, and victims, using research to identify factors that may contribute to criminal justice involvement, or act as moderators in the intergenerational transmission of criminal justice involvement, is a worthwhile area to expand knowledge in.

Previous literature has shown that children who have a system-involved parent are more likely to also become system-involved compared to their peers whose parents were not involved in the criminal justice system. Starting with a baseline that is already more prone to criminal justice involvement, the need to identify factors that affect that susceptibility is crucial. Programs that seek to help children of system-involved parents, whether as a direct or indirect mission, would benefit from knowing what factors make the greatest impact. The benefits from

preventing this next generation from going down a path that leads to arrest or incarceration would also continue into future generations.

This may also help redirect money to programs that are producing better outcomes. Some programs that seek to help, may actually be ineffective. If it becomes clear what factors are needed to reduce a child's risk of criminal justice involvement, more money can be invested in those types of programs. This research provided support for the risk and protective factors' role as predictors of the child's criminal justice involvement. Programs focusing on connecting children to enriching environment resources, such as what were included in the Enriching Environment Index, may prevent children from becoming arrested or incarcerated. However, some of these resources may not be as relevant today as they were in 1996 when the survey question was asked. Questions about having a dictionary or computer at home are likely less significant now than they were more than twenty years ago.

Although the Enriching Environment Index did was not indicative of a moderating variable, there may be other moderators that programs can incorporate into their work so that children have access to more protective factors. If it is found that having a positive adult role model can mitigate the effects of trauma, programs should be encouraged to put more funding towards recruiting and keeping adult volunteers to serve as mentors. Additionally, programs that thought they were effective may find use information to change their strategy by incorporating findings into their service model.

With the results from the models incorporating the risk factors, programs that focus on neighborhood safety would likely prevent children from becoming arrested or incarcerated as adults. This may include programs that focus on gang and crime prevention, major sources of

disruption and violence in neighborhoods. If gang activity can be mitigated in neighborhoods, the physical risk that the children are exposed to would decrease, and would likely decrease the child's vulnerability to becoming arrested or incarcerated.

### *Policies*

Although the results from this research did not support the hypothesis that the Physical Risk Index, Delinquency Index, and Enriching Environment Index were moderators, there was evidence that the variables were still predictors of criminal justice involvement of the child. With this information, in spite of the limitations with the research, policy makers can focus attention on these factors and tailor policies accordingly. One of the questions included in the Enriching Environment Index was about the extracurricular activities the child is involved in. With this information, schools could implement a policy to require some extracurricular involvement by every student.

Additionally, the Physical Risk Index included information about the surrounding neighborhood of the child, and the degree to how safe it felt. If policies were set in place to ensure violence and delinquent behavior was reduced, this would impact the child's likelihood of becoming arrested or incarcerated. Also identifying the children who are more prone to delinquent involvement may be flagged by parents or teachers as more vulnerable to future system-involvement. If these children can be identified, school policies to connect more vulnerable children to after-school programs may provide support and resources that may balance out their susceptibility to system-involvement from their delinquent involvement.

For future extensions of this research, new analyses can also serve as relevant knowledge sources for policies related to criminal justice involvement. One policy area that has the potential to enhance the protective factors children of system-involved parents experience, is around the quality of the relationship the child has with the parent. Factors that can support or hinder this relationship are of particular interest, and are often determined by state or federal policies. Currently most jails and prisons set their own policies for visitation with family members, creating inconsistencies depending on where a parent may be held in corrections. In 2017, California Assembly Bill 103 outlined specific policies for California jails in relation to their visitation policies.<sup>44</sup> A number of requirements were included in the bill in an effort to make visitation more accessible to families. Part of the bill prohibits jails that provided in-person visitation from converting to video visitation. For facilities that did not offer in-person visitation, the bill requires that the jails provide one hour of remote visitation for each week at no charge to the visitor.

If the relationship with the system-involved parent is indeed a moderator of the parent-child transfer of criminal justice involvement, having access to the parent, if the parent is incarcerated, may be a crucial factor for the child to heal from losing the parent to the criminal justice system. Additionally, the different forms of visitation could also vary with their impact and with the quality of the relationship the child and parent are able to maintain. Policies such as AB 103 can have significant impacts in the lives of the system-involved and their children, making the need for evidence of risk and protective factors that are moderators, if there are any, all the more important.

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<sup>44</sup> AB 103, 2107-2018, Regular Session. (2017, June 27, 2017). Retrieved from [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB103](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB103).

### *Other Implications*

Research around the intergenerational transmission of criminal justice involvement presents both progress and complications. Unfortunately, the literature around the intergenerational transfer is limited, which not only means there are many other facets to explore and learn about, but it also means that this vulnerable population that has been identified in research, is not very well known to the broader population.

While most of the attention on criminal justice involvement is around the the individual who is system-involved, very little focus has been given to the families that the system-involved individual has left behind. For this reason, children of parents who have become involved in the criminal justice system have often been referred to as an “invisible population.”<sup>45</sup> However, this research, and future extensions of research around the negative impacts a father’s system-involvement has on his children, brings attention to the needs of this population. If it is clear that certain factors, including having a father who was imprisoned, or certain scores of the risk and protective factors, make children more likely to also become system-involved, then it is clear that more thought and attention should be given to recognizing this population and addressing their needs. However, with increased attention, there are complications with audiences interpreting and applying results.

This particular research identified risk and protective factors as predictors of child arrest and incarceration, which adds to the current state of literature. While this information is meaningful to some degree, the insignificant results from the moderating analysis does not deny the theory that children of system-involved parents are not destined to follow the same path. This

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<sup>45</sup> Hairston, C. F. (2007). Focus on children with incarcerated parents: An overview of the research literature.

is unfortunate due to the stigma that comes with having family that is involved in the criminal justice system, and the evidence that focuses solely on the negative influence a father's imprisonment has on his children. Evidence like this can be used to argue that these children are unable to be deterred from the path of their father, which may disincentivize individuals, programs, and policies from helping them, and instead use resources reactively rather than proactively. Evidence in support of the stigma may actually be a self-fulfilling prophecy for some of the children. If children are labeled as "bad," or "incapable of change," they may believe teachers, society, and everyone who has written them off as non-contributors to society, they may be less motivated to put in full effort to succeed in school and in their careers, or share their talents with the people who do not believe in them.

Although the child's susceptibility to arrest and incarceration was not moderated by the three risk and protective variables in this analysis, there are likely other risk and protective variables that do moderate the relationship. There were clear limitations with the variables that were used in this analysis. However, finding variables that account for trauma and resiliency more accurately, and extending the research further with new moderation analyses, will help to reduce the stigma that these children face, and hopefully prevent them from becoming involved in the criminal justice system.

## **Conclusion**

The research on the intergenerational transfer of criminal justice involvement is slowly gaining interest and attention. There are significant implications that come from understanding the nuances of that transmission, which make it an important and timely topic as the rates around

system-involvement in the United States continue to remain high. This particular research added insight about risk and protective factors that add to a child's likelihood of arrest and incarceration when their father has been imprisoned. The risk and protective factors did not produce results that indicate they act as moderators in the father-to-child transmission of criminal justice involvement, although it was hypothesized that they would. Further research into other risk and protective factors may find that there are moderators of the relationship, which would not only contribute to the current state of literature, but would have significant implications for programs and policies that seek to prevent criminal justice involvement.



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