

Child Maltreatment and Adolescent Outcomes: Analyzing Control and Learning Theory
Variables as Mediators

By:
Sibonelly J. Espitia Pierluissi
University of Colorado Boulder

A thesis submitted to the University of Colorado Boulder
In partial fulfillment of the requirements to receive
Honors designation in Sociology
Defended 24 March 2023

Thesis Advisor:
Dr. Kyle Thomas, Department of Sociology

Honors Council Representative:
Dr. Amanda Stewart, Department of Sociology

Outside Reader:
Dr. Kelly Gildersleeve, Department of Psychology and Neuroscience

ACKNOWLEDGEMENTS

I'd like to thank my thesis advisor, Dr. Kyle Thomas, for being such a dependable and patient mentor during this process. I came into this project with so many ideas yet knew very little about how to actually make it happen. Dr. Thomas's encouragement, reliability, and vast knowledge has played a critical role in the success of my thesis, and my growth as a student.

I'd also like to thank my Honors Coordinator, Dr. Amanda Stewart, for guiding me towards success since my junior year. Her bright attitude and care for each of her students made an impactful difference in the support I felt as I navigated my way through this new and exciting challenge.

Thank you to my outside reader, Dr. Kelly Gildersleeve, for taking the time to be in my committee and contributing her knowledgeable, experienced perspectives to ensure my thesis was of a high quality for all audiences. I am grateful for her willingness and excitement to support me despite her busy schedule.

Most importantly, I'd like to thank my parents, brothers, and partner for their endless love, empowering support for every goal I choose to pursue, and their admirable ambition which inspires me to give my work my absolute best every day. I could not ask for a better support system and I owe all my successes thus far to you.

Abstract

A number of studies have identified a strong relationship between a history of child maltreatment and later negative life outcomes, such as engaging in crime and delinquency. My study explores two potential mediating mechanisms from opposing criminological theories to promote our understanding of how this relationship unfolds. Social Control Theory (Hirschi, 1969) suggests that parental abuse and neglect results in weakened parental attachment (i.e., the child's attachment to their parent), which in turn removes constraints and allows the adolescent to engage in deviant acts. Differential Association Theory (Sutherland, 1947), on the other hand, suggests that early life experiences can influence individuals' self-selection into deviant peer groups, and thus results in increased levels of crime and deviance. Differences among adolescent outcomes are measured by self-reported delinquency variety scores, while using a scale measure of child maltreatment as the predictor. Each mediator was analyzed using data from the Pathways to Desistance Study ($N = 1,354$). Results from a Poisson Model, Ordinary Least Squares (OLS) Regression Model, and Structural Equation Model revealed that while both delinquent peers and parental attachment are statistically significant mediators, delinquent peers account for a greater share of the association between parental maltreatment and adolescent delinquency than did parental attachment.

Table of Contents:

I. Introduction..... 4

II. Literature Review.....6

 A. Negative Consequences of Child Maltreatment..... 6

 B. The Theoretical Framework..... 8

III. Data and Methods..... 12

 A. Outcome Variable..... 12

 B. Predictor Variable..... 13

 C. Social Control Theory Mediator..... 13

 D. Differential Association Theory Mediator..... 14

 E. Confounder Variables..... 14

 F. Analytic Plan..... 15

IV. Results..... 16

 A. Table 1..... 16

 B. Direct Effects..... 17

 C. Indirect Effects..... 18

V. Discussion..... 19

 A. Limitations..... 20

 B. Future Directions..... 21

VI. References..... 22

INTRODUCTION

Extant research findings have identified a strong relationship between experiencing child maltreatment and later negative life outcomes. These research findings suggest that “normal” child development is negatively impacted when individuals experience abuse and neglect in childhood and that these negative developmental experiences can pave the way for maladaptive behavior, including serious, chronic, and violent delinquency (Perez et al., 2018). Studies show that even after controlling for demographics that are correlates of crime (e.g., socioeconomic status and ethnicity), a history of abuse and neglect is associated with a 59% greater likelihood of arrest as a juvenile by 59%, a 28% greater likelihood of arrest as an adult, and a 30% greater likelihood of arrest for violent crime (Widom & Maxfield, 2001). It is also well known, however, that not all victims of child abuse and neglect go on to offend or perpetuate this cycle of aggressive behavior (Salzinger et al., 2007; Whittaker et al., 2006). To fully understand *why* this relationship unfolds in those who do go on to offend, focus must be shifted to the mechanisms which explain how child maltreatment influences later adolescent delinquency and aggression.

Despite the numerous studies identifying a relationship between child abuse and neglect and later problem behaviors, we know considerably less about the pathways that account for these relationships. Different criminological theories have crafted opposing theoretical explanations about these mediating mechanisms. From a control theory perspective, child maltreatment weakens the bond children have with their parents. In turn, the weakened bond releases the child of an important attachment that would otherwise restrain them from engaging in deviant groups and activities (Hirschi, 1969). From an opposing angle, learning theorists assert that victims of child maltreatment learn to value selfish and violent behavioral patterns of delinquency from members of their intimate groups, like their abusers. Victims learn definitions

favorable to crime from their abuser's behavior patterns at home and self-select their way into deviant peer-groups that enforce similar definitions (Sutherland, 1947). Accurate identification of the mechanisms which most account for the increased likelihood of adolescent deviance and aggression among victims of child maltreatment is crucial to effectively target strategies of intervention.

This study aims to add to the existing research and narratives in the research gap by using an existing dataset to analyze measures of social bonds and peer delinquency as mediating mechanisms theoretically supported by control and learning theories. This dataset is from the "Pathways To Desistance" study, designed to "describe the role of social context and developmental changes in promoting desistance or continuation of antisocial behaviors" in a sample of serious adolescent offenders (Mulvey, 2012). Findings of this study will pave the way for further research and inform future attempts at intercepting these processes.

LITERATURE REVIEW

NEGATIVE CONSEQUENCES OF CHILD MALTREATMENT

Efforts to address the problem of child maltreatment in the United States have led to an increase in social awareness and prevention programs, resulting in an overall continuous decline in reported abuse and neglect cases until recent years (Font & Maguire-Jack, 2020). Newer reports have shown an increase in Child Protective Services-substantiated rates of sexual abuse, while rates of physical abuse remain the same (Font & Maguire-Jack, 2020; Finkelhor et al., 2020). In 2021, a nationally estimated 600,000 children were confirmed as victims of abuse in the U.S., a rate of 8.1 per 1,000 children in the population. Of these reported cases, 76% were victims of neglect, 16% were victims of physical abuse, 10.1% were victims of sexual abuse, and approximately 1,820 children died from abuse and neglect (U.S. Department of Health & Human Services, 2023).

For those with a history of childhood maltreatment, the long-term consequences include high risk for maladaptive behaviors as well as negative mental and physical health outcomes later in life. Researchers studying these consequences have found that children with a history of maltreatment have a higher likelihood of “detrimental development outcomes,” such as psychopathology (Fox et al., 2015; Cicchetti & Toth 1995; Toth & Cicchetti, 2013). Cicchetti & Rogosch (2012) further described how early trauma could also affect the child’s biological and psychological development due to neural impairments disrupting the processes crucial to maintaining normal functioning and wellbeing. Previous literature on childhood trauma, most commonly referred to as adverse childhood experiences (ACE) has also introduced a psychological perspective to child maltreatment and its problematic outcomes. This research has found significant results linking higher numbers of ACEs (ACE score) with increased likelihood

of developing heart disease, cancer, morbid obesity, and other negative health conditions (Baglivio et al., 2020; Anda et al., 2006; Chartier et al., 2010; Felitti et al., 1998; Flaherty et al., 2013).

In the field of criminology, studies have found an association between individuals with high ACE scores and higher rates of juvenile delinquency and violent crime (Baglivio et al., 2020; Fox et al., 2015; Perez et al., 2018; Smith & Thornberry, 1995; Lansford et al., 2007). Although it is well known that people engage in the most delinquency during their adolescence, a multitude of studies have found that when matched with non-abused juveniles, adolescents with a history of maltreatment are significantly more likely to commit violence even after controlling for demographics that are correlates of offending (e.g., gender, race, socioeconomic status; Fox et al., 2015; Smith & Thornberry, 1995). In a study using longitudinal data from a community-based sample, Widom (1992) found abused groups to be 38% more likely to have been arrested for a violent crime and 53% more likely to have been arrested as a juvenile than matched non-abused groups (Lansford et al., 2007).

Adolescent delinquency as a negative outcome of child maltreatment is a crucial focus of research for various reasons. On the individual level, increased rates of adolescent delinquency along with higher rates of arrest further propel the risk of serious social consequences such as removed opportunities to obtain a high-school degree, pursue higher education, and secure high-paying careers. Furthermore, youths with a history of neglect are more likely to have higher rates of recidivism, which often pave the way and act as a predictive factor for long-term offenders (Ryan et al., 2013).

On the societal level, focusing on delinquency is crucial to successfully predict and reduce violent crime and victimization rates, as well as decrease the economic costs of crime. In

previous years, “a single violent offense (excluding homicide) cost society \$63,870 (Cohen & Piquero, 2009), and the average criminal career cost between \$2.47 and \$3.34 million per offender (Cohen, 1998)” (Fox et al., 2015). In 2017, crime costs were estimated at \$2.6 trillion, in which “violent crime accounted for 85% of costs” (Miller et al., 2021). In combination with research findings predicting delinquency and arrest rates from abused and neglected victims, the field can accurately predict future crime rates as well as identify communities at-risk for high crime rates. More accurate predictions of crime can lead to the development of effective intervention strategies which will target adolescent delinquency, decrease recidivism among juvenile offenders, and reduce violent crime and victimization rates.

THE THEORETICAL FRAMEWORK

Despite the numerous studies recognizing the existing relationship between child maltreatment and adolescent delinquency, researchers have only recently begun investigating the intervening mechanisms which account for this pathway’s development. Competing theories of crime propose different mechanisms to best explain how this path evolves. These theories are competing because of their different underlying assumptions of human nature, which explain an individual’s motivation to commit crime and drive the explanatory direction of the theory. Control theories, like Social Control Theory (Hirschi, 1969) assume that humans are born naturally self-interested so the motivation to commit crime is inherent and must be constrained by society. On the other hand, Learning theories, like Differential Association Theory (Sutherland, 1947) assume that humans are born neither “good” nor “bad,” and are rather malleable beings who learn the motivation to commit crime from their social interactions.

Social Control Theory (Hirschi, 1969) is a perspective centering around informal social control and posits that all individuals have an inherent drive to act selfish and aggressive,

instincts naturally conducive towards criminal behavior. Hirschi (1969) suggests that the difference, then, between those who engage in crime and those who do not are the social bonds that act as constraints and encourage prosocial conformity. Social Control Theory explains the importance of parents and schools as informal social controls through the attachment element of a social bond. The further removed adolescents are from these attachments, the less social control is present to restrain them from engaging in delinquent behaviors.

In abusive homes, parental maltreatment negatively affects the child's relationship with their parents, in which the child's withdrawal, fear, or mistrust in their caregivers results in weakened emotional attachment and a weakening of that social bond. The removal of a pro-social connection leaves the child free to engage in later adolescent delinquency. Similarly, the commitment element of a social bond also exerts social control, in which individuals refrain from delinquency to avoid putting important social relationships in jeopardy (Hirschi, 1969). Due to the abuse, victims of child maltreatment with weakened emotional attachment to their parents may grow to no longer value their parental relationships and engage in delinquency because they do not care about losing that relationship.

Manzoni and Schwarzenegger (2019) tested this Social Control Theory using data from 26 countries in a sample of juveniles in 7th-9th grade. After collecting measures for maltreatment, family bonds, moral values, self-control, delinquent peers, and violent delinquency, they found that family bonds played a significant role in mediating the relationship between maltreatment and violent delinquency (Manzoni & Schwarzenegger, 2019). Salzinger et al. (2007) studied the mediating effects of personal relationships using a similar theory base and found that adolescent parental attachment, as well as frequency of verbal and physical abuse by parents, were significant mediators in the relationship between child abuse and later violent

delinquency. These findings align with the control theory prediction which explains how parental maltreatment in childhood decreases the child's attachment to their abuser as well as the importance of that relationship, and increases their risk of engaging in adolescent violent delinquency.

Sutherland's Differential Association Theory (1947) postulates that, rather than having inherent instincts of behavior conducive to crime, criminal behavior is learned through communication in intimate groups. For this learning process to successfully take place, Sutherland argues that two elements must be present: specific skills and techniques for crime, and definitions favorable or unfavorable to crime (Matsueda, 2010; Sutherland, 1947). In this context, definitions are the motivations, justifications, drives, and attitudes for behaviors that one learns from their social groups. For criminal behavior, the definitions favorable to crime must outweigh the definitions unfavorable to crime. Sutherland (1947) further explains that definitions presented earlier, more frequently, for longer durations, and in more intense relationships are stronger.

In the context of childhood maltreatment and adolescent delinquency, abused children learn selfish and violent definitions favorable to crime from their caregivers from whom they first learn earliest in life, spend the most time with, see most frequently, and initially have stronger relationships with. According to Sutherland's chapter, "The Home and the Family in Relation to Crime," the process begins as the child assimilates in their home by observation of family members' attitudes and behaviors patterns of delinquency. The child then becomes delinquent because he learned these definitions at home, while in abusive homes, "emotional disturbances may drive the child away from home and into contact with delinquents" (Sutherland, 1947).

Lastly, the child's assimilation into delinquency will increase the probability they will come into intimate contact with delinquents through self-selection, enforcing their vulnerability to learn stronger definitions favorable to crime and less definitions unfavorable to crime. A study predicting deviant peer affiliation from types of child abuse found that victims of emotional abuse were more likely to quickly increase in deviant peer associations over time (Yoon et al., 2019). Manzoni and Schwarzeneger (2019) found delinquent peer associations to have the strongest mediating effect in adolescent delinquency in children with a history of maltreatment compared to family bonds, school bonds, moral values, and self-control (other potential mediators).

If the predictions of Social Control Theory are true, then it is expected that parental attachment will have a greater mediating effect in the pathway between child maltreatment and adolescent delinquency. In theory, parental abuse will weaken the child's attachment to their parents, which will remove an important form of social constraint and leave the child free to deviance. If the predictions of Differential Association Theory are true, it is expected that delinquent peer associations will have a greater mediating effect in this pathway. In this case, children initially learn selfish and aggressive definitions favorable to crime from their abusers, increasing the risk of self-selecting into deviant peer groups outside of the home. Increased duration and frequency of contact with delinquent intimate groups will continue to enforce the child's definitions favorable to crime, justifying their engagement in delinquent behavior.

DATA AND METHODS

This study analyzed data from the Pathways to Desistance Study (Mulvey, 2012), a longitudinal study that followed serious adolescent offenders during their transition from adolescence into early adulthood (N = 1,354). All participants in the sample were convicted of a serious offense in a juvenile or adult court system either in Maricopa County, Arizona, or Philadelphia County, Pennsylvania. The sample mainly consisted of males (86 percent), non-White persons (44 percent Black/ African American and 29 percent Hispanic), and ranged from 14 to 17 years in age (M = 15.9 years). Each participant had to provide informed assent and consent from their guardians, and were followed for seven years past their enrollment. Data was gathered from self-report information via in-person interviews.

OUTCOME VARIABLE

In the Pathways to Desistance dataset (Mulvey, 2012), delinquency is measured using the Self-Report of Offending Scale (SRO; Huizinga et al., 1991). This scale contains 24 items that capture the participant's engagement in different types of crime. For the current study, delinquency is captured using the Total Offending Variety- No Drug score for acts committed within the last six months. Because the score for this measure is calculated as a proportion, which is not suitable for our analysis method, a variety score measure of 20 crimes (e.g., property crime, theft, criminal possession of a weapon, aggravated assaults, etc.) was adopted from a previous study (see Thomas, Nguyen, and Jackson, 2022). This is a count measure in which the variable was recoded for each crime as "1" if the respondent "committed one or more crimes in the recall period" and "0" if they did not commit the crime during that time period (Thomas et al., 2022). The offending variety score for that respondent in that time point is the sum of the binary variables.

PREDICTOR VARIABLE

The Pathways Study dataset (Mulvey, 2012) did not contain direct measures of child maltreatment such as self-report questionnaires assessing specifically for physical abuse or neglect. However, they did include measures of Family Relationships with specific items capturing Parental Hostility. Because high rates of parental hostility are associated with an increased risk for child physical abuse ($r = .785$, $p < .001$; Farc et al., 2008; Haskett, Scott, & Fann, 1995), the current study used Parental Hostility measures, which include some concepts related to abuse (e.g., throwing items at child or aggressive responses) from the Pathways data as a proxy of child maltreatment. Researchers utilized The Quality of Parental Relationships Inventory (Conger et al., 1994) to gauge the level of affectivity in the participant's relationship with their caregiver. Maternal and paternal hostility were each measured in separate 21-item, 4-point response scales with responses ranging from *Never* (= 1) to *Always* (= 4). Items in the maternal hostility scale ($\alpha = .85$) included questions like "how often does your mother get angry at you," and a composite score was calculated by the mean of twelve items. Items in the paternal hostility scale ($\alpha = .88$) included questions like "how often does your father throw things at you," and had a composite score equivalent to the mean of twelve items. Higher scores indicated less nurturing, more hostile parental attitudes towards their children, and therefore are more likely to capture child maltreatment.

SOCIAL CONTROL THEORY MEDIATOR

Parental attachment was not directly measured in the Pathways to Desistance Study (Mulvey, 2012). Supported by studies which show a strong correlation between parental warmth and healthier attachments (Suchman et al., 2007; Harper et al., 2003), the current study used the Pathways measure of Parental Warmth to estimate parental attachment (i.e., the child's

attachment to their parent) by proxy. Maternal and paternal warmth were included in the 21-item scales mentioned previously from The Quality of Parental Relationships Inventory (Conger et al., 1994). Answers followed a 4-point response scale ranging from *Never* (= 1) to *Always* (= 4). Items in the maternal warmth scale (alpha = .92) asked questions such as “how often does your mother let you know she really cares about you,” with a composite score calculated by the average of 9 items. Items in the paternal warmth scale (alpha = .95) asked questions such as “how often does your father tell you he loves you,” with a composite score calculated by the average of 9 items. Higher scores indicated more nurturing relationships, and therefore are more likely to capture strong parental attachment.

DIFFERENTIAL ASSOCIATION THEORY MEDIATOR

Perceived peer delinquency was captured in the Pathways to Desistance Study (Mulvey, 2012) using the Peer Delinquent Behavior items (subscale adapted from the Rochester Youth Study, Thornberry et al., 1994). This scale assesses the adolescent’s perception of the degree of antisocial activity among their peers (e.g. “How many of your friends have sold drugs?) in a 5-point scale with responses ranging from *None of them* (=1) to *All of them* (=5). Composite scores are calculated by the mean rating of 12 items, and higher scores indicate higher levels of peer delinquency (alpha = .92).

CONFOUNDER VARIABLES

The current study controlled for the following characteristics from the Pathways to Desistance dataset: impulse control, gender, ethnicity, and neighborhood conditions. Gender and ethnicity measures were collected using self-report questions at baseline. Impulse measures were also collected at baseline using the Emotionality Activity, Sociability, and Impulsivity (EASI) inventory (Buss & Plomin, 1984), which included statements like “tends to be impulsive” and

“self-control is difficult for him/her”; these items were rated on a 5-point Likert scale ranging from *Strongly Disagree* (=1) to *Strongly Agree* (=5) ($\alpha = .67$). Neighborhood condition measures were gathered at each wave using The Neighborhood Conditions Measure (Sampson & Raudenbush, 1999) and assessed the physical and social disorder of the participant’s neighborhood (e.g., “cigarettes in the streets or in the gutters,” “people using needles or syringes to take drugs”). The 21 items in the scale are rated on a 4-point Likert scale ranging from *Never* (=1) to *Often* (=4) (total $\alpha = .94$).

ANALYTIC PLAN

In this study, I use 99.19 percent of the individuals included in the Pathways to Desistance study ($N = 1,343$) as my final analytic sample. Eleven responses were excluded due to missing data on my key variables of interest. The results are presented in several stages. First, I use a Poisson Model to examine the direct effects of parental maltreatment as a predictor of adolescent offending. Then, I use an Ordinary Least Squares (OLS) Regression Model to separately predict parental warmth and perceived peer delinquency as outcomes of parental hostility while controlling for confounding variables. Last, I employ a Structural Equation Model (SEM) to analyze the direct effects of parental maltreatment on adolescent delinquency, as well as the indirect effects of parental maltreatment on adolescent delinquency via peer delinquency and parental attachment as mediators. Models 1 through 4 in *Table 1* present the results.

RESULTS

Table 1. Statistical Analysis Results of Models ($n = 1,343$)

	POISSON SANS MEDIATORS Model 1	OLS- PEER DELINQUENCY Model 2	OLS- PARENTAL WARMTH Model 3	SEM (w/ MEDIATORS) Model 4
	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
Variables				
Parental Hostility	.540*** (.048)	.511*** (.027)	-.515*** (.025)	.291*** (.047)
Black	-.275*** (.061)	-.104*** (.020)	.136*** (.019)	-.202*** (.053)
Male	.596*** (.096)	.297*** (.025)	.071** (.023)	.461*** (.086)
Impulsivity	-.344*** (.027)	-.229*** (.010)	.035*** (.009)	-.222*** (.025)
Neighborhood				
Conditions	.119*** (.033)	.212*** (.012)	.072*** (.011)	.000 (.030)
Perceived Peer				
Delinquency	--	--	--	.458*** (.026)
Parental Warmth	--	--	--	-.089** (.031)

** $p \leq .01$; *** $p \leq .001$

DIRECT EFFECTS

A Poisson Model was used to predict the direct effects of parental hostility as a predictor of adolescent offending. After correcting the standard error, results indicated that adolescents who report more parental maltreatment engage in delinquency at a higher rate than adolescents who do not report parental maltreatment (model 1: $b = .540$, standard error [SE] = $.048$, $p < .001$).

Results of the OLS Regression which show parental hostility as a predictor of perceived peer delinquency demonstrated that adolescents who report more parental maltreatment are more likely to engage with delinquent peers; specifically, a one unit increase in parental hostility is associated with a .51 unit increase in perceived peer delinquency (model 2: $b = .511$, SE = $.027$, $p < .001$), after statistically controlling for potential confounders. On average in adolescents who report more parental hostility, males score .30 units higher in perceived peer delinquency when compared to females, and black adolescents score .1 units lower in perceived peer delinquency when compared to non-black adolescents.

Results of the OLS Regression model which show parental hostility as a predictor of parental warmth indicated that adolescents who report more parental maltreatment are less likely to report stronger parental attachment; specifically, a one unit increase in parental hostility is associated with an approximate .52 unit decrease in parental warmth (model 3: $b = -.515$, SE = $.025$, $p < .001$), after statistically controlling for potential confounders. On average in adolescents who report more parental hostility, males score .07 units higher in parental warmth when compared to females, and black adolescents score .14 units higher in parental warmth when compared to non-black adolescents.

Finally, analysis of the Structural Equation Model that included parental warmth and perceived peer delinquency as mediators revealed that there is a significant direct positive relationship between parental hostility and offending; in other words, adolescents who report more parental maltreatment, weaker parental attachments, and greater associations with delinquent peers are more likely to engage in delinquency (model 4: $b = .291$, $SE = .047$, $p < .001$).

INDIRECT EFFECTS

To investigate which mediating variable, parental attachment or delinquent peers, had a greater share of the effect between parental maltreatment and adolescent delinquency, I estimated the indirect effects of parental maltreatment via each mediator. Mediation results revealed that parental maltreatment had a statistically significant positive indirect effect on delinquency via delinquent peers ($b = .234$, $p < .001$) and via parental attachment ($b = .046$, $p < .001$). The total overall effect (the sum of direct and indirect effects) of parental maltreatment on adolescent delinquency including these mediators was $b = .571$. My results demonstrated that 40 percent of the total overall effect of parental maltreatment on adolescent delinquency operates through delinquent peers, and 8 percent of the total effect of parental maltreatment on adolescent delinquency operates through parental attachment.

DISCUSSION

As initiatives to respond to the social issue of child maltreatment in the United States have increased, a multitude of studies exploring negative life outcomes in victims have recognized a consistent relationship between child maltreatment and adolescent delinquency. Nonetheless, a scarce amount of literature attempts to explore the intervening mechanisms through which this path unfolds. To contribute to the literature, my research was designed to investigate two mediating variables supported by opposing criminological theories and determine which variable accounted for the greater share of the effect between parental maltreatment and adolescent delinquency. The first mediating variable, parental attachment, is supported by Social Control Theory (see Hirschi, 1969) and suggests that as children who are abused by their parents become detached, the weakened bond removes an important social constraint, and the individual is free to engage in delinquency. Differential Association Theory (see Sutherland, 1947) supports the second mediating variable which is peer delinquency; in this perspective, the abused child first learns definitions favorable to crime in the home through their aggressive parents. If the child learns more definitions favorable to crime than definitions unfavorable to crime, they are more likely to self-select into deviant peer groups outside of the home who continue to enforce delinquent behavior.

Analysis revealed that both parental attachment and delinquent peers have a statistically significant partial mediating effect in the relationship between parental maltreatment and adolescent delinquency. These findings are consistent with other research shaped by a similar theoretical framework (Yoon et al., 2019; Manzoni & Schwarzenegger, 2019; Salzinger et al., 2007). The work done in this study found support for both Social Control Theory (Hirschi, 1969) and Differential Association Theory (Sutherland, 1947). However, the greater indirect effect of

parental maltreatment on adolescent delinquency via delinquent peers in the Pathways population suggests that there is stronger support for Sutherland's theory.

LIMITATIONS

Although the Pathways to Desistance data was useful in that it captured a variety of constructs in a large sample of delinquent adolescents, it was limited in more accurate measures of abuse and attachment which were specific to my study. Lack of accurate measures decrease the present study's construct validity since it is possible that using a proxy measure of these constructs might overestimate or underestimate the true effects seen in the population, as well as the present study's construct validity. Moreover, external validity of the results is limited in that the sample consists mainly of male, non-white adolescents in Phoenix and Pennsylvania, which is not representative of the general population in the United States. Since the existing dataset did not use a matched-pairs design and I did not employ one either, I am unable to compare the relationships found in the delinquent adolescent population with a non-delinquent adolescent population. This comparison could identify important differences which could make preventative efforts more effective. Lastly, another limitation to the construct validity of this study was the age in which adolescents were interviewed. While this was still a longitudinal study, participants enrolled in their teenage years, so parental hostility measures were captured in their adolescence rather than childhood and could have resulted in less accurate reports of hostility, and by proxy, maltreatment.

FUTURE DIRECTIONS

To address these limitations, I plan to conduct further research on this topic with expanded methods. In terms of limited data and the validity of the current study, I will employ a similar analysis using the same statistical models with data from the “Adolescent Outcome of Physically Abused Schoolchildren” study, which was designed to examine the outcomes in “mid to late adolescence of preadolescent physically abused and matched non-maltreated children first studied at ages 9-12 years” (Salzinger et al., 2008). Not only does this dataset use a matched-pairs design with confirmed abused and non-abused cases, but it also includes more accurate measures of maltreatment, attachment and follows participants from childhood into adolescence. External validity using both datasets will be slightly improved with a more representative sample because of greater ethnic and geographic diversity. After analyzing both datasets, I will be able to compare results and hopefully strengthen the validity of my current findings.

Despite these limitations, the present study remains important because it provides evidence for future delinquency prevention programs to focus specifically on removing adolescents from delinquent peer groups and increasing the number of strong prosocial bonds they have to their community through school, extracurricular activities, and positive interpersonal connections. The broader impacts of these changes include improvements in maltreatment victims’ overall well-being (Fox et al., 2015; Cicchetti & Toth 1995; Baglivio et al., 2020), a decrease in negative economic consequences of crime (Miller et al., 2021; Cohen & Piquero, 2009), and reduced rates of violent crime (Smith & Thornberry, 1995; Widom, 1992; Lansford et al., 2007).

References

- Anda, Robert F., Vincent J. Felitti, J. Douglas Bremner, John D. Walker, Charles Whitfield, Bruce D. Perry, Shanta R. Dube, and Wayne H. Giles. 2006. "The Enduring Effects of Abuse and Related Adverse Experiences in Childhood: A Convergence of Evidence from Neurobiology and Epidemiology." *European Archives of Psychiatry and Clinical Neuroscience* 256:174-186. doi: 10.1007/s00406-005-0624-4.
- Baglivio, Michael T., Kevin T. Wolff, Matt DeLisi, and Katherine Jackowski. 2020. "The Role of Adverse Childhood Experiences (ACEs) and Psychopathic Features on Juvenile Offending Criminal Careers to Age 18." *Youth Violence and Juvenile Justice* 18(4):337-364. <https://doi.org/10.1177/1541204020927075>.
- Buss, Arnold H. and Robert Plomin. 1984. *Temperament: Early Developing Personality Traits*. 1st ed. London: Psychology Press.
- Chartier, Mariette J., John R. Walker, and Barbara Naimark. 2010. "Separate and Cumulative Effects of Adverse Childhood Experiences in Predicting Adult Health and Health Care Utilization." *Child Abuse & Neglect* 34(6):454-464. doi: 10.1016/j.chiabu.2009.09.020.
- Cicchetti, Dante and Fred A. Rogosch. 2012. "Neuroendocrine Regulation and Emotional Adaptation in the Context of Child Maltreatment." *Monographs of the Society for Research in Child Development* 77:87-95. doi: 10.1111/J.1540-5834.2011.00666.X.
- Cicchetti, Dante and Sheree L. Toth. 1995. "A Developmental Psychopathology Perspective on Child Abuse and Neglect." *Journal of the American Academy of Child Adolescent Psychiatry* 34:541-565. doi: 10.1177/1077559513500380.

- Cohen, Mark A. 1998. "The Monetary Value of Saving a High-Risk Youth." *Journal of Quantitative Criminology* 14:5-33.
- Cohen, Mark A. and Alex R. Piquero. 2009. "New Evidence on the Monetary Value of Saving a High Risk Youth." *Journal of Quantitative Criminology* 25(1):25-49.
doi:10.1007/s10940-008-9057-3.
- Conger, Rand D, Xiaojia Ge, Glen H. Elder Jr., Frederick O. Lorenz, and Ronald L. Simons. 1994. "Economic Stress, Coercive Family Process, and Developmental Problems of Adolescents." *Children and Poverty* 65(2):541-561. <https://doi.org/10.2307/1131401>.
- Farc, Maria-Magdalena, Julie L. Crouch, John J. Skowronski, and Joel S. Milner. 2008. "Hostility Ratings by Parents at Risk for Child Abuse: Impact of Chronic and Temporary Schema Activation." *Child Abuse & Neglect* 32(2):177-193.
<https://doi.org/10.1016/j.chiabu.2007.06.001>.
- Felitti, Vincent J., Robert F. Anda, Dale Nordenberg, David F. Williamson, Alison M. Spitz, Valerie Edwards, Mary P. Koss, and James S. Marks. 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.
- Finkelhor, David, Kei Saito, and Lisa Jones. 2020. *Updated Trends in Child Maltreatment 2018*. Durham, NH: Crimes Against Children Research Center.
- Flaherty, Emalee G., Richard Thompson, Howard Dubowitz, Elizabeth M. Harvey, Diana J. English, Laura J. Proctor, and Desmond K. Runyan. 2013. "Adverse Childhood Experiences and Child Health in Early Adolescence." *JAMA Pediatrics*, 167:622-629.
doi:10.1001/jamapediatrics.2013.22.

- Font, Sarah A., and Kathryn Maguire-Jack. 2020. "The Scope, Nature, and Causes of Child Abuse and Neglect." *The ANNALS of the American Academy of Political and Social Science* 692(1):26–49.
<https://doi.org/10.1177/0002716220969642>(<https://doi.org/10.1177/0002716220969642>)
- Fox, Bryanna H., Nicholas Perez, Elizabeth Cass, Michael T. Baglivio, and Nathan Epps. 2015. "Trauma Changes Everything: Examining the Relationship Between Adverse Childhood Experiences and Serious, Violent and Chronic Juvenile Offenders." *Child Abuse & Neglect* 46:163-173. doi: 10.1016/j.chiabu.2015.01.011.
- Harper, Felicity, W. K., Ileana Arias, and Amy S. House. 2003. "The Moderating Role of Parental Warmth on the Effects of Exposure to Family Violence." *Violence and Victims* 18(3):353-367. doi:10.1891/vivi.2003.18.3.353.
- Hirschi, Travis. 1969. *Causes of Delinquency*. Berkeley: University of California Press.
- Huizinga, David, Finn-aage Esbensen, and Anne Wylie Weiher. 1991. "Are There Multiple Paths to Delinquency?" *The Journal of Criminal Law and Criminology* 82(1):83-118.
<https://doi.org/10.2307/1143790>.
- Lansford, Jennifer E., Shari Miller-Johnson, Lisa J. Berlin, Kenneth A. Dodge, John E. Bates, and Gregory S. Pettit. 2007. "Early Physical Abuse and Later Violent Delinquency: A Prospective Longitudinal Study." *Child Maltreatment* 12(3):233-245.
doi:10.1177/1077559507301841.
- Manzoni, Patrik and Christian Schwarzenegger. 2019. "The Influence of Earlier Parental Violence on Juvenile Delinquency: The Role of Social Controls, Self-Control, Delinquent Peer Association and Moral Values as Mediators." *European Journal on Criminal Policy and Research* 25(1):225-239. doi:10.1007/s10610-018-9392-3.

- Matsueda, Ross L. 2010. "Sutherland, Edwin H.: Differential Association Theory and Differential Social Organization." Pp. 899-907 in *Encyclopedia of Criminological Theory*, edited by Francis T. Cullen and Pamela Wilcox. Thousand Oaks: SAGE Publications, Inc. doi: <http://dx.doi.org/10.4135/9781412959193.n250>.
- Miller, Ted R., Mark A. Cohen, David I. Swedler, Bina Ali and Delia V. Hendrie. 2021. "Incidence and Costs of Personal and Property Crimes in the USA, 2017." *Journal of Benefit-Cost Analysis* 12(1):24-54. doi: <https://doi.org/10.1017/bca.2020.36>.
- Mulvey, Edward P. Research on Pathways to Desistance (Maricopa County, AZ and Philadelphia County, PA): Subject Measures, 2000-2010. Inter-university Consortium for Political and Social Research (distributor), 2016-03-14. Retrieved January 16, 2023. <https://doi.org/10.3886/ICPSR29961.v2>.
- Mulvey, Edward P. 2012. "The Pathways to Desistance Study: Design and Methods." Paper presented at the American Society of Criminology Annual Meeting, Chicago, IL.
- Perez, Nicholas M., Wesley G. Jennings, and Michael T. Baglivio. 2018. "A Path to Serious, Violent, Chronic Delinquency: The Harmful Aftermath of Adverse Childhood Experiences." *Crime & Delinquency* 64(1):3-25. <https://doi.org/10.1177/0011128716684806>.
- Ryan, Joseph P., Abigail B. Williams, and Mark E. Courtney. 2013. "Adolescent Neglect, Juvenile Delinquency and the Risk of Recidivism." *J Youth Adolescence* 42:454-465. doi:10.1007/s10964-013-9906-8.
- Salzinger, Suzanne, Margaret Rosario, and Richard S. Feldman. 2007. "Physical Child Abuse and Adolescent Violent Delinquency: The Mediating and Moderating Roles of Personal Relationships." *Child Maltreatment* 12(3):208-219. doi: 10.1177/1077559507301839.

- Salzinger, Suzanne, Richard Feldman, and Daisy S. Ng-Mak. 2008. "Adolescent Outcome of Physically Abused Schoolchildren (Dataset)." National Data Archive on Child Abuse and Neglect. Retrieved September 22, 2022 (<https://doi.org/10.34681/A1P9-KV02>).
- Sampson, Robert J and Stephen W. Raudenbush. 1999. "Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods." *American Journal of Sociology* 105(3):603-651. <http://dx.doi.org/10.1086/210356>
- Smith, Carolyn and Terence P. Thornberry. 1995. "The Relationship Between Childhood Maltreatment and Adolescent Involvement in Delinquency." *Criminology* 33(4):451-481. doi:10.1111/j.1745-9125.1995.tb01186.x.
- Suchman, Nancy E., Bruce Rounsaville, Cindy DeCoste, and Suniya Luthar. 2007. "Parental Control, Parental Warmth, and Psychosocial Adjustment in a Sample of Substance-Abusing Mothers and Their School-Aged and Adolescent Children." *Journal of Substance Abuse Treatment* 32(1):1-10. <https://doi.org/10.1016/j.jsat.2006.07.002>
- Sutherland, Edwin H.. 1947. "The Home and the Family in Relation to Crime." Pp. 153-172 in *Principles of Criminology*. 4th ed. J.B. Lippincott Co.
- Sutherland, Edwin H. 1947. *Principles of Criminology*. 4th ed. J.B. Lippincott Co.
- Thomas, Kyle J., Holly Nguyen, and Erica P. Jackson. 2022. "Value Orientations, Life Transitions, and Desistance: Assessing Competing Perspectives." *Criminology* 61(1):103-131. <https://doi.org/10.1111/1745-9125.12325>
- Thornberry, Terence P., Alan J. Lizotte, Marvin D. Krohn, Margaret Farnworth, and Sung Joon Jang. 1994. "Delinquent Peers, Beliefs, and Delinquent Behavior: A Longitudinal Test of Interactional Theory." *Criminology* 32(1):47-83. <https://doi.org/10.1111/j.1745-9125.1994.tb01146.x>

Toth, Sheree L. and Dante Cicchetti. 2013. "A Developmental Psychopathology Perspective on Child Maltreatment." *Child Maltreatment* 18(3):135-139. doi:

10.1177/1077559513500380.

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. 2023. *Child Maltreatment 2021*. Available from

<https://www.acf.hhs.gov/cb/data-research/child-maltreatment>.

Widom, Cathy S. 1992. "The Cycle of Violence." Research in Brief, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, September 1992, NCJ 136607.

Widom, Cathy S., and Michael G. Maxfield. 2001. "An Update on the 'Cycle of Violence.'" Research in Brief, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, February 2001, NCJ 184894.

Yoon, Dalhee, Susan Yoon, Miyoung Yoon, and Susan M. Snyder. 2019. "Developmental Trajectories of Deviant Peer Affiliation in Adolescence: Associations with Types of Child Maltreatment and Substance Use." *Children and Youth Services Review* 105.

<https://doi.org/10.1016/j.chilyouth.2019.104446>.