

Child Maltreatment and Aggression: The Mediating Role of Moral Disengagement, Emotion
Regulation, and Emotional Callousness Among Juvenile Offenders

A Dissertation
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY

by
Hilary B. Hodgdon
August 2009

ABSTRACT

Title: Child Maltreatment and Aggression: The Mediating Role of Moral Disengagement, Emotion Regulation, and Emotional Callousness among Juvenile Offenders

Candidates Name: Hilary B. Hodgdon

Degree: Doctor of Philosophy

Temple University, 2009

Doctoral Advisory Committee Chair: Laurence Steinberg

Child maltreatment has been linked consistently to the development of aggressive behavior. However, not all maltreated youth later demonstrate increased aggression. The present study examined two avenues of inquiry to explain this observed heterogeneity in a sample of 470 serious juvenile offenders enrolled in a prospective longitudinal study. Official reports of maltreatment history were obtained from the Department of Human Services (DHS) in Philadelphia providing information about the nature and incidence of abuse and neglect in childhood of the study participants. The first line of inquiry explored if particular maltreatment subtypes, including physical abuse, sexual abuse, neglect, and emotional maltreatment, as well as the severity and frequency of these maltreatment types, was related to increased aggression in adolescence. The second line of inquiry used structural equation modeling (SEM) to examine the impact of three mediational factors, namely, emotion regulation, moral disengagement, and emotional callousness, on the maltreatment-aggression relation. I expected that not only would maltreatment in childhood be related to increased aggression in adolescence, but that this relation would be mediated by disruptions in emotional and cognitive development. In addition, I expected that these underlying mechanisms would be specific to particular subtypes of maltreatment.

As expected, child maltreatment was related to increased aggression among youth. Physical abuse and emotional maltreatment emerged as the two maltreatment

subtypes that best predicted aggression, whereas neglect and sexual abuse were not related to increased aggression. The study findings also suggested that higher severity and frequency of maltreatment contributes to increased aggression. Additionally, physical abuse and emotional maltreatment appeared to have a multiplicative effect, in that the combination of these two maltreatment subtypes resulted in the highest levels of aggression among youth in this study. Finally, as hypothesized, poor self-regulation mediated the relation between physical abuse and aggression, while heightened moral disengagement mediated the relation between emotional maltreatment and aggression.

ACKNOWLEDGEMENTS

I would like to thank the individuals that made the Research on Pathways to Desistance study possible. I would also like to thank the Office of Juvenile Justice and Delinquency Prevention for providing the financial support that made this study possible. In addition, I would like to thank the *Pathways* interviewers, youths who participated in this research, and Lynne Raju who spent countless hours aiding in the coding of study data. Lastly, I would like to thank the Department of Human Services in Philadelphia for their help in accessing and obtaining information regarding the child welfare history of the *Pathways* study participants.

I would like to thank the Temple faculty who has provided me with their valuable feedback throughout the course of my graduate career. First I would like to thank the members of my Dissertation Committee, Hongling Xie, Marsha Weinraub, Phil Harris, and Joseph Ryan, for their feedback and insight into my project. I am especially grateful to Deborah Drabick for her constant support, encouragement, and investment in my individual and professional growth. Above all, I would like to thank my advisor and mentor, Laurence Steinberg, who has always provided me with his invaluable guidance and support. He has not only provided me with a strong foundation from which to continue to grow as a researcher and professional, but also challenged me to think about social and psychological issues in novel and exciting ways that has greatly informed my intellectual development.

Finally, I would like to express my gratitude to my parents, Dennis and Perry, who have provided me with continual love, support, and advice. It is ultimately through

their support and value in higher education that I have been given the opportunity to pursue my own professional goals and for that I am endlessly thankful.

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CHAPTER 1

INTRODUCTION

There is little doubt that maltreatment during childhood has significant negative impact on individual development (Cicchetti, 1989; Cicchetti & Lynch, 1995; Cicchetti & Valentino, 2006). One consequence of considerable social and economic impact is the link between child maltreatment and later antisocial, delinquent, and violent behavior. Although only 20% of maltreated children have later juvenile justice system involvement (Widom, 1989b), there is a plethora of literature indicating that child maltreatment increases risk for later antisocial and delinquent behavior (Farrington, 2004; Lewis, Mallouh, & Webb, 1989). Recent research demonstrates that children involved in the child welfare system for abuse or neglect have a heightened probability of “crossing over” into the juvenile justice system during adolescence (i.e., “crossover youth,” as termed by Ryan and colleagues, 2005, 2007). In addition, multiple studies examining rates of self-reported history of child maltreatment among juvenile offenders find that from 26% to 84% to have been abused or neglected (Kratkoski, 1982; Lewis & Shanok, 1979; Steele, 1976). So while not all individuals who have been maltreated engage in antisocial behavior, and while not all antisocial youth have a history of maltreatment, it is clear that child maltreatment is a common experience for many juvenile offenders.

Youth violence is a delinquent outcome that is especially relevant when considering the impact of child maltreatment on development. There are several compelling reasons to consider the links between violent and aggressive outcomes and maltreatment. The first is that the link between maltreatment and violent behavior is more clearly established than for other forms of delinquency. The second is that violent

offending represents an especially aberrant and serious problematic outcome, both for the individual and for broader society.

Much research has examined delinquency rather generally when considering adolescent outcomes among maltreated youth. However, there is evidence to suggest that looking at violent and non-violent forms of delinquency is both valuable and informative. For example, there is research indicating that the association between child maltreatment and delinquency is due partly to higher rates of status offenses and income generating crime among maltreated youth, a relation which may be driven by co-occurring contextual factors, such as poor parental monitoring or poverty, rather than maltreatment per se (Zingraff et al., 1993). However, the direct link between child maltreatment and later aggressive and violent behavior has been more strongly established (Farrington, 2004; Lewis, Mallouh, & Webb, 1989), demonstrating a developmental course that begins in early childhood and continues throughout adolescence and young adulthood. Additionally, the relation between child maltreatment and violent behavior holds true even when potential confounds, such as poverty, cumulative risk, and family structure are accounted for (Mersky & Reynolds, 2007; Smith & Thornberry, 1995).

The study of violent behavior among youth is particularly valuable because it represents an outcome that has incredibly deleterious consequences for both the individual and broader society. Although the rate of violent crimes committed by juveniles has declined substantially since its peak in 1993, youth violent crime continues to represent a substantial social problem, as over 100,000 adolescents were arrested for a violent offense in 2006 (Office of Juvenile Justice and Delinquency Prevention, Juvenile Justice Bulletin, 2008). In its most extreme form, youth violence results in death and

homicide is the second leading cause of death among individuals 10 to 24 years of age (National Adolescent Health Information Center, 2007). The estimated economic impact of violent crimes committed by juveniles is upwards of \$158 billion annually (Centers for Disease Control, 2008), not to mention the emotional and psychological impact that violent acts have on victims. In addition, according to the Surgeon General's Report on youth violence (1999), youth who engage in serious violence exhibit multiple co-occurring problem behaviors, such as substance abuse and precocious sexual behavior, that place them at further risk for later negative outcomes. Lastly, while non-violent forms of delinquency are considered to be relatively normative behaviors for most adolescents, engaging in violent crimes is clearly aberrant and correlated with a host of related problems (Farrington, 2004). Violent youth represent a very small proportion of adolescents (Elliot, Huizinga, & Morse, 1986), but commit a proportionally high number of crimes (Tolan & Gorman-Smith, 1998), indicating that if this group could be successfully treated, or if their violent behavior could be prevented, the benefit both to the individual and to broader society would be enormous.

Entrance into the child welfare system represents an important intervention point for maltreated youth that could potentially serve to prevent later aggression and violence. However, intervention and prevention efforts at this point of entry would be better informed if specific links between different forms of maltreatment and violence, as well as the processes that underlie them, could be more clearly established. The present study will focus specifically on the relation between child maltreatment and violent behavior in adolescence, as well as factors that may potentially mediate this relation.

Child Maltreatment, Aggression, and Violence

There is a mountain of evidence to suggest that child maltreatment increases risk for aggressive and violent behavior across various stages of development (Barnow & Lucht, 2001; Connor et al., 2004; George & Main, 1979; Kotch, Lewis, Hussey, English, et al., 2008; Levendosky, Huth-Bocks, & Semel, 2002; Manly et al., 2001; Teisl & Cicchetti, 2008; Trickett, Noll, Reiffman, & Putnam, 2001; White & Widom, 2003; Widom, 1989a). Child maltreatment has been identified as a particularly salient risk factor for the development of aggressive behavior among children (Erikson, Egeland, & Pianta, 1989; Finzi, Ram, Har-Even, Shnit, et al., 2001; George & Main, 1979; Manly, Kim, Rogosch, & Cicchetti, 2001). A seminal observational study by George and Main (1979) demonstrated that abused toddlers, as opposed to non-abused toddlers, exhibited increased rates of physical aggression towards both their peers and parents. In addition, a large literature supports a link between child maltreatment and violent offending in both adolescence and adulthood (Crooks, Scott, Wolfe, Chiodo, et al., 2007; Malinosky-Rummell & Hansen, 1993; Maxfield & Widom, 1996; Mersky & Reynolds, 2007; Rivera & Widom, 1990; Smith, Ireland, Thornberry, & Elwyn, 2008; Smith & Thornberry, 1995; Widom, 1989b; Widom, Schuck, & White, 2006). A study by Widom and Maxfield (2001) demonstrated that an official history of abuse or neglect increases the likelihood of arrest as a juvenile for a violent crime by 30%. Research examining rates of past maltreatment among juvenile offenders indicate that around 75% of adolescents incarcerated for a violent crime have a history of maltreatment during childhood (Lewis et al., 1979). Lastly, child maltreatment appears to increase risk for the perpetration of violence towards intimate partners in both adolescence (Wolfe, Wekerle, Scott, Staatman, et al., 2004; Wolfe, Scott, & Wekerle, 2001) and adulthood (Bevan & Higgins, 2002;

Feerick, Haugaard, & Hien, 2002). Taken together, the evidence suggests that aggressive and violent behavior represents a significant problematic outcome for individuals who experience maltreatment early in life.

Although at first glance it appears that the relation between child maltreatment and aggressive and violent behaviors is well established, upon closer inspection it becomes clear that this conclusion is tentative because some forms of maltreatment, namely physical abuse and neglect, are more widely studied than others. The construct of “child maltreatment” is broadly defined as an extreme failure of the individual’s “expectable environment” (Cicchetti & Lynch, 1996) and includes a wide variety of caretaker behaviors, including both acts of commission (i.e., physical, sexual, and emotional abuse) and acts of omission (i.e., neglect). Definitions provided for the specific subtypes of maltreatment that will be considered in the present study are based on Barnett, Manly, and Cicchetti’s (1993) framework, as it is multi-dimensional, developmentally informed, and most relevant and useful to address the questions of interest. *Physical Abuse* is defined as physical injury inflicted by the caregiver by non-accidental means, ranging in severity from infliction of minor marks during a spanking or other beating, to the infliction of an injury requiring hospitalization or resulting in permanent disfigurement, disability, or death. *Sexual Abuse* is defined as any attempted or completed sexual contact between a child and caregiver that occurs for purposes of the caregiver’s sexual gratification or financial benefit. *Neglect*, which encompasses two domains including physical and supervisory neglect, is defined as a failure on the part of the caregiver to meet the minimum degree of care in providing for the child’s physical needs and/or ensure the child’s safety through the provision of adequate and appropriate

supervision. Lastly, *Emotional Maltreatment* is defined as “persistent or extreme thwarting of the child’s basic emotional needs,” including “parental acts that are harmful because they are insensitive to the child’s developmental level” (p. 67). This category encompasses multiple parental acts, including verbal abuse, domestic violence exposure, parentification of the child, exposure to extremely erratic or unpredictable parental behavior (such as psychotic behavior or attempted suicide), abandonment, confinement or isolation, and threatening or attempting to hurt or kill the child without resulting physical injury.

Physical abuse and neglect appear to show the most consistent relation to increased rates of aggression and violence among youth (Knutson, DeGarmo, Koepl, & Reid, 2005; Lewis, Mallouh, & Webb, 1989; Widom, 1989a). The literature examining the link between a history of sexual and/or emotional abuse is less conclusive and indicates that these forms of maltreatment may contribute to the development of aggression and violence only when certain conditions are met, such as in the case of sexual abuse that is severe, chronic, and perpetrated by a close family member (McGee, Wolfe, & Wilson, 1995; Trickett & Gordis, 2004). So although physical abuse and neglect are especially robust predictors of the outcomes of interest, it is difficult to completely discount the impact of sexual and emotional abuse on youth violence because more research is needed. Addressing these gaps in the literature is particularly important for targeting and tailoring intervention and prevention efforts, because if sexual abuse, for example, is indeed not predictive of later violence, then therapeutic efforts designed to reduce maltreatment-related youth violence might better focus on other areas. I turn next to the available evidence examining the relation between each subtype of maltreatment

and the development of aggressive behavior in childhood and violent behavior in adolescence.

Physical Abuse

Physical abuse comprises approximately 17 percent of reported cases of maltreatment (U.S. Dept. of Health and Human Services, 2007). Children with a history of physical abuse are clearly more aggressive towards both peers and adults (Bousha & Twentyman, 1984; Erickson, Egeland, & Pianta, 1989; Finzi, Ram, Har-Even, Shnit, et al., 2001; George & Main, 1979; Herra & McCloskey, 2003; Hoffman-Plotkin & Twentyman, 1984; Kauffman & Cicchetti, 1989; Salzinger et al., 1993). Higher rates of anger and non-compliance have been observed among physically abused toddlers as young as 24 months of age (Erickson, Egeland, & Pianta, 1989). Research by Finzi and colleagues (2001) comparing physically abused, neglected, and non-maltreated school-aged children found physically abused children to be significantly more assaultive, aggressive, and antisocial than both neglected and non-maltreated children. In addition, numerous studies have demonstrated that physically abused children tend to receive high scores on scales of aggression from multiple informants, including teachers (Erickson, Egeland, & Pianta, 1989; Shonk & Cicchetti, 2001); parents (Walker, Downey, & Bergman, 1989); camp counselors (Kaufman & Cicchetti, 1989; Shonk & Cicchetti, 2001); and peers (Rogosch & Cicchetti, 1994). A history of physical abuse has been linked to increased aggression towards peers (Egeland & Sroufe, 1981; George & Main, 1979; Hoffman-Plotkin & Twentyman, 1984; Mueller & Silverman, 1989; Shields & Cicchetti, 1998; Wolfe, 1998; Wolfe & Jaffe, 1991), even in response to prosocial or distress cues (Cicchetti & Lynch, 1995; Main & George, 1985). Physically abused

children are also more likely to be bullies (Shields & Cicchetti, 2001) and to respond to conflict or perceived conflict with reactive forms of aggression (Connor et al., 2004; Shields & Cicchetti, 1998).

Physical abuse is often examined in relation to violent forms of crime, as aggressive behavior is thought to be transmitted from parents to children as described in the “cycle of violence” hypothesis (Thornberry et al., 2003; Widom 1989a, 1989b, 1994). The “cycle of violence” hypothesis has its roots in social learning theory, as it posits that violent forms of behavior and conflict resolution are learned within the context of the family and passed down from generation to generation (Widom, 1989a). Indeed, numerous studies indicate that adolescents with a history of physical abuse are more likely to engage in violent behavior and offending (Malinosky-Rummell & Hansen, 1993; Maxfield & Widom, 1996; Smith, Ireland, & Thornberry, 2005; Smith & Thornberry, 1995; Widom, 1989b; Wolfe & Jaffe, 1991). Multiple studies conducted by Widom and colleagues (1989b, 1996, 2001, 2006) demonstrate that an official history of physical abuse predicts later arrest for violent offenses, and a recent prospective study by Lansford, Miller-Johnson, Berlin, Dodge, et al. (2007) found early physical abuse to be predictive of arrest as a juvenile for a violent offense among a community sample. In a study of 884 high risk urban youth enrolled in the Rochester Youth Development Study, a history of physical abuse during adolescence (i.e., after age 12), as determined by review of Child Protective Services records, was positively related to violent offending in late adolescence (age 16-18) and young adulthood (age 20-22), even when prior levels of problem behavior were controlled for (Smith et al., 2005). In addition, physically abused adolescents also demonstrate increased rates of violence towards dating partners

(Malinosky-Rummell & Hansen, 1993; Reuterman & Burcky, 1989; Wolfe et al., 2001).

So it appears that physical abuse is predictive of various forms of aggression and violence across both development and populations, highlighting its importance as a risk factor for violent crime.

Neglect

There is also strong evidence supporting a connection between neglect and later aggressive and violent behavior, although the relative impact of neglect does not appear to be as strong as that which is observed for physical abuse. Thus, neglected individuals have higher rates of aggression and violence than non-maltreated individuals, but these rates are generally lower than what is observed among physically abused individuals (Crittenden, 1992; Haskett & Kistner, 1991; Hildyard & Wolfe, 2002; Hoffman-Plotkin & Twentyman, 1984; Widom, 1989a; Widom & White, 1996). Neglect is the most common form of maltreatment, comprising more than 60 percent of official reports of abuse in 2005 (U.S. Dept. of Health and Human Services, 2007). Research examining outcomes in childhood generally finds that neglected children are more aggressive than non-maltreated children (Bousha & Twentyman, 1984; Erickson, et al., 1989; Manly, Kim, Rogosch, & Cicchetti, 2001), but less so than physically abused children (Crittenden, 1992; Haskett & Kistner, 1991; Hildyard & Wolfe, 2002; Hoffman-Plotkin & Twentyman, 1984). For example, one study by Bousha and Twentyman (1984), examining aggression among physically abused, neglected, and non-maltreated children during mother-child interaction, found neglected children to be more physically and verbally aggressive towards their mothers than the non-maltreated children, but less so than physically abused children. However, neglected children receive higher ratings on

measures of aggressive behaviors by their teachers (Erickson, Egeland, & Pianta, 1989) and caretakers (Kotch, Lewis, Hussey, English, et al., 2008). A study by Knutson, DeGarmo, Koepl, and Reid (2005) using a multi-method and multi-informant design also found a positive relationship between neglect and aggressive behavior in a disadvantaged sample.

Studies examining outcomes among neglected adolescents suggest that neglect is connected to higher rates of violent behavior at this age as well (Chapple, Tyler, & Constance, 2005; Maxfield & Widom, 1996; Smith, Ireland, & Thornberry, 2005; Widom, 1989b). One study found that neglected youth were more than three times as likely to have engaged in some form of violent offending (OR = 3.59, CI = 1.61, 8.01), in late adolescence (ages 16 – 18) than their non-maltreated counterparts (Smith, Ireland, & Thornberry, 2005). Research by Widom and colleagues (1989a, 1996) examining the link between official reports of neglect and later arrest for a violent crime indicates that rates are slightly lower among neglected than physically abused individuals (12.5 – 20% versus 15.8 – 21%, respectively), but still much higher than among non-maltreated youth. A similar study by Mersky and Reynolds (2007) found the relation between physical abuse versus neglect and violent offending to be comparable. Taken together, the available evidence suggests that neglect is at least as important to consider in the prediction of later aggression and violence as physical abuse.

Sexual Abuse

The literature examining the relation between sexual abuse and later aggression and violence also supports a positive relationship (see Trickett & Gordis, 2004, for a comprehensive review), but the findings are not as consistent as those for physical abuse

and neglect. A number of studies indicate that a history of sexual abuse in childhood is predictive of increased rates of aggression (Friedrich, Beilke, & Urquiza, 1987; Trickett, Noll, Reiffman, & Putnam, 2001; Trickett & Putnam, 1991) and violent behavior (Feerick, Haugaard, & Hien, 2002; Herrera & McCloskey, 2003), and only one study found no relation between sexual abuse and aggression (Manly, Kim, Rogosch, & Cicchetti, 2001). However, other studies find an association between sexual abuse and aggression only for specific expressions of aggression (Connor, Steingard, Cunningham, Anderson, et al., 2004; Swanston, Parkinson, O'Toole, Plunkett, et al., 2003). For example, Connor et al. (2004) found sexual abuse to be related to reactive, but not proactive, forms of aggression.

There is also evidence suggesting that the impact of sexual abuse on aggressive and violent outcomes may not be as long lasting as for other forms of abuse. Research by Widom and colleagues (1989b, 1996) indicates that an official history of sexual abuse does not increase risk for later arrest for a violent crime. A series of studies by Trickett and colleagues (1994, 2001, 2003) found that whereas sexually abused youth evinced increased levels of aggression during childhood when compared to a non-abused group, at later follow up (7-8 years after inception of the study, when the participants were adolescents), there were no group differences in aggression. However, an additional study of the same sample examining sub-groups of sexually abused females found that girls who had specific abuse-dependent profiles, namely those girls who had a chronic course of sexual abuse involving sexual penetration perpetrated by the biological father or a father figure, did have elevated rates of aggression at the 7 year follow up (Trickett, Noll, Reiffman, & Putnam, 2001). So it may be that isolated instances of sexual abuse that are

not perpetrated by a caregiver have an immediate impact on aggression that dissipates over time.

A major methodological limitation of research examining the impact of sexual abuse on development is that most of these studies utilize all female samples. This limitation is especially relevant when considering violent outcomes, as the vast majority of violent offenses are committed by males (Mersky & Reynolds, 2007). What little research that has been conducted examining violent outcomes among males with an official history of sexual abuse finds no relationship (Widom, 1989b; Widom & White, 1996). Some suggest that these observed differences are due to abuse-dependent factors that vary by sex. For example, females are more likely than males to experience a chronic and severe course of sexual abuse perpetrated by a family member (Trickett et al., 2001). As discussed previously, it appears that sexual abuse is only predictive of violent behavior in adolescence when these particular conditions are present. This suggests that if a similar cluster of factors were used to predict violent behavior among sexually abused males, such as abuse profiles accounting for the severity, chronicity, and perpetrator of the abuse, there potentially would be a positive relation, but no such research has been conducted to date. The paucity of research in this area may be due, at least in part, to lower rates of reporting of sexual abuse among males, leading to attenuated variability in these abuse-dependent factors and thereby limiting researchers' ability to examine sexual abuse profiles among males. Or perhaps among males, experiencing severe and chronic sexual abuse perpetrated by a close family member leads to high levels of shame and denial, decreasing the likelihood that the abuse would be reported at all.

Although the available research suggests that sexual abuse increases risk for aggression and violence, at least among girls (Trickett & Gordis, 2004), it is also clear that the relation between sexual abuse and aggression may be limited to specific forms of aggressive behaviors and is most likely moderated by abuse specific factors, such as the relationship between victim and perpetrator. Taken together, the evidence points to a specific pathway between sexual abuse and aggression (chronic and severe abuse by a family member), while the developmental impact of other forms of maltreatment may operate via multiple, often co-occurring, pathways. For example, the finding that sexual abuse only contributes to reactive aggression suggests that a specific underlying developmental mechanism may be at work, such as disruptions in emotion regulation. It is apparent that more research is needed to definitively determine and clarify the impact of sexual abuse on later violent behavior, especially among males.

Emotional Maltreatment

The final type of maltreatment to be considered, emotional or psychological maltreatment, is a comparatively new area of inquiry in the study of child outcomes of abuse and neglect, and is the least researched form of maltreatment. Emotional maltreatment is thought to commonly co-occur, albeit often unmeasured and unreported, with other forms of abuse and neglect, as well as existing in its own discrete forms (Garrison, 1987; Hart & Brassard, 1987; Hart, Brassard, & Carlson, 1996). Unlike physical abuse, sexual abuse, or even neglect, emotional maltreatment does not leave overt physical signs in its wake. However, the psychological, behavioral, and developmental consequences of emotional maltreatment are thought by some to be more severe than those linked to any other form of abuse (Hart, Brassard, & Carlson, 1996) and

one study has demonstrated that accounting for emotional maltreatment does aid in the prediction of maladjustment beyond other forms of abuse (Schneider, Ross, Graham, & Zielinski, 2005).

Aggressive and violent outcomes among emotionally maltreated individuals appear to be similar to those who suffer from a history of physical abuse or neglect, although definitive conclusions cannot be drawn because of the small number of studies. One study by Vissing et al. (1991) of 3,346 parents found a positive relation between parents' use of verbal aggression and rates of physical aggression in their children, who ranged in age from 2 to 17. In addition, a similar study by Hart, Brassard, and Carlson (1996) found that adolescents with a history of emotional maltreatment were more likely to engage in physical aggression. Finally, the only study to examine emotional maltreatment specifically among juvenile offenders, found more reported verbal aggression by their mothers than among non-offenders (Spillane-Grieco, 2000), although violent offending was not examined specifically as an outcome.

A study by McGee, Wolfe, and Wilson (1997), which used Barnett, Manly, and Cicchetti's (1993) definition of emotional maltreatment (as opposed to the above research, which mainly examined the impact of "verbal abuse"), examined behavioral outcomes in a group of 160 maltreated adolescents. This particular study is unique in that the sample was drawn from a pool of participants with an official record of maltreatment, used a self-report of maltreatment history and severity, and then cross-validated this information. The authors also controlled for contextual variables (including non-maltreatment stressful life events, IQ, SES, age, and sex); compared the effects of emotional maltreatment to that of physical abuse, sexual abuse, and neglect; and used a

demographically matched comparison group. The authors found that even when controlling for contextual variables and other forms of maltreatment, emotional maltreatment accounted for the largest amount of unique variance in self-reported externalizing symptoms on the Youth Self Report (YSR; Achenbach, 1991). In addition, the presence of emotional maltreatment appeared to “potentiate” the effects of other types of maltreatment. That is, when emotional maltreatment was added to the prediction equation, other types of maltreatment showed associations that were not demonstrated via examination of simple correlations. For example, physical abuse was not related to externalizing behaviors unless emotional maltreatment was accounted for, suggesting that emotional maltreatment had a suppressive effect and improved the utility of other maltreatment types for the prediction of externalizing behavior. It is possible that the experience of emotional maltreatment adds a cognitive aspect to abuse that is not always present. For example, the effect of being hit or beaten is further activated when accompanied by belittlement, as these verbal attacks may lead victims to internalize and blame themselves for the abuse, further contributing to maladjustment. Unfortunately, the authors did not examine subscales of the YSR that would speak more specifically to the outcomes such as aggression and violence.

There is clearly more work to be done regarding if and how emotional maltreatment increases risk for the development of aggression and violence. However, these results provide limited evidence that emotional maltreatment is an important factor to consider, in isolation or in combination with other forms of maltreatment, when thinking about the development of aggression.

To summarize, a review of the literature on maltreatment and youth aggression leads to several conclusions. First, physical abuse in childhood is clearly linked to increased rates of aggressive behavior and violent offending. Second, a history of neglect is also predictive of aggression and violence, but may have a weaker impact on these outcomes than does physical abuse. Third, there is evidence to suggest that sexual abuse is linked to increased aggression in childhood among females, but not necessarily violent offending in adolescence, suggesting that the impact of sexual abuse may be short-lived. In addition, the impact of sexual abuse varies as a function of abuse-specific factors, such as the severity and perpetrator of the abuse. (A lack of research concerning sexually abused males makes it difficult to draw firm conclusions about the impact of sexual abuse on violent offending). Lastly, the research regarding the effect of emotional maltreatment is not extensive enough to draw definitive conclusions, but suggests a positive relation between emotional maltreatment and aggression. In addition, there is some research suggesting that emotional maltreatment may serve to potentiate the effect of other forms of abuse on aggressive outcomes, indicating that it is an important factor to consider when examining the relation between maltreatment and aggression.

Mechanisms of Action

The relations among various forms of child maltreatment, especially physical abuse and neglect, and later aggression and violence are well established. A more informative line of inquiry lies in the examination of the mechanisms that confer risk for aggressive or violent outcomes among maltreated youth. There are several reasons that the consideration of underlying mechanisms is important to furthering knowledge regarding the links between maltreatment and aggression and violence.

The first argument supporting the exploration of mechanisms is that there is heterogeneity even among individuals who display aggressive and violent behaviors. For example, as delineated by Hodgins (2007), two subgroups of males who display persistent violent offending can be identified through examination of psychological profiles in childhood. Although both groups have childhood-onset conduct disorder, an early marker for persistent anti-social behavior (Moffitt, 1993), one group has co-occurring callous-unemotional traits whereas the other does not. Both groups display increased rates of aggressive behavior, but the conduct-only group is more likely to engage in reactive forms of aggression in response to perceived threat, while the conduct plus callous-unemotional traits group engages in both reactive and instrumental forms of aggression and begins committing violent offenses at a younger age. Most importantly, the presence of callous-unemotional traits is related to insensitivity to punishment and increased sensitivity to reward, greatly impacting how these children respond to behavioral interventions. Taken together, consideration of the specificity of the effects of the different forms of maltreatment and the heterogeneity observed among violent offenders has important implications for how interventions are designed and targeted.

A second reason to explore the underlying mechanisms linking maltreatment and aggression is that although different forms of maltreatment appear to lead to similar outcomes, there are subtle differences in outcomes that may be accounted for through the examination of theoretically informed developmental processes. For example, the observation that physical abuse is clearly related to aggression and violence, while sexual abuse is related to aggression, but not necessarily later violent behavior, can be at least partially explained through contrasting social learning and attachment accounts of the

phenomenon. Physical abuse may be especially predictive of violent outcomes because it leads to modeling of antisocial attitudes or maladaptive conflict resolution strategies learned through observation in the physically abusive environment, which in turn increases risk for violent behavior. In contrast, sexual abuse only may contribute to violent behavior if certain conditions are met, such as abuse perpetrated by a primary caretaker, presumably disrupting attachment and leading to poor emotion regulation. With this in mind, I turn next to a discussion of two theoretical perspectives, social learning and attachment theories, that are particularly relevant to the consideration of child maltreatment and how this disruption in the parent-child relationship may lead to developmental outcomes that increase risk for violent behaviors.

Theoretical Perspectives

Several theoretical perspectives that consider a central role for the parent-child relationship in individual development provide a framework within which to consider potential underlying processes connecting maltreatment and children's aggression and violence. *Attachment theory* proposes that the individual's internal representations of the self and others, or internal working models, serve to guide future behavior and are developed within the context of the parent-child relationship (Bowlby, 1977, 1980). *Social learning theory* posits that the individual learns to adopt specific behaviors through the observation and modeling of others (Bandura, 1977). Both theories view early experiences within the context of the parent-child relationship as laying the foundation for how the individual will interpret and interact with others (Price & Glad, 2003). As the experience of child maltreatment is representative of a fundamental breakdown in the caregiver – child relationship, both attachment and social learning

perspectives provide valuable and complementary insights into how maltreatment impacts individual development, potentially leading to maladaptive outcomes such as aggression and violence.

Attachment theory posits that internal representations of the self and others formed in the context of the early parent-child relationship become the prototype for future relationships and behaviors (Bowlby, 1980). A parent who is emotionally available and responsive provides a “secure base” from which the child can explore the world, providing the child with a sense of safety and security. Children who are securely attached exhibit lower levels of fear in new situations, are better able to solve problems, and demonstrate more empathy in interpersonal relationships (Sroufe, 1988). However, among maltreated children, parent-child (or caregiver-child) relationships are severely disrupted due to inconsistent, unresponsive, and/or frightening parental behaviors (Cicchetti & Valentino, 2006). Lack of a secure base then leads to patterns of attachment that are disorganized, avoidant, or anxious, which are commonly observed among maltreated children (Cicchetti & Valentino, 2006; Finzi et al., 2001). Because maltreated children do not have a secure base from which to explore the world, they view the world as a frightening place, leading them to lash out at or withdraw from an environment that they view as unmanageable and anxiety-provoking. The inability to successfully navigate novel experiences then hinders the development of core individual competencies, such as the ability to regulate emotional states.

Social learning theory proposes that the individual internalizes models of the self and others through early interactions with caregivers, leading to modeling of learned behavioral responses, such as aggression (Bandura, 1977). A social learning perspective

suggests that risk for aggressive and violent behavior among maltreated youth is conferred via modeling of these behaviors in the family environment. Much of the research supporting this perspective comes from studies examining transmission of aggressive or violent behavior from parent to child, such as that described in the cycle of violence model (Widom, 1989a). Thus, physically abused children, for example, engage in higher rates of aggressive behavior because it is the most salient model provided by caregivers. In addition, a general set of attitudes or cognitive processes supporting the acceptability of aggressive responding reinforces this model, further cementing it among maltreated children.

To apply social learning theory in a somewhat different way, the behavioral responses of both abused and neglected children also can be conceptualized in terms of what their caregivers *fail* to model, namely, adaptive behavioral responses and conflict-resolution strategies. In particular, neglecting families, who tend to be socially isolated, indifferent, and unresponsive (Cicchetti & Valentino, 2006), teach children to avoid and withdraw from their environment, thereby robbing them of opportunities to successfully navigate novel experiences in an adaptive manner. Accordingly, maltreated youth learn aggressive behavioral responses, attitudes, and cognitions that support and justify aggression, while simultaneously lacking the availability of non-aggressive models of responding and empathy.

Three Proposed Mechanisms: Emotion Regulation, Moral Disengagement, and the Development of Callous-Unemotional Traits

There are three potential mechanisms informed by attachment and social learning perspectives that may be particularly salient for understanding the link between child

maltreatment and later aggressive and violent behavior. The first proposed mechanism, disruptions in emotion regulation, is thought to occur as a result of a breakdown in the attachment relationship between child and parent. The second potential mechanism, drawing from a social learning perspective, is disrupted moral development (i.e., moral disengagement) and is proposed result from the simultaneous presence of an antisocial model and absence of a prosocial model within the maltreating environment, leading to maladaptive attitudes and a cognitive schema that supports aggressive and violent behavioral responses. The third mechanism, disruptions in the development of empathy and empathic responding, is proposed to lead to increased callous-unemotional traits, increasing risk for instrumental forms of aggression. The development of callous-unemotional traits is thought to represent disruptions in both emotional and cognitive domains (and is therefore informed by both attachment and social learning perspectives). While all three potential pathways lead to the same endpoint (i.e., increased aggressive and violent behavior), they point to disparate, although complementary, intervention points for maltreated children. This becomes exceedingly important when considering that while children who experience different forms of maltreatment (i.e., physical abuse versus neglect) may all demonstrate increased aggression, they may do so for different reasons, requiring that interventions be tailored to the underlying disruption in order to be successful.

Emotion Regulation

The first proposed mechanism to be discussed, poor emotion regulation, may be a disruption that afflicts children who experience any of the four subtypes of maltreatment, due to maladaptive attachment. Emotion regulation is defined as the individual's ability

to modulate emotional arousal so that an adaptive level of engagement with the environment is fostered (Kopp, 1989). As emotion regulation skills are thought to develop within the context of the parent-child attachment relationship, inconsistent, unresponsive, and unpredictable parent-child interactions inhibit the development of these skills, impairing the child's ability to function adaptively in situations that are emotionally challenging (Cicchetti & Lynch, 1995). This phenomenon has been widely researched in populations of maltreated children, who demonstrate disturbances in the expression, processing, and regulation of emotion (Cicchetti & Valentino, 2006).

Disruptions in the development of emotional expression, processing, and regulation are apparent among maltreated children from a very young age. Research examining the emotional expression of maltreated infants and toddlers within the context of a mother-child interaction indicates that physically abused children display more anger, fear, and sadness than non-maltreated children, whereas neglected children display a restricted range of affect and a longer duration of negative affect than non-maltreated children (Cicchetti & Valentino, 2006). Several studies have demonstrated that the emotional processing of maltreated children is also disrupted. Physically abused children are hypersensitive to anger, meaning that they perceive anger cues as more salient, are more likely to categorize neutral or ambiguous stimuli as angry, and have difficulty disengaging their attention from anger cues (Pollak et al., 2000; Pollak, Messner, Kistler, & Cohen, 2009; Pollak & Sinha, 2002; Pollak & Tolley-Schell, 2003), while neglected children have difficulty discriminating between different emotions (Pollak, Cicchetti, Hornung, & Reed, 2000). In addition, the presence of anger in the environment puts physically abused children in a state of anticipatory monitoring and lowers their threshold

for initiating motor responses (Pollak et al., 2005; Pollack & Tolley-Schell, 2003), suggesting that they are put “on alert” by the presence of anger. Within the context of a maltreating family some of these disruptions may be adaptive (i.e., sensitivity to anger leading to self-protective behaviors), while others may lead to further victimization (i.e., inability to calm oneself triggers frustration and maltreating behavior in the parent).

The combination of observed disruptions in attachment, hypersensitivity to threat cues, and the inability to cope with the resulting emotional response indicates that maltreated children are especially vulnerable to deficits in emotion regulation. Several studies have supported this assumption, demonstrating that maltreated children are more likely to display poor emotion regulation (Maughn & Cicchetti, 2002; Shields & Cicchetti, 1998, 2001; Shipman et al., 2005; Teisl & Cicchetti, 2008). A study by Maughn and Cicchetti (2002) using a person-centered approach to identify emotion regulation patterns among pre-school aged children found that 80% of maltreated children exhibited dysregulated emotion regulation patterns, as opposed to only 37% of the non-maltreated comparison group. This research indicates that poor emotion regulation may be the norm rather than the exception among maltreated children.

As the maltreated child moves into novel environments, such as school and peer contexts, hypersensitivity to threat, propensity for expression of negative affect, and deficits in emotion regulation abilities may lead to increased aggressive responding. Indeed, several studies have shown that poor emotion regulation mediates the relation between maltreatment and aggressive behavior in children (Shields & Cicchetti, 1998, 2001; Teisl & Cicchetti, 2008). A study by Shields and Cicchetti (1998) examining emotion regulation, as measured by the Emotion Regulation Checklist (ERC; Shields &

Cicchetti, 1995), and reactivity of 141 maltreated and 87 non-maltreated comparison children in a day camp setting found that the maltreated group demonstrated higher rates of reactive aggression, and that this relationship was mediated by poor emotion regulation. In a related study of the same sample, the authors found physically and sexually abused boys and girls to be at greater risk for both bullying and victimization by bullies, a relationship that also was mediated by poor emotion regulation (Shields & Cicchetti, 2001). The authors suggest that there may be several processes at work here: (1) maltreated children's hypersensitivity to threat and poor regulation leads them to respond with reactive aggression in social situations, and (2) the combination of this tendency with a lack of empathy (as will be discussed further later in this paper) results in bullying behavior.

The available evidence examining poor emotion regulation as a mediator between physical abuse, sexual abuse, and neglect with aggression suggests that disrupted emotion regulation may represent a common process linking all three subtypes of maltreatment with children's aggression. However, and oddly enough, there is no research that examines emotion regulation as a mediator of the connection between emotional maltreatment and aggression. Considering that emotional maltreatment is representative of a parent-child relationship that is characterized by verbal abuse, exposure to violence, and generally unpredictable and frightening parental behavior (including abandonment and threats of violence), it makes intuitive sense that this form of maltreatment would result in disrupted attachment potentially leading to disrupted emotion regulation. As discussed previously, although there is little research on emotional maltreatment, it appears that this form of maltreatment makes a significant independent contribution to

later maladjustment and so is important to consider in its own right. Therefore, one focus of the present research is to examine the relation of each subtype of maltreatment to emotion regulation and to test whether poor emotion regulation mediates the relation between each form of maltreatment and later violent behavior.

Research conducted to date indicates that poor emotion regulation mediates the relationship between maltreatment and aggressive behavior among children, but has yet to be expanded to the study of adolescents, representing a second gap in this literature. Emotion regulation skills gain new significance during adolescence as individuals are faced with new social challenges that are affected by the ability to regulate emotional states. The increasing influence of the peer group; transition to high school and work roles; search for identity, autonomy, and independence; and the introduction of romantic relationships represent just some of the developmental tasks of adolescence where ability to regulate emotional arousal fosters positive adaptation. A lack of emotion regulation skills may therefore lead to maladaptation in these areas. For example, within the context of the peer group, where emotional arousal is often increased, poor emotion regulation may negatively influence the ability to make good decisions and think about the consequences of one's actions, increasing risk for aggression and violence (Steinberg & Scott, 2003). The ability to regulate emotion would be especially pertinent when considering violent crimes and intimate partner violence, in which reactive aggression is a factor (i.e., violence that occurs in the "heat of the moment" as opposed to that which is planned in advance). Therefore, this study will specifically focus on poor emotion regulation as a mediator of the link between child maltreatment and violent behavior in adolescence.

Moral Development

Whereas poor emotion regulation may represent a common mediating process linking all forms of maltreatment to subsequent aggression, disrupted moral development is likely a mechanism that is specific to types of maltreatment that partially operate via observational learning (i.e., physical abuse and emotional maltreatment) or lack of appropriate social models (i.e., neglect). Moral development is conceptualized as an internal self-regulatory mechanism, allowing the individual to shift from external to internal modes of control (Cicchetti & Valentino, 2006), and the development of moral judgments (the foundation of moral development) is heavily influenced by adult models from the surrounding environment (Bandura, 1969; Bandura & McDonald, 1963). Individuals who have high levels of moral disengagement, which represent a failure of moral development, exhibit more punitive and victimizing behaviors towards others (Bandura, 1999). Therefore, disruptions in moral development (i.e., moral disengagement) may be one pathway by which antisocial (or maltreating) models are transmitted to children via social learning from the maltreating environment, resulting in increased aggressive and violent behavior towards others.

The construct of moral disengagement represents a disruption in moral development that is expressed as an underlying cognitive pattern. Moral disengagement, as defined by Bandura et al. (1996), is the disengagement (or selective activation) of internal standards, controls, and sanctions, leading to negative conduct towards others. Moral disengagement can occur via three processes: 1) reconstructing the behavior and obscuring personal responsibility, 2) disregarding the consequences of the negative behavior, and 3) blaming or devaluing the victim (Bandura et al., 1996). Thus, moral

disengagement contributes to aggressive and violent behavior not through impaired understanding of societal standards of right and wrong, but rather via cognitive processes that allow the individual to justify or rationalize his or her negative actions. Research examining the role of moral disengagement in the perpetration of inhumane behavior towards others demonstrates that it plays an integral role in increasing the propensity of interpersonal cruelty (see Bandura, 1999, for a review).

Multiple studies have demonstrated that moral development is disrupted among maltreated children (Koenig, Cicchetti, & Rogosch, 2004; Smetana, Daddis, Toth, Cicchetti, et al., 1999; Smetana, Toth, Cicchetti, Bruce, et al., 1999; Toth, Cicchetti, Macfie, Rogosch, et al., 2000). Studies directly measuring children's moral judgments suggest that maltreated children do not express different standards of behavior with regard to *others'* actions (i.e., they have similar levels of "moral maturity" as non-maltreated children), but that they may view their *own* moral transgressions as permissible, especially when provided with a rationalization for the behavior (Smetana & Kelly, 1989). Maltreated children also differ in their affective responses to real or hypothetical moral transgressions. One study examining the effects of provocation on maltreated preschoolers' interpretation of moral transgressions found that both maltreated and non-maltreated children viewed depicted moral transgressions as serious, wrong, and deserving of punishment (Smetana et al., 1999). However, both physically abused and neglected children responded with less sadness than non-maltreated children, suggesting that maltreated children have an impaired understanding of the emotional consequences of moral transgressions.

Successful internalization of moral standards, or the development of the “moral self,” is thought to decrease the likelihood of engaging in aggressive behavior (Krettenauer & Eichler, 2006). Hence, the observed lack of moral development among maltreated children places them at increased risk for engaging in aggression (Koenig et al., 2004; Straker & Jacobson, 1981; Toth et al., 2000). The adolescent period is an especially pertinent developmental time point to study the impact of moral disengagement on behavior, as one of the primary developmental tasks of adolescence is the emergence of autonomy and a “moral identity” (Paciello, Fida, Tramontano, Lupentti, et al., 2008). Research examining this question demonstrates that high moral disengagement increases risk for aggression and violence among adolescents (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura, Caprara, Barbaranelli, Pastorelli, et al., 2001; Gini, 2006; Menesini, Sanchez, Fonzi, Ortega, et al., 2003). One study examining developmental trajectories of moral disengagement across the adolescent period demonstrated that adolescents who maintained high levels of moral disengagement were more likely to engage in aggressive and violent behavior (Paciello et al., 2008). Whether moral disengagement mediates the connection between child maltreatment and aggression and violence during adolescence remains to be seen, and so will be an additional focus of this research. In addition, it is proposed that heightened moral disengagement will be a process that is specific to youth who have a history of physical abuse, emotional maltreatment, or neglect, but not sexual abuse. This prediction is informed by the theoretical underpinnings of this construct, which would suggest that moral disengagement results from observational learning, such as in the case of physical

abuse and emotional maltreatment, or lack of socially appropriate models, such as in the case of neglect.

Callous-Unemotional Traits

The last mediating construct to be considered, heightened callous-unemotional traits (CU), is proposed to be specific to individuals experiencing physical abuse. The core component of CU is an observed lack of empathy for others, which has been observed among maltreated children. Disruptions in the development of empathy and empathic responding may be the result of both poor attachment and the presence of anti-social models.

Empathy, as defined by Eisenberg and Miller (1987), is “an affective state that stems from the apprehension of another’s emotional state or condition, and that is congruent with it” (p.91). In other words, empathy refers to the individual’s ability to vicariously experience the emotional state of another, requiring accurate identification of another’s emotional state and subsequent generation of a synonymous internal emotional response. Disruption of emotional development via poor attachment relationships represents one pathway by which the development of empathy may be stunted, a pathway that is supported by research demonstrating that children with insecure attachment styles display less empathic concern (van der Mark, van Ijzendoorn, & Bakermans-Kranenburg, 2002). To expand this construct further, empathic responding is representative of the individual’s ability to effectively manage his or her own internal emotional response (Eisenberg et al., 1994) and then generate cognitions that guide socially appropriate helping behavior. Research by Barnett et al. (1980) demonstrates that heightened empathic responding in children is related to expressed parental empathy, suggesting that

there is a learned component to empathy. Therefore, the development of empathic responding requires affective, cognitive, and behavioral components and is impacted by the individual's emotional development (i.e., emotional processing and regulation) and by the cognitive and behavioral models of empathic responding that are provided in the family environment. Thus, the potential mediating role of empathic responding in the connection between maltreatment and aggression is mutually informed by attachment and social learning perspectives.

A lack of empathy has been related to increased risk for aggression and antisocial behavior. In a meta-analysis of the literature examining this very question, Miller and Eisenberg (1988) found low empathy to be related to higher levels of aggression among children and antisocial behavior among adults. There is some research to suggest that maltreated children, especially physically abused children, are less empathic (Straker & Jacobson, 1981; Miller & Eisenberg, 1998) than non-maltreated children. No research to date has examined lack of empathy as a potential mediator of the relation between maltreatment and aggressive behavior, but this is hypothesized to be a potential process by which maltreatment confers risk for aggression and violence (Lee & Hoaken, 2007).

Although disruptions in the development of empathy have not been examined directly as a mediator of the maltreatment-aggression link, research examining related constructs reflecting of a lack of empathy may provide further evidence that this is a worthwhile line of inquiry. A lack of empathy is one of the hallmarks of psychopathy, which in adults is predictive of increased rates of aggressive and violent behavior (Patrick & Zempolich, 1998). Psychopathy is a relatively broad construct representing a pervasive underlying personality disruption that is characterized by grandiosity, emotional

callousness, impulsivity, glibness, and lack of guilt/remorse, as well as deceptive, self-serving, sensation seeking, and interpersonally exploitive behaviors (Vaughn & Howard, 2005). Heightened psychopathy has been found to mediate the relation between child maltreatment and violent behavior in young adults (Weiler & Widom, 1996). However, there are inherent problems in considering psychopathy as a potential process underlying maltreatment and violence in adolescence, as some components of psychopathy could be considered developmentally normative for adolescents (Vaughn & Howard, 2005). For example, adolescents engage in more sensation seeking and risky behavior than adults, which is thought to be due to increased sensitivity to reward, especially in emotionally charged situations, and a relative lack of “cognitive control” due to developmental differences in brain structure and function (Steinberg, 2008). In addition, adolescents tend to have an egocentric personal perspective leading them to believe that they are special, unique, and the subject of attention and monitoring by others (i.e., the “imaginary audience;” Elkind, 1967). So it is easy to see how some developmentally normative components of adolescent behavior could be mistaken for psychopathy (i.e., impulsivity, grandiosity, and sensation seeking), resulting in a “false positive” of sorts. Focusing on those aspects of psychopathy, such as emotional callousness and lack of guilt, which represent aberrant development among adolescents, may be a more accurate way to measure those factors that confer risk for aggressive and violent behavior.

CU is a construct that is considered to be a precursor to psychopathy (Frick, 1998) and results from a failure to develop empathy and empathic responding. The core features of CU are lack of guilt, absence of empathy, and shallow and constricted emotions (Frick, Barry, & Bodin, 2000). These features are most likely highly interrelated; for instance,

constricted emotional responding (stemming from disruptions in emotional development) limits the individual's ability to empathize, which then reduces the likelihood that they will generate a guilt response. Children who score high on measures of CU display higher levels of externalizing behavior problems, including proactive forms of aggression (Frick, Cornell, Barry, Bodin, et al., 2003; Kimonis, Frick, Boris, Smyke, et al., 2006). Additionally, the presence of CU in children is considered to be a potential early marker for later psychopathy and is predictive of persistent and violent offending behavior that has an earlier age of onset (Frick, 1998; Frick, Barry, & Bodin, 2000).

Whether child maltreatment is predictive of CU is not widely researched. One study by Larsson, Viding, and Plomin (2008) found that children who displayed both high levels of CU and high rates of anti-social behavior were more likely to have a history of harsh parenting (defined as both harsh verbal and physical discipline by parents) than controls. That maltreated children display lower levels of empathy than non-maltreated children suggests that they may also display high CU, but this relationship has not been tested empirically. In addition, the relations between low empathy or high CU and aggressive behavior indicate that CU may represent a process that confers risk for violent behavior among maltreated youth, especially for instrumental forms of aggression. Therefore, a final focus of the present research will be to examine the relation between each form of maltreatment and CU (although it is proposed that physical abuse is most likely to predict CU) and CU as a mediator of the maltreatment-violence link.

The Present Study

There is strong evidence that child maltreatment increases risk for violent behavior in adolescence. Research examining the contribution of subtypes of maltreatment to later violence indicates that certain forms of maltreatment, namely physical abuse and neglect, demonstrate a consistent association with violent behavior in adolescence. The impact of other forms of abuse on violent behavior, namely sexual abuse and emotional maltreatment, is less universally consistent and requires further study. Taken together, the available evidence suggests that the study of the relation of specific subtypes of maltreatment to violent behavior is valuable because it may partially explain the observed heterogeneity in outcome (i.e., that only a small percentage of maltreated youth display later violent behavior) and inform the implementation of interventions for children experiencing specific types of maltreatment.

The study of mechanisms that potentially underlie the relation between maltreatment and later violent offending may help further realize these two goals. Three potential mechanisms, suggested by attachment and social learning theories, were examined in this study. The first mechanism, poor emotion regulation, is proposed to be the result of disrupted attachment, leading to increased risk among youth with a history of any type of maltreatment for both violent behavior due to inability to modulate anger and aggressive responding in emotionally charged situations. The second mechanism, moral disengagement, is proposed to be the result of the presence of antisocial models and absence of prosocial models within the maltreating environment (specifically among individuals with a history of physical abuse, emotional maltreatment and neglect), leading to cognitive schema that rationalize and justify violent behavior, thereby

increasing its incidence. Finally, the third mechanism, heightened callous-unemotional traits, is thought to be the result of both disrupted emotional processing and regulation and a lack of empathic models, leading to low empathy, lack of guilt, and constricted emotional responding to others, thereby increasing risk for violent behavior, especially among physically abused youth.

The present study examined the above questions using a sample of serious juvenile offenders. There are multiple reasons for using this sample. The first is that past research has indicated that the association between child maltreatment and delinquency is due mainly to higher rates of status offenses among maltreated youth, which may be due to family factors other than maltreatment per se (e.g., poor parental monitoring) (Zingraff, Leiter, Myers, & Johnson, 1993). However, research examining the link between maltreatment and violent delinquency finds a direct effect that is not confounded by co-occurring risk factors (Mersky & Reynolds, 2007; Smith & Thornberry, 1995). Because only a small number of adolescents engage in serious violent offending, using an offender sample is ideal, as it will increase my ability to examine this outcome.

An additional reason for using a juvenile offender sample is that youth who have dual involvement in the child welfare and juvenile justice systems represent a unique subgroup of individuals, coined “crossover youth,” who are in particular need of interventions. This research will be most informative for the development, targeting, and implementation of interventions if it is conducted with the population of individuals for whom the interventions are most needed.

Hypotheses

The goals of the present research are to examine the relation between four forms of child maltreatment (physical abuse, sexual abuse, neglect, and emotional maltreatment) and violent offending in adolescence. In addition, the present study tests how three proposed mediating processes -- poor emotion regulation, moral disengagement, and callous-unemotional traits -- account for the relation between maltreatment and violent offending. Lastly, it is predicted that each of the above mediators will operate for specific subtypes of maltreatment as informed by social learning and attachment theories. The following hypotheses are proposed:

- *Hypothesis 1.* Each form of childhood maltreatment (physical abuse, sexual abuse, emotional abuse, and neglect) will independently contribute to higher levels of violent offending in adolescence.
- *Hypothesis 2.* The impact of all four forms of maltreatment (physical abuse, sexual abuse, emotional abuse, and neglect) on violent offending in adolescence will be mediated by poor emotion regulation.
- *Hypothesis 3.* The impact of physical abuse, emotional maltreatment, and neglect on violent outcomes in adolescence will be mediated by heightened moral disengagement.
- *Hypothesis 4.* Heightened levels of callous-unemotional traits will mediate the impact of physical abuse on violent outcomes in adolescence.

CHAPTER 2

METHOD

Participants

The present study used data from adolescents who participated in Research on Pathways to Desistance, a longitudinal study examining psychological development and behavior in a sample of serious juvenile offenders followed over the course of adolescence and young adulthood.

Procedures

Recruitment

Youth were selected for participation in the Pathways study via review of court files in Philadelphia, PA, and Phoenix, AZ. Youth were deemed eligible for study participation if they were adjudicated delinquent or found guilty of a felony offense, excluding misdemeanor weapons offenses, misdemeanor sexual assault, or less serious property crimes. In order to obtain a heterogeneous sample, the number of male juveniles with drug offenses recruited for the study was capped at 15%, while all female juveniles meeting the age and adjudicated crime criteria were eligible for enrollment. The total Pathways sample consists of 1,354 adjudicated adolescents, between the ages of 14 and 17 years at the time of their committing offense (a few youths who were nearly 18 at the time of the offense were 18 at the time of the baseline interview). The final sample was 86% male, with an average age at adjudication of 15.9 years. The ethnic breakdown of the sample is as follows: 25% white, 44% African American, 29% Hispanic, and 2% other.

Collection of Pathways Data

After obtaining consent from the juveniles and their parents or guardians, participants completed a baseline interview either within 75 days of adjudication hearing if they were in the juvenile system or within 90 days of their decertification hearing in Philadelphia or adult arraignment hearing in Phoenix, if they were in the adult system. The study measures were a series of self-report measures administered in the form of a computer-based interview, the overall content of the which encompassed six domains: (1) background characteristics, (2) indicators of individual functioning, (3) psychosocial development and attitudes, (4) family context, (5) personal relationships, and (6) community context. Each interview was conducted by a trained research assistant in the community, residential placement, or correctional institution, depending on the participant's location. Youth were interviewed biannually for the first 3 years of study participation and annually thereafter. Analyses for the present study utilize data from the baseline interview through the 36-month follow-up interview for the subsample of youth from Philadelphia.

Collection and Classification of Maltreatment Data

Because the primary aim of the present study is to examine the impact of child maltreatment history on later behavior, consent was obtained from each participant, all of whom were at least 18 at the time, in order to access official records concerning child abuse and neglect history from the Department of Human Services (DHS) in Philadelphia. In total, 470 of 641 participants from the Philadelphia site consented to have their DHS records accessed. There were three primary reasons that participants were not consented for the study; (1) the participant was deceased or had dropped out of the

Pathways study prior to the start of the child welfare project, (2) the participant declined to have his or her child welfare history reviewed, or (3) the participant could not be located. After obtaining consent from each participant, an electronic file containing information regarding the participants' child welfare history was obtained from DHS. Each file included the following information, dating from 1992 (when the electronic system was implemented) forward: all allegation narratives of child abuse and/or neglect, the date the report was made to DHS, source of the report, outcome of the DHS investigation (including whether the report was substantiated or unsubstantiated and DHS classification of the maltreatment), dates of DHS involvement with the family, and services recommended by DHS. Because contact with the Youth Study Center in Philadelphia (the detention facility, which was the primary recruiting site for the *Pathways* study) automatically results in coordination with DHS in order to initiate services for youth, the vast majority of *Pathways* participants were identified in the DHS system, whereas a smaller proportion of these youth had prior contact with DHS specifically for allegations of maltreatment. Of the 470 participants who consented to have their child welfare history reviewed, 460 (97.8%) were identified in the electronic system and 225 (47.8%) had at least one recorded allegation of abuse or neglect.

Once the electronic file was obtained for each study participant, the content of each allegation narrative was coded using the Modified Maltreatment Classification System (MMCS; LONGSCAN Investigators, 1997), a previously validated coding system based on the "gold standard" system developed by Barnett, Manly, and Cicchetti (1993). The MMCS allows for the classification of seven types of child maltreatment (physical abuse, sexual abuse, neglect – failure to provide, neglect – lack of supervision,

emotional maltreatment, educational maltreatment, and moral/legal maltreatment), presence of parental substance/alcohol abuse, and corresponding severity scores (ranging from 1 to 5). In order to ensure reliable use of the coding system, I completed a 2-day training with the developers of the MMCS at the University of North Carolina, Chapel Hill. At the completion of the training, I was 98% reliable with the LONGSCAN investigators, demonstrating that I was able to implement the MMCS system accurately.

In order to collect and enter the maltreatment data on a large sample of subjects in a timely manner, one undergraduate research assistant (RA) was hired to work 10 hours per week for a total of 8 months to aid in coding the allegation narratives. Funding to pay the RA was obtained via a grant from the Office of Juvenile Justice and Delinquency Prevention (OJJDP), on which I am a co-investigator. I then trained the RA, which included the completion of selected readings, a training seminar in the theory and use of the MMCS, and coding a series of 15 practice allegation narratives until 90% reliability with my ratings was reached. Inter-rater reliability for the study data was established ($\kappa = 0.88$) through independently co-coding 20 allegation narratives of study participants. These 20 allegation narratives were then de-identified and sent to the LONGSCAN investigators, who coded them independently and calculated a “gold standard” reliability score in order to ensure accurate use of the coding system with the Philadelphia DHS records. “Gold standard” inter-rater reliability with LONGSCAN was 92% for coder 1 (myself) and 89% for coder 2 (the RA). Independent coding of the allegation narratives then commenced, which was accompanied by my meeting weekly with the RA and consultation with the LONGSCAN investigators in order to address questions and/or resolve discrepancies encountered during the coding process.

Study Sample

The 470 participants selected for the present study completed both the baseline interview of the *Pathways* study and consented to have their official child welfare history reviewed. This resulted in a sample that was 87% male, with an average age at adjudication of 16 years. The ethnic breakdown of the sample is as follows: 70.9% African American, 15.5% Hispanic/Latino, 10.6% White, and 2.8% Other. Ethnic differences between the analytic sample and the entire *Pathways* sample reflect the fact that the analytic sample was drawn only from Philadelphia (rather than both Philadelphia and Phoenix).

Measures

Aggressive Offending

Aggressive offending behavior was assessed via the Self Report of Offending (SRO; Huizinga, Esbensen, & Weiher, 1991), a 22-item self-report measure assessing involvement in illegal and antisocial activity over the previous six-month recall period. Because the purpose of this research is to examine violent behavior, the Aggressive Offending Variety score (see below) was used. This sub-score of the SRO is based on 11 items that tap involvement in aggressive offenses (e.g., “Been in a fight” “Forced someone to have sex with you”). Internal consistency of the Aggressive Offending Variety score in this sample is adequate (0.74). In addition, the SRO has demonstrated adequate construct validity and reasonable measurement equivalence across genders and ethnic groups in this sample (Knight et al., 2004).

The use of a self-report measure captured antisocial behavior for which the individual was not necessarily arrested, providing a more comprehensive picture of

offending than official reports. Offending variety scores, which are regularly used in criminology research (Thornberry & Krohn, 2000), are calculated as a proportion, by dividing the total number of different types of offenses that the respondent reports having committed during the recall period (e.g., robbery, assault) by the number of different offenses listed on the SRO. The closer the score is to 1, the greater the variety of offenses the youth has committed. All items with missing data (i.e., the subject refused to answer, responded “don’t know” or were not asked) are eliminated from the denominator. The variety score provides an indication of the level to which the youth has been involved in different types of crime, which is advantageous over the use of an overall frequency score, which may be skewed by a high frequency of involvement in less serious forms of crimes, such as selling drugs, overshadowing less frequent involvement in more serious offenses, such as rape or assault.

In order to measure the impact of child maltreatment on the aggressive behavior of youth in the sample in general, rather than at one point in time, a mean aggression score was calculated by averaging the SRO aggression variety scores across the first seven time points (i.e., baseline through 36 month interviews) for participants who completed a minimum of four interviews. The average aggression variety score ranged from 0 to 0.47 ($M=0.06\pm 0.06$). The mean SRO aggression variety score of the sample decreased substantially over the first 3 time points of study participation and then appeared to level off around the 18 month interview.

Table 1: Mean SRO Aggression Variety Score: Baseline through 36-month time point

Time point	SRO Aggression Variety Score (<i>M</i> , <i>SD</i>)
Baseline	0.12 ±0.13
6 month	0.08 ±0.10
12 month	0.06 ±0.10
18 month	0.05 ±0.09
24 month	0.05 ±0.09
30 month	0.04 ±0.08
36 month	0.04 ±0.08
Average	0.06 ±0.06

Childhood Maltreatment

Data concerning maltreatment status, severity, frequency, developmental timing and perpetrator of abuse/neglect were collected through coding of all alleged reports of abuse and neglect in existing official child welfare records of the Pathways participants. Past research has indicated that limiting maltreatment data to substantiated reports (versus unsubstantiated reports) does not significantly improve the predictive power of child maltreatment for various behavioral or developmental outcomes (Hussey et al., 2005), including delinquency (Leiter, Myers, & Zingraff, 1994), and so both substantiated and unsubstantiated reports were coded in the same manner.

The Modified Maltreatment Classification System (MMCS; English & LONGSCAN Investigators, 1997) was used to code type and severity of substantiated and unsubstantiated official reports of physical abuse, sexual abuse, emotional abuse, neglect, and parental drug and alcohol use in childhood via examination of child welfare records. The MMCS is based on the coding system developed by Barnett, Manly, and Cicchetti (1993) and has several modifications that make it advantageous. First, the MMCS differentiates between two subtypes of neglect, “failure to provide” representing

physical neglect, and “lack of supervision” representing supervisory neglect. Second, the MMCS provides detailed descriptions and severity scales for 27 types of emotional maltreatment. Third, the MMCS expands the range of the severity code for physical abuse from a five- to a six-point scale in order to allow for maltreatment resulting in permanent disability, disfigurement, or death to be coded (Proposal for third phase of LONGSCAN study; English, 2000). The availability of clear description and differentiation of neglect and emotional maltreatment enables heightened accuracy and precision when coding, reducing the likelihood of coding error.

The MMCS codes each type of abuse according to the following guidelines: (1) Physical abuse: indication that “a caregiver or responsible adult inflicts physical injury upon a child by other than accidental means,” with severity ranging from 1 (*Dangerous acts, but no marks indicated*) to 6 (*Permanent disability/disfigurement/fatality*); (2) Sexual abuse: indication that “any sexual contact or attempt at sexual contact occurs between a caregiver or other responsible adult and a child, for purposes of the caregiver’s sexual gratification or financial benefit,” with severity ranging from 1 (“*The caregiver exposes the child to explicit sexual stimuli or activities, although the child is not directly involved*”) to 5 (“*The caregiver has forced intercourse or other form of sexual penetration*” or “*The caregiver prostitutes the child*”); (3) Physical Neglect, Failure to Provide: indication that “a caregiver or responsible adult fails to exercise a minimum degree of care in meeting the child’s physical needs” including food, clothing, shelter, medical care, and hygiene (a separate severity rating system for each of these sub-categories is provided, ranging from 1 to 5); (4) Physical Neglect, Lack of Supervision: indication that “a caregiver or responsible adult does not take adequate precautions to

ensure a child's safety in and out of the home, given the child's particular emotional and developmental needs" including supervision ("*Failing to take steps to ensure that the child is engaging in safe activities*"), environment ("*Failing to ensure that the child is playing in a safe area*"), and substitute care ("*Failing to provide for adequate substitute care in the caregivers absence, or mental or physical incapacity*"); a separate severity rating system for each category (supervision, environment, etc.) is provided, ranging from 1 to 5; and (5) Emotional Maltreatment: indication that there has been "a persistent or extreme thwarting of children's basic emotional needs" and/or "parental acts that are harmful because they are insensitive to the child's developmental level" encompassing three broad areas: (a) psychological safety and security – provision of a "family environment not characterized by excessive hostility and violence and/or availability of stable attachment figure," (b) acceptance and self esteem - "need for positive regard, absence of excessively negative or unrealistic evaluation, given child's particular developmental level," and (c) age appropriate autonomy - "need to explore the environment and extra familial relationships, to individuate within the bounds of parental acceptance, structure, and limit setting, without developmentally inappropriate responsibility or constraints placed on the child." For example, situations in which the caregiver "often belittles or ridicules the child," "ignores or refuses to acknowledge the child's bids for attention," or "places the child in a role reversal (e.g., the child is expected to take care of the caregiver)," would each be included in the category of emotional maltreatment, along with many others, such as exposing the child to extreme marital conflict, attempting suicide in front of the child, threatening the child with physical violence, and infantilizing the child. A complete description of the MMCS is

provided in Appendix A. The MMCS has demonstrated adequate reliability with respect to comparable coding systems (Kappa = 0.96) and ecological validity (Runyan et al., 2005).

Maltreatment Group

For purposes of analysis, each participant received a dichotomous code indicating presence or absence (0=no, 1=yes) for each subtype of maltreatment. Of the total sample, 228 (48.5%) had an official history of abuse or neglect; 133 (28.3%) were physically abused; 26 (5.5%) were sexually abused; 125 (26.6%) were neglected, lack of supervision type; 143 (30.4%) were neglected, failure to provide type; and 75 (16.0%) were emotionally maltreated. Congruent with past research examining maltreated populations, there was significant overlap among the maltreatment categories, and the majority of participants experienced two or more subtypes of maltreatment (see Figure 1):

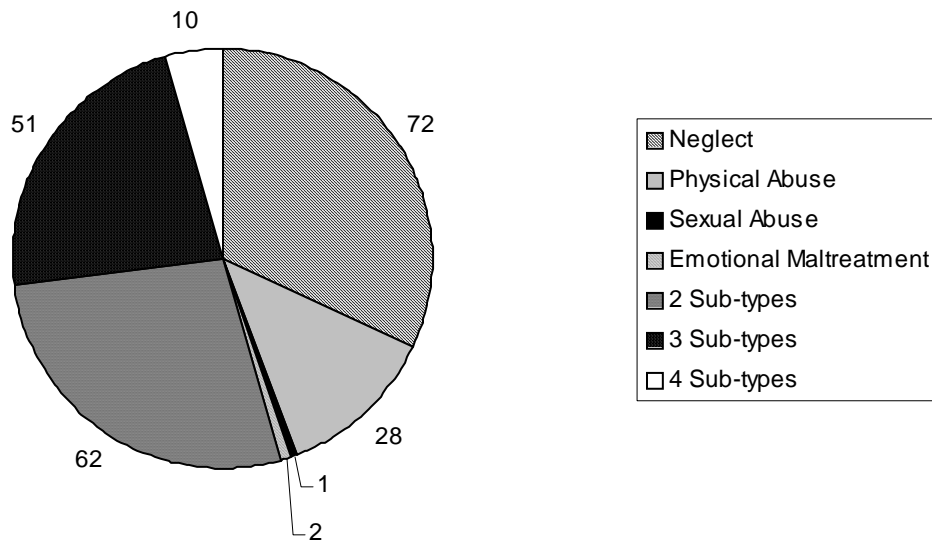


Figure 1. Number of Participants with a History of 1 Subtype, 2 Subtypes, 3 Subtypes or 4 Subtypes of Maltreatment

Due to the high degree of overlap, the presence of all maltreatment subtypes were positively intercorrelated (see Table 2).

Table 2. Bivariate Correlations of Presence of Maltreatment Subtypes.

	1.	2.	3.	4.	5.
1.Neglect – LOS	1.00	.59**	.32**	.15**	.41**
2.Neglect – FTP		1.00	.34**	.10*	.37**
3.Physical Abuse			1.00	.24*	.50**
4.Sexual Abuse				1.00	.17**
5.Emotional Maltreatment					1.00

* $p < 0.05$, ** $p < 0.01$.

Maltreatment Severity

In order to use maltreatment severity ratings in the analysis, the coding approach recommended by Litrownick et al. (2005) was utilized. Each individual was assigned a Severity by Type (ST) score, which is defined as the maximum severity rating for each type of maltreatment experienced, ranging from 0 (not present/no report) to 5 (or 6 in the

case of physical abuse) (maximum severity rating). When the full sample (including those with no reports of maltreatment) was considered, the average severity score for each subtype of maltreatment was less than one (see Table 3), while when only the maltreatment participants were considered, the average severity rating ranged between 0.36 for sexual abuse and 1.99 for neglect, lack of supervision type (see Table 4).

Table 3. Mean and Standard Deviation of Severity by Type (ST) Score of Each Subtype of Maltreatment (Full Sample)

Maltreatment Sub-Type	Average Severity M (SD)
Neglect – LOS	0.95 (1.78)
Neglect – FTP	0.86 (1.50)
Physical Abuse	0.67 (1.27)
Sexual Abuse	0.18 (0.85)
Emotional Maltreatment	0.50 (1.28)

Table 4. Mean and Standard Deviation of Severity by Type (ST) Score of Each Subtype of Maltreatment (Maltreated Subjects only)

Maltreatment Sub-Type	Average Severity M (SD)
Neglect – LOS	1.96 (2.13)
Neglect – FTP	1.77 (1.74)
Physical Abuse	1.39 (1.52)
Sexual Abuse	0.37 (1.15)
Emotional Maltreatment	1.03 (1.69)

Maltreatment Frequency

A total frequency score was calculated by summing the total number of instances each reported subtype of maltreatment occurred. Participants who had an official history of maltreatment had an average of 2.69 total reports ($SD = 1.9$) when all types of maltreatment were considered. Among the subtypes of maltreatment, both forms of

neglect had the highest frequency of occurrence, while sexual abuse had the lowest frequency of occurrence (see Table 5).

Table 5. Range, Mean and Standard Deviation of Frequency of Each Subtype of Maltreatment (Maltreated Only)

Maltreatment Sub-Type	Frequency Range	Average Frequency <i>M (SD)</i>
Neglect – LOS	0-8 reports	0.94 (1.26)
Neglect – FTP	0-7 reports	1.21 (1.46)
Physical Abuse	0-5 reports	0.87 (1.01)
Sexual Abuse	0-2 reports	0.13 (0.38)
Emotional Maltreatment	0-4 reports	0.43 (0.70)

Maltreatment Severity x Frequency Score

In order to capture the history of each subtype of maltreatment within one variable, as well as the multiplicative impact of maltreatment severity and frequency, a severity x frequency score was calculated for all subtypes of maltreatment. The multiplicative impact of severity and frequency of maltreatment is of interest because past research has indicated that individuals who have a higher severity or more chronic course of maltreatment evince increased aggression (Levendosky, Huth-Bocks, & Semel, 2002; Trickett, Noll, Reiffman, & Putnam, 2001). However, other than the study by Trickett et al., (2001) discussed earlier, which examined abuse-specific profiles of sexually abused girls, no research has sought to examine the interactive effect of both high severity and high frequency maltreatment. Thus, this multiplicative index may capture the impact of particularly intense exposure to maltreatment. Both forms of neglect had the highest severity x frequency average scores, while sexual abuse had the lowest (see Table 6).

Table 6. Range, Mean and Standard Deviation of Severity x Frequency Score (Maltreated Only)

Maltreatment Sub-Type	Severity x Frequency Range	Average SEV x FREQ <i>M (SD)</i>
Neglect – LOS	0-40	3.68 (5.99)
Neglect – FTP	0-30	3.85 (5.91)
Physical Abuse	0-16	2.20 (3.20)
Sexual Abuse	0-10	0.43 (1.47)
Emotional Maltreatment	0-12	1.29 (2.39)

Maltreatment Perpetrator

The relationship of the perpetrator to the participant (e.g. “biological mother,” “biological father,” “other male relative,” etc.) for each instance of abuse was coded. In the event that multiple perpetrators were indicated in separate instances of abuse, the perpetrator with the closest relationship to the child was utilized. In over 80% of all coded instances of maltreatment, a biological parent was the indicated perpetrator.

Combined Maltreatment Variables

Because the maltreatment subtypes were overlapping and intercorrelated, several maltreatment aggregate variables were created. The two forms of neglect (lack of supervision and failure to provide) were highly overlapping and their severity by type scores and frequency scores highly intercorrelated (see Table 7), so these categories were combined in order to create four additional neglect variables reflecting combined neglect history (0 = not neglected, 1 = neglected), severity (utilizing highest severity rating between the two categories), frequency (summation of the two frequency scores between the two categories) and severity x frequency scores utilizing the overall neglect frequency and severity scores. A total of 173 participants experienced some form of neglect; 78

(45%) experienced only one form of neglect, while 95 (55%) had a history of both forms of neglect.

Table 7. Bivariate Correlations of Neglect Severity and Frequency.

	1.	2.	3.	4.
1.N – LOS, Severity	1.00	.51*		
2.N – FTP, Severity		1.00		
3.N – LOS, Frequency			1.00	.69*
4.N – FTP, Frequency				1.00

*p < 0.01

Age of Onset of Maltreatment

In order to capture the age of onset of maltreatment a dichotomous categorical variable was created to indicate the youngest age at which the participant had an official report of maltreatment (0 = childhood onset [0-11 years], 1 = adolescent onset [12 –17 years]). Among the maltreated participants, 160 (71%) had their first official report of maltreatment during childhood, while 68 (29%) had their first official report in adolescence.

Mediators of the Maltreatment-Aggression Relation

Emotion Regulation

Two measures of emotion regulation, one capturing ability to regulate internal emotional states and the other capturing ability to regulate emotional responding, were collected during the baseline interview. The first measure, the Children’s Emotion Regulation scale (Walden, Harris, Weiss, & Catron, 2003), was adapted for the Pathways study to serve as a self-report measure of the participants’ ability to regulate internal emotional states. The scale is comprised of 9 items (e.g. “I know things to do to make

myself more happy,” “I can calm myself down when I get upset”) rated on a 4-point Likert-style scale ranging from “Not at all like me” to “Really like me.” A mean score is computed, with higher scores indicative of better ability to regulate emotion. In the sample used for this study, scores on the Children’s Emotion Regulation scale ranged from 1 to 4 ($M=2.83\pm 0.68$) and the scale demonstrated adequate internal consistency at baseline ($\alpha = 0.81$).

The second measure, the impulse control sub-scale of the Weinberger Adjustment Inventory (WAI; Weinberger & Schwartz, 1990) is an eight-item measure on which respondents are asked to rank the frequency (1 = *False* to 5 = *True*) in which their behavior in the previous six-month period matches a series of statements (e.g. “I should try harder to control myself when I’m having fun”). A mean score is then computed, with higher scores indicating greater impulse control. In the sample used for this study, scores on the impulse control scale ranged from 1 to 5 ($M = 3.18$, $SD = 0.94$) and this scale had good internal consistency at baseline ($\alpha = 0.76$).

Moral Disengagement

The Mechanisms of Moral Disengagement scale (Bandura, Barbarnelli, Caprara, & Pastorelli, 1996) is a 32-item self-report measure of attitudes concerning the treatment of others. Respondents use a 3 point Likert-style scale to indicate the extent to which they agree or disagree with a series of items (i.e., “It is alright to beat someone who bad mouths your family,” and “Some people deserve to be treated like animals”), tapping 8 dimensions of moral disengagement: moral justification, euphemistic language, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame, and dehumanization. Overall performance

is assessed via the mean of all items and/or count of all items to which subject responded “agree,” with higher scores being indicative of more moral detachment. The overall scale had good internal consistency at baseline ($\alpha = 0.88$). Past studies using this measure have demonstrated adequate reliability and construct validity, as it is significantly correlated with measures of guilt, interpersonal aggression, and delinquency (Bandura et al., 1996). In this sample, scores on the Moral Disengagement scale ranged from 1 to 3 ($M = 1.59 \pm 0.34$) at the baseline interview.

Callous-Unemotional Traits

The Callous-Unemotional dimension of the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Satten, & Levander, 2002) is a 15-item scale used to measure callous-unemotional traits at the 6-month time point and beyond. The Callous-Unemotional dimension is computed by summing 3 subscales of the YPI, including 5 items tapping Remorselessness (e.g., “To feel guilt and regret when you have done something wrong is a waste of time”), 5 items tapping unemotionality (e.g., “I usually feel calm when other people are scared”), and 5 items tapping callousness (e.g., “I think that crying is a sign of weakness, even if no one sees you”). The respondent is instructed to indicate how much each statement applies to them ranging from 1 (“Does not apply at all”) to 4 (“Applies very well”). Several items are reverse coded and higher scores on this dimension are indicative of more callous-unemotional traits. Each scale comprising the callous-unemotional dimension was found to have adequate internal consistency at the sixth month time point (Remorselessness $\alpha = 0.71$, Unemotionality $\alpha = 0.60$, and Callousness $\alpha = 0.42$). Among the participants in the present study, scores on the Callous-Unemotional dimension ranged from 17 to 58 ($M = 33.10 \pm 6.99$).

Control Variables

There are two categories of factors that warrant consideration as potential confounding variables when examining the relation between child maltreatment and delinquency in adolescence. The first concerns demographic and ecological factors that are related to both the incidence of child maltreatment and risk for delinquency in adolescence, such as gender, ethnicity, and socioeconomic status (Farrington, 2004; Trickett et al., 1991). For example, poverty is associated both with increased incidence of maltreatment (Trickett et al., 1991) and risk for engagement in delinquent behavior (Farrington, 2004). The second category comprises those factors within the individual that are influenced by the experience of maltreatment and that in turn contribute to increased risk for delinquency, such as disruptions in intellectual functioning (Lewis et al., 1989), measured here via IQ. Each of these variables will be entered as controls in the statistical analysis in order to avoid confounding the effect of maltreatment on aggressive offending.

Age, Ethnicity, and Gender

These variables were assessed via participant self-report on a measure of general demographics. Age at baseline was assessed by subtracting the date of the interview from the respondent's date of birth. To assess ethnicity, respondents indicated if they considered themselves white, black, Asian, Native American, Hispanic, or Other. The participant's gender was utilized as a control, rather than examined as a moderator of the relation between maltreatment and aggression, due to the low number of female participants.

Socioeconomic Status (SES)

SES for this study was measured via both parent and participant report of parental educational attainment. The lowest level of educational attainment reported from either source was used and then the mean of maternal and paternal educational attainment was computed to serve as a proxy for SES. Among the participants in this study, scores on this measure of SES ranged from 1 to 6, with 1 reflecting some grade school and 6 reflecting some college or 2-year college graduate ($M = 4.28 \pm 0.76$).

IQ

A widely used measure of IQ, the two-subscale (vocabulary and matrix reasoning) version of the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999), was used to provide an estimate of general intellectual ability. The WASI has been normed for individuals ages 6 to 89 years and demonstrates good reliability ($\alpha = 0.93$) and is significantly correlated with other measures of IQ, suggesting adequate construct validity. Among the participants in this study, WASI scores ranged from 55 to 119 ($M = 80.66 \pm 12.35$).

Proportion of Time in Facilities

Because many of the participants in the Pathways study were in a facility setting of some kind (e.g., correctional institution, residential treatment center, juvenile correctional facility or boot camp, etc.), which limits their engagement in some of the aggressive behaviors measured by the SRO (e.g., shooting at another person), this factor also was used as a control variable in all analyses. The proportion of time each individual spent in a secure facility over the recall period is calculated by summing the number of days the individual was in a facility and then dividing this number by the total number of days in the recall period. The resulting proportion score represents the amount of relative

time in a facility versus in the community that is on a common metric for all participants in the sample. Proportion scores range from 0 to 1, with scores closer to 1 indicative of a greater relative proportion of time spent in a facility. These proportion scores were then averaged over the first seven time points for the participants in the current sample, in order to create an overall proportion of time in a facility score for each participant. For the participants in this sample, the average proportion of time in a facility ranged from 0 to 1 ($M = 0.40$, $SD = 0.30$).

CHAPTER 3

RESULTS

Review of Analytic Strategy

The analyses for the present study were conducted in multiple stages. First, preliminary analyses using one way analysis of variance (ANOVA) and chi square tests were conducted comparing participants who consented to have their child welfare records reviewed with those who did not provide consent, as well as between maltreated and non-maltreated participants on demographic factors. Second, the main effects of maltreatment group and subtype group on average variety of aggression were examined using univariate analysis of variance with covariates (ANCOVA). Third, the impact of maltreatment severity and maltreatment frequency was examined using linear regression. Next, the main effects of maltreatment group and maltreatment subtype group on emotion regulation, impulse control, moral disengagement, and callous-unemotional traits were tested using ANCOVA. Fifth, the impact of maltreatment severity and maltreatment frequency on each proposed mediator was examined using linear regression. Last, structural equation modeling (SEM) was used to examine both the direct impact of each sub-type of maltreatment on average variety of aggression and the mediating effect of emotion regulation, moral disengagement, and callous-unemotional traits on these relations.

Preliminary Analyses

A series of one-way ANOVAs and chi-square tests were conducted in order to test for differences between the consented and non-consented participants in the Philadelphia *Pathways* sample and between the maltreated and non-maltreated

participants. The ANOVA comparing the Philadelphia *Pathways* participants who provided consent to have their child welfare history reviewed to those who did not provide consent indicated that there were no significant differences between these two groups on any of the demographic variables, average proportion of time in a facility, average variety of aggression, emotion regulation, impulsivity, moral disengagement, or callous-unemotional traits.

A second series of ANOVAs and chi-square tests comparing the maltreated and non-maltreated participants on demographic factors revealed that there were several significant differences between the two groups (see Table 8). The maltreated participants were younger ($F(1,467) = 8.57, p < .01$), had lower IQ scores ($F(1,463) = 4.91, p < .05$), and higher SES ($F(1,452) = 10.11, p < .01$) than the non-maltreated participants. There were no significant differences between maltreated and non-maltreated participants on average proportion of time spent in a facility.

Table 8. Means and Standard Deviations of Age, IQ, and SES of Maltreated and Non-Maltreated Participants.

	Maltreated (<i>M,SD</i>)	Non-maltreated (<i>M,SD</i>)
Age	15.89 (1.21)	16.23 (1.23)
IQ	79.18 (12.71)	81.67 (11.54)
SES	4.42 (.69)	4.20 (.73)

Chi square tests examining differences in gender and ethnic composition of the maltreated and non-maltreated groups indicated that the maltreated participants were

more likely to be female ($\chi^2 = 8.77, p < .01$) than the non-maltreated participants (see Table 9), but there was no difference in the ethnic composition of the two groups.

Table 9. Gender Composition of Maltreated and Non-Maltreated Groups.

	Maltreated	Non-Maltreated
Male	187 (40%)	220 (47%)
Female	41 (9%)	21 (4%)

These preliminary analyses support the use of age, gender, SES, and IQ as covariates in analyses examining the relation between maltreatment and aggression.

Testing the Main Effects of Maltreatment on Aggression

The second stage of the present analyses focused on testing the main effects of maltreatment and maltreatment subtype on average variety of aggression using ANCOVA, with age, gender, SES, IQ, and average proportion of time in institutional settings entered as covariates in all tests.

Testing the Impact of Maltreatment and Maltreatment Subtype on Average Variety of Aggression

The main effect of maltreatment group (i.e., maltreated vs. non-maltreated) on average variety of aggression indicated that maltreated participants reported significantly higher average variety of aggression than the non-maltreated participants ($F(1, 444) = 10.15, p < .01$). Because there is research indicating specific relations between the different subtypes of maltreatment and aggression in adolescence, the impact of each form of maltreatment (physical abuse, neglect, sexual abuse, and emotional maltreatment) on average variety of aggression was tested by entering each subtype maltreatment group as factors in the univariate model. Because the maltreatment subtype

groups were highly overlapping, a custom model with Type I sum of squares was utilized in order to capture the independent contributions of each subtype of maltreatment on aggression. The use of a custom model with Type I sum of squares allows for the examination of the effect of each factor while simultaneously controlling for the effect of the other factors in the model, thereby allowing for the identification of the independent contributions of each maltreatment subtype on the outcome of interest. The result of this test indicated that only participants with a history of physical abuse ($F(1, 444) = 5.17, p < .01$) or emotional maltreatment ($F(1, 444) = 14.21, p < .01$) had significantly higher average variety of aggression scores (see Table 10).

Table 10. Means and Standard Deviations of Aggression for Maltreatment Group and Maltreatment Sub-type Group Comparisons.

	Average Aggression
	<i>M</i> (SD)
Maltreated vs. Non-maltreated Comparison	
Maltreated	0.07 (0.004)
Non-maltreated	0.05 (0.004)
Maltreatment Sub-type Comparison	
Physical Abuse	0.08 (0.01)
No Physical Abuse	0.07 (0.01)
Neglect	0.07 (0.01)
No Neglect	0.07 (0.01)
Sexual Abuse	0.07 (0.02)
No Sexual Abuse	0.07 (0.01)
Emotional Maltreatment	0.09 (0.01)
No Emotional Maltreatment	0.06 (0.01)

In addition there was a significant interaction between physical abuse and emotional maltreatment ($F(1, 444) = 3.71, p = .05$). An ANCOVA examining average variety of aggression among individuals who were not maltreated, physically abused, emotionally abused, and emotionally and physically abused, while controlling for neglect, sexual abuse, age, gender, IQ, SES, and time in facilities, indicated several significant group differences. Pairwise comparisons using the Bonferroni correction indicated that individuals with either a history of emotional abuse ($M = .13, SD = .02$) or emotional and physical abuse ($M = 0.07, SD = 0.01$) had significantly higher average variety of aggression than individuals who were either not maltreated ($M = .05, SD = 0.01$) or only physically abused ($M = 0.07, SD = .01; p < .01$). The difference in aggression between physically abused and non-maltreated individuals reached borderline significance ($p < .10$) (see Figure 2).

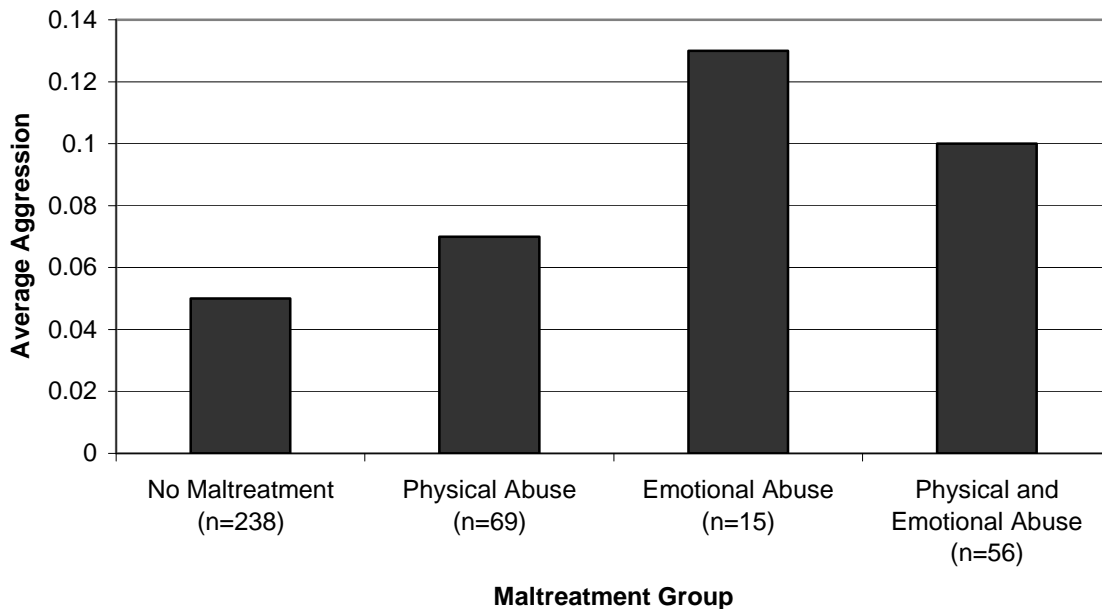


Figure 2. Average Aggression Scores of Non-maltreated, Physically Abused, Emotionally Abused, and Physically and Emotionally Abused Offenders

Testing the Impact of Maltreatment Severity and Frequency on Average Variety of Aggression

The next step of the analyses tested the impact of total maltreatment severity, frequency, and the multiplicative impact of these two factors (i.e., severity x frequency), as well as maltreatment subtype severity, frequency, and severity x frequency, on average variety of aggression using linear regression. Because the predictor variables were significantly correlated with one another, each continuous predictor was converted to a standardized residual (z-score) in order to reduce multicollinearity. Average severity and frequency scores were then calculated in order to test for the impact of overall maltreatment severity and frequency. In order to control for the effects of confounding factors, gender, age, SES, IQ, and average proportion of time in a facility were first each entered in separate steps, followed by maltreatment severity or frequency.

Testing the Impact of Average Maltreatment Severity and Frequency on Average Variety of Aggression

First a series of linear regressions examining the impact of average maltreatment (encompassing all four forms of maltreatment) severity, frequency, and severity x frequency were conducted in order to determine the general effect of these factors on average variety of aggression.

A linear regression examining the impact of the five confounding factors and average maltreatment severity on average variety of aggression was significant ($F(6, 441) = 7.19, p < .01$), accounting for 9% of the variance in aggression. SES, proportion of time spent in a facility, and maltreatment severity were all significantly predictive of aggression among youth in this sample.

Table 11. Linear Regression Examining Impact of Average Maltreatment Severity on Average Aggression.

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.03
Time in settings	.01	.00	.20***
$R^2 = 0.07***$			
Model 2			
Gender	-.01	.01	-.07
Age	-.01	.00	-.07
SES	-.01	.00	-.12*
IQ	.00	.00	.05
Time in settings	.01	.00	.20***
Maltreatment severity	.01	.00	.15***
$R^2 = 0.09***$			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Next a linear regression examining the impact of the five confounding factors and average maltreatment frequency (rather than severity) on average variety of aggression was tested (see Table 12). The final regression model, including gender, age, IQ, SES, average proportion of time in a facility, and maltreatment frequency was significant ($F(6, 441) = 6.53, p < .001$), accounting for 8% of the variance in youths' aggression. SES, proportion of time spent in a facility, and maltreatment frequency were all significantly predictive of aggression among youth in this sample.

Table 12. Linear Regression Examining Impact of Average Maltreatment Frequency on Average Aggression

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.04
Time in settings	.01	.00	.20***
$R^2 = 0.07***$			
Model 2			
Gender	-.01	.01	-.06
Age	-.01	.00	-.07
SES	-.01	.00	-.12*
IQ	.00	.00	.04
Time in settings	.01	.00	.20***
Maltreatment frequency	.01	.00	.10*
$R^2 = 0.08***$			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Finally, a linear regression examining the impact of the five confounding factors and multiplicative impact of average maltreatment severity and frequency (frequency x severity) on average variety of aggression was tested (see Table 13). The final regression model, including gender, age, IQ, SES, average proportion of time in a facility and maltreatment severity x frequency score was significant ($F(6, 441) = 6.46, p < .05$),

accounting for 8% of the variance in youth's aggression. SES, proportion of time spent in a facility, and maltreatment severity x frequency score were all significantly predictive of aggression among youth in this sample.

Table 13. Linear Regression Examining Impact of Average Maltreatment Severity x Frequency on Average Aggression

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.04
Time in settings	.01	.00	.20***
R ² = 0.07***			
Model 2			
Gender	-.01	.01	-.07
Age	-.01	.00	-.08
SES	-.01	.00	-.12*
IQ	.00	.00	.04
Time in settings	.01	.00	.20***
Maltreatment severity x frequency	.01	.00	.11*
R ² = 0.08***			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Testing the Impact of Maltreatment Sub-type Severity and Frequency on Aggression

Next, a linear regression examining the impact of the five confounding factors and maltreatment subtype severity on average variety of aggression was tested (see Table 14). In this model, the five confounds (age, SES, IQ, gender, and time in a facility) were entered in step one and the standardized severity by type scores for each form of maltreatment (physical abuse, sexual abuse, neglect, and emotional maltreatment) were entered in step two. The final regression model was significant ($F(9, 438) = 5.59, p <$

.001), accounting for 10% of the variance in youths' aggression. SES, proportion of time spent in a facility, and severity of emotional maltreatment were all significantly predictive of aggression among youth in this sample. Severity of physical abuse, neglect, and sexual abuse did not predict aggression.

Table 14. Linear Regression Examining Impact of Maltreatment Subtype Severity on Average Aggression

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.03
Time in settings	.01	.00	.20***
R ² = 0.07***			
Model 2			
Gender	-.01	.01	-.05
Age	-.01	.00	-.06
SES	-.01	.00	-.12*
IQ	.00	.00	.06
Time in settings	.01	.00	.20***
Neglect Severity	.00	.00	.02
Physical Abuse Severity	.00	.00	.02
Sexual Abuse Severity	.00	.00	-.01
Emotional Abuse Severity	.01	.00	.17***
R ² = 0.10***			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Next a linear regression examining the impact of the five confounding factors and maltreatment subtype frequency (rather than severity) on average variety of aggression was tested (see Table 15). In this model, the five confounds (age, SES, IQ, gender, and time in a facility) were entered in step one and the standardized frequency scores for each form of maltreatment (physical abuse, sexual abuse, neglect, and emotional maltreatment) were entered in step two. The final regression model was significant ($F(9,$

438)= 5.10, $p < .001$), accounting for 9% of the variance in youths' aggression. SES, proportion of time spent in a facility, and frequency of emotional maltreatment were all significantly predictive of aggression among youth in this sample. Frequency of physical abuse, sexual abuse, and neglect were not predictive of aggression.

Table 15. Linear Regression Examining Impact of Maltreatment Subtype Frequency on Average Aggression

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.03
Time in settings	.01	.00	.20***
$R^2 = 0.07^{***}$			
Model 2			
Gender	-.01	.01	-.04
Age	-.01	.00	-.07
SES	-.01	.00	-.12*
IQ	.00	.00	.05
Time in settings	.01	.00	.21***
Neglect Frequency	.00	.00	-.03
Physical Abuse Frequency	.00	.00	.02
Sexual Abuse Frequency	.00	.00	-.02
Emotional Abuse Frequency	.01	.00	.16**
$R^2 = 0.09^{***}$			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Finally, a linear regression examining the impact of the five confounding factors and maltreatment subtype severity x frequency scores on average variety of aggression was tested (see Table 16). In this model, the five confounds (age, SES, IQ, gender, and time in a facility) were entered in step one and the standardized severity x frequency scores for each form of maltreatment (physical abuse, sexual abuse, neglect, and emotional maltreatment) were entered in step two. The final regression model was

significant ($F(9, 438) = 5.04, p < .001$), accounting for 9% of the variance in youths' aggression. SES, proportion of time spent in a facility, and severity x frequency of emotional maltreatment were all significantly predictive of aggression among youth in this sample. Severity x frequency of physical abuse, neglect, and sexual abuse did not predict aggression.

Table 16. Linear Regression Examining Impact of Maltreatment Subtype Severity x Frequency on Average Aggression

	B	SE	β
Model 1			
Gender	-.01	.01	-.05
Age	-.01	.00	-.08 ^t
SES	-.01	.00	-.11*
IQ	.00	.00	.03
Time in settings	.01	.00	.20***
$R^2 = 0.07***$			
Model 2			
Gender	-.01	.01	-.04
Age	-.01	.00	-.07
SES	-.01	.00	-.11*
IQ	.00	.00	.05
Time in settings	.01	.00	.21***
Neglect Sev x Freq	.00	.00	-.03
Physical Abuse Sev x Freq	.00	.00	.04
Sexual Abuse Sev x Freq	.00	.00	-.02
Emotional Abuse Sev x Freq	.01	.00	.15**
$R^2 = 0.09***$			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Testing the Main Effects of Maltreatment on Proposed Mediators

The third stage of the present analyses focused on testing the main effects of maltreatment and maltreatment subtype, as well as average maltreatment severity and frequency, on emotion regulation, moral disengagement, and callous-unemotional traits using ANCOVA and linear regression. Age, gender, SES, and IQ were entered as

covariates in all tests. (It was not necessary to include time in a facility as a covariate in these analyses as aggression was not examined as an outcome, and the outcomes of interest, namely, emotion regulation, moral disengagement, and emotional callousness, are not impacted by time spent in a facility versus in the community).

The first four tests, examining the impact of maltreatment group on each of the four proposed mediators using separate ANCOVAs, indicated that there were no significant differences between maltreated and non-maltreated participants on emotion regulation, impulse control, or callous-unemotional traits. The test examining the impact of maltreatment group on moral disengagement reached borderline significance, however, indicating that participants who had a history of maltreatment had marginally higher levels of moral disengagement ($M = 1.57, SD = 0.02$) than non-maltreated participants ($M = 1.52, SD = 0.02; F(1,367) = 2.85, p < .10$).

Although there were no significant differences between the maltreated and non-maltreated groups on emotion regulation, impulse control, and callous-unemotional traits, when the maltreatment subtypes were considered as a whole, tests examining the impact of specific forms of maltreatment on emotion regulation, impulse control, moral disengagement, and callous-unemotional traits yielded two significant findings. First, there was a near-significant trend indicating that sexually abused youth reported lower levels of emotion regulation ($M = 2.66, SD = 0.12$) than non-sexually abused youth ($M = 2.89, SD = 0.04; F(1,428) = 3.72, p = .05$). Second, participants who had a history of emotional maltreatment reported significantly higher levels of moral disengagement ($M=1.66, SD =0.05$) than those with no history of emotional maltreatment ($M=1.55, SD$

= 0.03; $F(1, 367) = 6.05, p < .05$). There was no significant impact of physical abuse or neglect on any of the proposed mediating factors.

Next, the impact of average maltreatment severity and frequency on each of the proposed mediators was tested using a series of linear regressions. Each mediator (emotion regulation, impulse control, moral disengagement, and emotional callousness) was examined as the dependent variable in separate regression equations, for a total of eight independent tests (four using maltreatment severity and four using maltreatment frequency). Age, gender, SES, and IQ were also entered as predictors in each regression model in order to control for the effects of these confounds. The linear regressions testing the impact of maltreatment severity and frequency on emotion regulation, impulse control, and emotional callousness were not significant, indicating that neither of these factors was predictive of variation in the proposed mediators. The linear regression testing the impact of gender, age, IQ, SES and average maltreatment severity on moral disengagement was significant ($F(5, 421) = 2.28, p < .05$), however, accounting for 3% of the variance in moral disengagement. Maltreatment severity was significantly predictive of moral disengagement among youth in this sample; the impact of SES on moral disengagement reached borderline significance (see Table 17).

Table 17. Linear Regression of the Impact of Average Maltreatment Severity on Moral Disengagement

	B	SE	β
Model 1			
Gender	-.05	.04	-.06
Age	.01	.01	.03
SES	-.03	.02	-.09 ^t
IQ	-.00	.02	-.01
R ² = 0.01			
Model 2			
Gender	-.07	.04	-.08
Age	.01	.01	.05
SES	-.03	.02	-.09 ^t
IQ	.00	.02	.0
Maltreatment severity	.03	.01	.11*
R ² = 0.03*			

^t $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Testing Processes Underlying the Maltreatment-Aggression Relation

The final set of analyses used structural equation modeling (SEM; AMOS software) to examine the direct effect of each subtype of maltreatment on average variety of aggression, as well as the mediating effect of emotion regulation, impulse control, moral disengagement, and callous-unemotional traits, on the relation between each subtype of maltreatment and aggression. In this analysis, each subtype of maltreatment was represented by the observed severity x frequency score. This index was chosen in order to examine the multiplicative effect of maltreatment subtype severity and frequency, thereby capturing the impact of maltreatment among those individuals who had the most severe histories of maltreatment (i.e., experienced both a high severity and frequency of maltreatment). Average variety of aggression, emotion regulation, impulse

control, moral disengagement, and callous-unemotional traits were each also identified as observed variables in the model.

First the bivariate correlations between each maltreatment subtype severity x frequency score and between the four proposed mediating factors were examined. There were generally low to moderate correlations across subtypes, with the exception of sexual abuse, which was not significantly correlated with neglect or emotional maltreatment (see Table 18). In addition, there were several moderate correlations between the proposed mediating factors (see Table 19). Therefore, the appropriate covariance paths between maltreatment subtypes and between mediating factors were included in the final model, in order to account for the observed overlap.

Table 18: Bivariate Correlations of Maltreatment Sub-type Severity x Frequency Scores

	1.	2.	3.	4.
1. Physical Abuse Sev x Freq	1.00	0.21**	0.18**	0.43**
2. Neglect Sev x Freq		1.00	0.09	0.40**
3. Sexual Abuse Sev x Freq			1.00	0.09
4. Emotional Abuse Sev x Freq				1.00

* $p < .05$, ** $p < .01$.

Table 19. Bivariate Correlations of Proposed Mediating Factors

	1.	2.	3.	4.
1. Emotion Regulation	1.00	.16**	-.17**	.10
2. Impulse Control		1.00	-.37**	-.24**
3. Moral Disengagement			1.00	.36**
4. Emotional Callousness				1.00

* $p < .05$, ** $p < .01$.

For ease of presentation, Figure 3 displays all of the hypothesized direct and mediational paths that were tested in the final model. Figure 4 displays all of the covariance paths (with coefficients) between the proposed mediating factors. Finally, Figure 5 shows the mediational model, with only the significant mediational pathways included, in order to better display the significant regression weights. This model provided good fit to the data; $\chi^2(19, N = 463) = 33.83, p < .05$; comparative fit index (CFI) = .97; root mean squared error of approximation (RMSEA) = .04, accounting for 11% of the variance in average variety of aggression. All of the covariance paths between abuse subtypes were significant and positive; physical abuse was positively correlated with neglect and emotional maltreatment, and neglect and emotional maltreatment were also positively correlated (see Figure 5). All of the paths from the proposed mediators to average variety of aggression were significant and in the expected direction; moral disengagement and emotional callousness were both positively associated with aggression, while impulse control and emotion regulation were both negatively associated with aggression.

There was a significant direct path from emotional maltreatment to average variety of aggression. In addition, emotional maltreatment was significantly positively linked to moral disengagement, which then in turn predicted aggression, indicating that moral disengagement partially mediated the impact of emotional maltreatment on aggression. Physical abuse did not demonstrate a significant direct effect on aggression in this model. However, physical abuse was significantly negatively associated with impulse

control, which in turn was negatively associated with aggression, indicating that impulse control fully mediated the impact of physical abuse on aggression (see Figure 5).

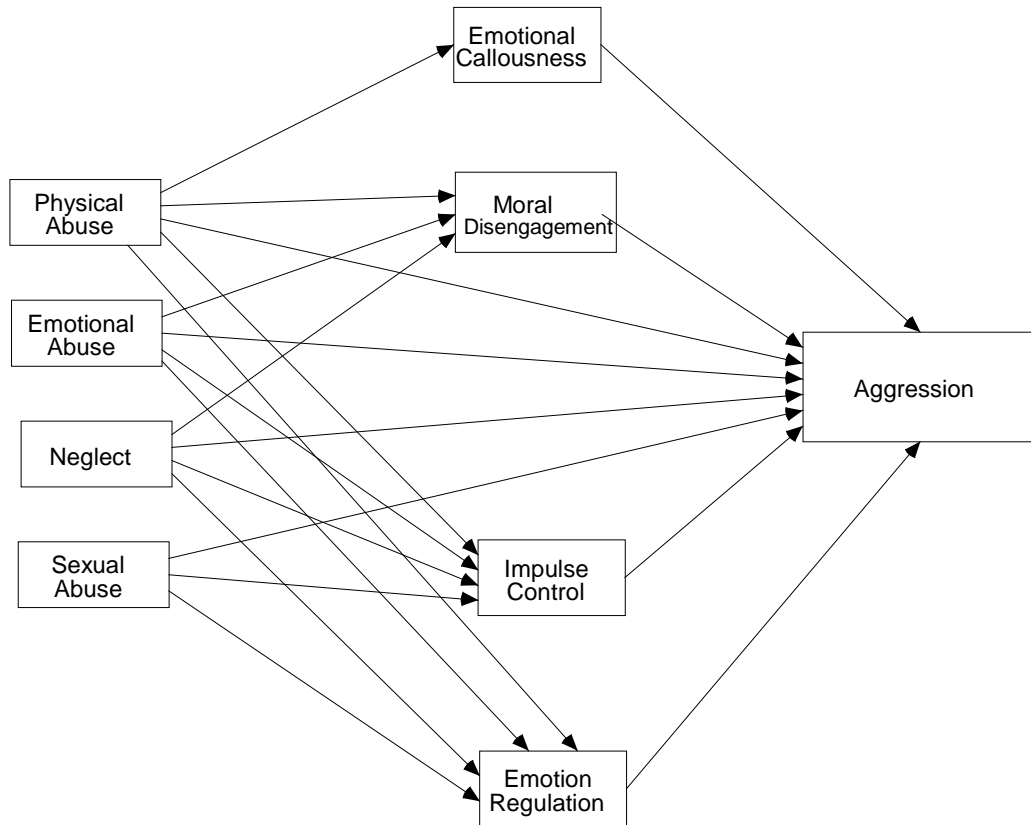


Figure 3. Hypothesized model examining the impact of physical abuse, neglect, emotional maltreatment, and sexual abuse on average variety ofvgfbmj aggression, as well as hypothesized mediational pathways.

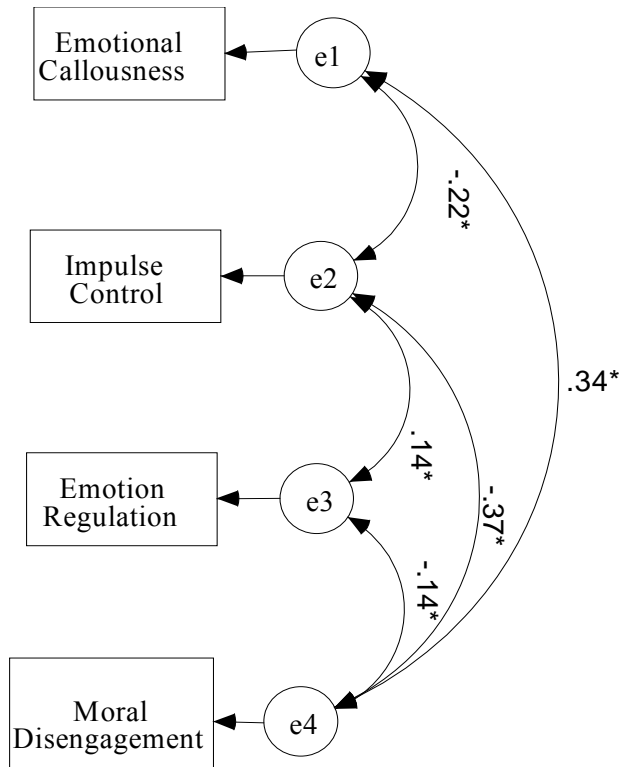


Figure 4. Significant relations among emotional callousness, moral disengagement, emotion regulation, and impulse control. All values represent standardized coefficients. $*p < .01$

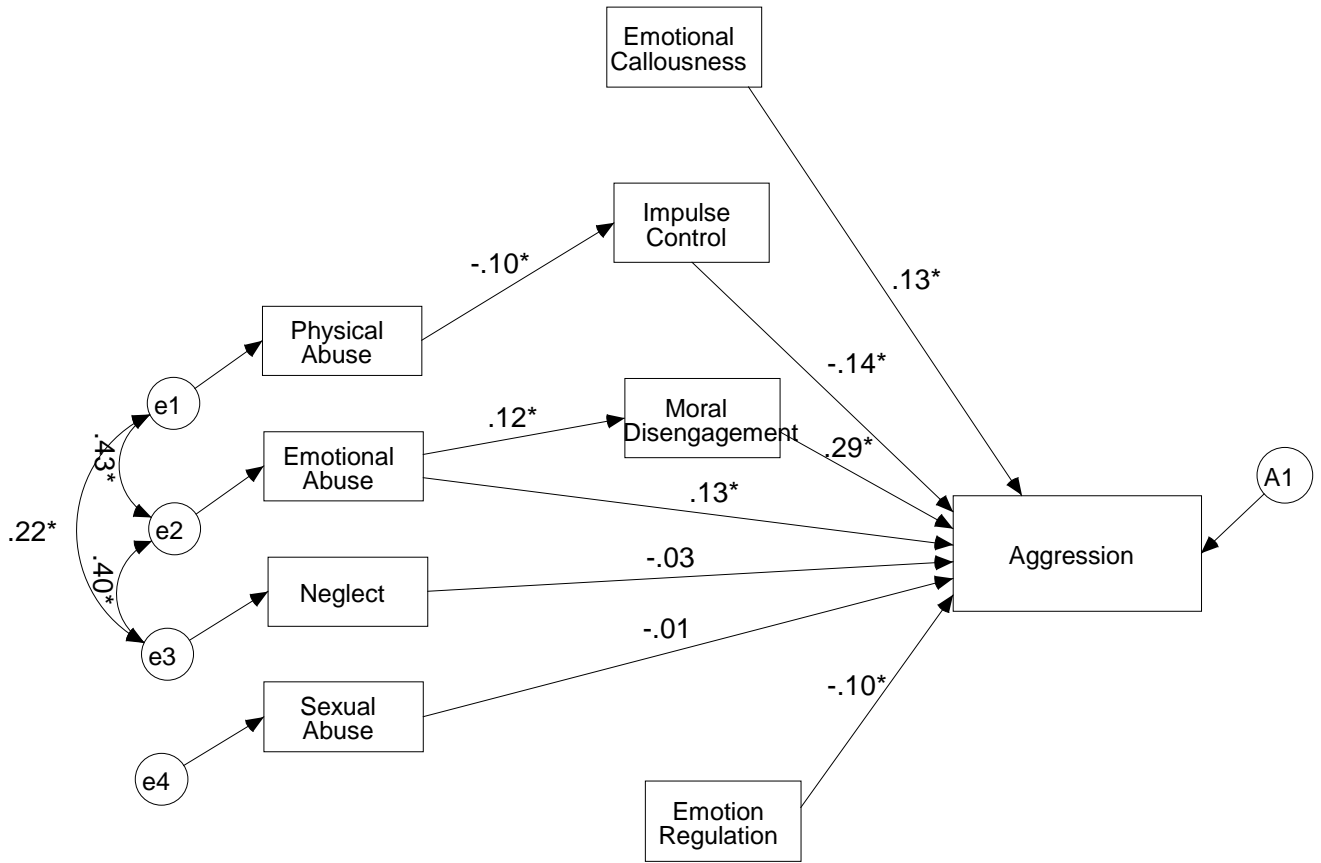


Figure 5. Final mediational model, only significant mediational pathways displayed; χ^2 (19, $N = 463$) = 33.83, $p < .05$; comparative fit index (CFI) = .97; root mean squared error of approximation (RMSEA) = .04. All values represent standardized values. $*p < .05$

CHAPTER 4

DISCUSSION

Individuals who have dual involvement in the child welfare and juvenile justice systems (“crossover youth”) represent a unique subgroup of youth who suffer a confluence of risk factors placing them at risk for negative outcomes such as aggression. Aggressive and violent behavior in turn compounds this pre-existing risk through increased rates of incarceration, disrupted interpersonal relationships, and poor educational and occupational attainment (Farrington, 2004; Grisso, 2008). Child maltreatment, the primary reason for involvement in the child welfare system, has been linked again and again to increased rates of aggressive and violent behavior across childhood and adolescence (Barnow & Lucht, 2001; Connor et al., 2004; George & Main, 1979; Kotch, Lewis, Hussey, English, et al., 2008; Levendosky, Huth-Bocks, & Semel, 2002; Manly et al., 2001; Teisl & Cicchetti, 2008; Trickett, Noll, Reiffman, & Putnam, 2001; White & Widom, 2003; Widom, 1989a). However, although it can be stated with confidence that maltreatment exerts a negative impact on development, it is also clear that only a small proportion of individuals who have a history of maltreatment in childhood later engage in increased rates of aggression and violence (Widom, 1989b; Widom & White, 1996). Explaining this heterogeneity in outcome represents an intriguing line of inquiry that was the primary focus of the present research.

This study attempted to explain the observed heterogeneity in aggressive outcomes observed among maltreated youth through exploration of several avenues of investigation. The first was the examination of specific links between average variety of aggression and type, severity, and frequency of maltreatment. Past research has indicated

that certain forms of maltreatment, namely physical abuse and neglect, are more consistently linked to aggressive outcomes than others, namely sexual abuse. As noted in the Introduction, there is a dearth of literature examining emotional maltreatment as a predictor of aggression, although some argue that emotional maltreatment may represent a particularly salient risk factor for later maladjustment (Garrison, 1987; Hart & Brassard, 1987). In addition, previous research indicates that the severity and frequency of maltreatment plays an important role in the prediction of aggression (Manly, Kim, Rogosch, & Cicchetti, 2001) and so were examined both as a predictor in its own right and considered as an index of each maltreatment subtype in later analyses. Identifying specific links between maltreatment subtypes and later aggression may aid in targeting of interventions for at-risk youth.

A second avenue of inquiry explored in this study involved the examination of processes that underlie the maltreatment – aggression relation. Multiple mediating factors, posited on the basis of attachment and social learning perspectives on maltreatment, have been identified in the literature and examined among maltreated children, but not expanded to the adolescent period. The proposed mediating factors examined in this research, namely emotion regulation, impulse control, moral development, and empathy, represent salient individual characteristics whose development is disrupted by the experience of maltreatment. These are capabilities that not only aid in positive development and adaptation but also represent potential intervention points for at-risk individuals.

The Impact of Maltreatment on Aggression

As hypothesized, a history of child maltreatment was related to increased average variety of aggression in adolescence within this group of juvenile offenders. Examination of the four subtypes of maltreatment revealed specific relations between the type of child maltreatment experienced and later average variety of aggression. In addition, consideration of maltreatment frequency and severity did prove predictive of average variety of aggression and so was used as the index of each subtype of maltreatment in order to account for this effect.

In line with the cycle of violence hypothesis (Widom, 1989a), which suggests that violent behavior is transmitted from generation to generation via social learning, physical abuse was predictive of average variety of aggression among this sample. Physical abuse has been linked to increased rates of aggression many times over in previous research (Malinosky-Rummell & Hansen, 1993; Maxfield & Widom, 1996; Smith, Ireland, & Thornberry, 2005; Smith & Thornberry, 1995; Widom, 1989b; Wolfe & Jaffe, 1991) and this finding was to be expected. While not particularly surprising, this finding adds to the evidence that physical abuse in childhood increases risk for aggression in adolescence and demonstrates that this relation holds true even within a relatively homogeneous sample of individuals who have all experienced significant contextual disadvantage and multiple co-occurring risk factors that place them at risk for negative outcomes. In addition, while most previous research has examined frequency of aggressive behavior or arrest for a violent crime, this study is unique in that the outcome of interest was instead the average variety of aggressive offending engaged in by the youth, providing a more comprehensive index of aggression than that used in prior research.

Youth with a history of emotional maltreatment also engaged in a higher variety of aggressive behaviors, a novel finding suggesting that the impact of emotional maltreatment on subsequent aggression may be as important as that of physical abuse. Past studies examining the impact of aspects of emotional maltreatment, such as maternal verbal aggression, have linked emotional maltreatment to later conduct problems (Caples & Barrera, 2006); delinquency (Spillane-Greieco, 2000); and frequency of aggression (Vissing et al., 1991). The results of the present study would further suggest that emotional maltreatment is also linked specifically to violent delinquency. In addition, this study is one of the few to examine official reports of emotional maltreatment, rather than adolescent or parental report, providing a measure that is unaffected by memory or reporting biases.

The combination of physical abuse and emotional maltreatment proved particularly problematic, as individuals with a history of both forms of maltreatment engaged in a higher variety of aggressive behaviors than either non-maltreated youth or youth with only a history of physical abuse. This finding is congruent with past research suggesting that emotional maltreatment may serve to potentiate the impact of physical abuse on negative outcomes (McGee, Wolfe, & Wilson, 1997), although aggression in particular has not been considered previously in this line of research. Perhaps the presence of specific forms of emotional maltreatment, such as belittling, supplies physically abused youth with negative cognitive appraisals of the abusive act, causing them to engage in global self-blaming. The internalization of the abuse via self-blame may then lead to increased levels of hostility and anger that in turn increase risk for aggression (McGee, Wolfe, & Olson, 2001). Alternatively, it may be that other forms of

emotional maltreatment, such as exposure to domestic violence between family members or violent and erratic parental behavior, provide an additional social learning influence resulting in an additive or multiplicative effect on aggression when experienced in combination with physical abuse.

That neglect did not predict average variety of aggression runs counter to the study hypotheses and previous research (Chapple, Tyler, & Constance, 2005; Maxfield & Widom, 1996; Mersky & Reynolds, 2007; Smith, Ireland, & Thornberry, 2005; Widom, 1989b). The most parsimonious explanation for this null finding is that among individuals in this sample, neglectful parental behavior was not limited to those families who had an official report of maltreatment. The individuals enrolled in the *Pathways* study are generally from chaotic, impoverished environments characterized by high levels of social disorder, poor parental monitoring, and low levels of parental warmth and support (Steinberg, Blatt-Eisengart, & Cauffman, 2006). In addition, past research examining the impact of neglect on aggression later in life has for the most part failed to consider and control for the impact of other co-occurring forms of maltreatment, such as physical abuse and emotional maltreatment, which may be the true predictors of this association. A third potential explanation is that it is early neglect (i.e., neglect occurring in the first five years of life) that is especially important in the prediction of aggressive behavior. Indeed, past work examining the impact of the developmental timing of neglect indicates this to be the case (Manly, Kim, Rogosch, & Cicchetti, 2001). Because I was unable to access official records of maltreatment preceding 1992, when most of the individuals in the *Pathways* study were between five and eight years of age, it was not

possible to measure the impact of early maltreatment experiences on aggression, possibly limiting the predictive power of the measure of neglect used in this sample.

That sexual abuse was not predictive of average variety of aggression among this sample of juvenile offenders is not particularly surprising, considering that most of the research examining this relation is congruent with this finding (Widom, 1989; Widom & White, 1996). The low number of individuals in this sample who experienced sexual abuse most likely severely limited the ability to detect effects, however. In addition, the vast majority of reports of sexual abuse among individuals in this sample were of low severity and low frequency. Not only does this limited variability further constrain the ability to detect effects, it also indicates that most of the individuals who had an official report of sexual abuse did not have a chronic course of abuse that was severe in nature. Past research examining the impact of sexual abuse on aggression in adolescence has indicated that sexual abuse is only predictive of aggression if it is severe abuse involving penetration, beginning at an early age, chronic, and perpetrated by a close family member (Trickett et al., 2001).

The severity and frequency of maltreatment also predicted average variety of aggression, reinforcing the contention that it is important to consider these maltreatment-dependent factors when examining negative outcomes. This finding is also in line with past work indicating that accounting for the severity and frequency of maltreatment bolsters the predictive power of maltreatment (Manly et al., 2001). In addition, the multiplicative impact of severity and frequency of maltreatment also proved predictive of aggression, suggesting that individuals who have both a high severity and frequency of

maltreatment are most at risk for evincing a heightened variety of aggressive behaviors later in life.

When the severity and frequency of each maltreatment subtype was examined, emotional maltreatment in particular emerged as a salient predictor of average variety of aggression. This was true even when emotional maltreatment was examined in confluence with physical abuse, neglect, and sexual abuse. This finding provides yet another indication that the impact of emotional maltreatment is as important to consider as that of other forms of maltreatment.

In sum, physical abuse and emotional maltreatment, as well as the combination of these two domains, were predictive of a greater average variety of aggressive offending in this sample of serious juvenile offenders. Neglect and sexual abuse did not prove to be predictive of aggression when the impact of the other two forms of maltreatment were accounted for, but this finding comes with the caveats that there were very few individuals who experienced sexual abuse and that early neglect was not measured. Additionally, the severity, frequency, and the multiplicative impact of these two factors proved important in the prediction of aggression from information about physical and emotional abuse, indicating that individuals who experience both a high severity and frequency of maltreatment are most at risk for aggression in adolescence.

Mediators of the Maltreatment-Aggression Relation

The structural equation model examined in this study in order to test the hypothesis that the impact of each subtype of maltreatment on average variety of aggression would be mediated by emotion regulation, impulse control, moral disengagement, and emotional callousness, proved to fit the data well, accounting for

11% of the variance in aggression. Each of the proposed mediating factors predicted a greater average variety of aggressive behaviors in the expected direction. That is, poor emotion regulation and impulse control, as well as heightened emotional callousness and moral disengagement, were all related to a higher average variety of aggression. However, only two of these factors were found to mediate the relation between maltreatment and aggression. Specifically, the impact of physical abuse on aggression was fully mediated by poor impulse control, and the impact of emotional maltreatment on aggression was partially mediated by heightened moral disengagement. Emotion regulation and emotional callousness did not mediate the impact of either physical abuse or emotional maltreatment on aggression.

The finding that heightened severity and frequency of physical abuse were related to decreases in impulse control, which in turn were related to a greater average variety of aggression, is in line with past research, which suggests that physically abused children display difficulties with self-regulation that then leads them to engage in aggressive behaviors towards peers (Teisl & Cicchetti, 2008). This is one of the first studies, however, to examine this pathway during the adolescent period using a sample of serious juvenile offenders who all have significant contextual risk and evince high levels of aggression relative to the normative population. This finding has multiple implications, both for the study of additional pathways linking physical abuse and aggression in adolescence specifically, and for potential intervention points for maltreated youth at high risk for aggression.

The importance of the ability to self-regulate in adolescence is highlighted by the fact that adolescence is a period marked by multiple transitions and novel developmental

tasks that must be negotiated. The increasing importance of the peer group, emergence of romantic relationships, and increasing levels of autonomy and independence are just a few areas where individuals must utilize self-regulatory abilities in order to be successful during adolescence. These novel developmental tasks expose adolescents to situations and contexts that are both emotionally charged and inherently risky, such as sexual debut, use of drugs or alcohol, and engaging in delinquency. From the available literature on adolescence, we know that the ability to self regulate in emotionally charged situations is not yet fully developed among adolescents in general. This finding helps explain why adolescents often engage in risky behaviors, despite demonstrating adult levels of knowledge and reasoning regarding the consequences of such actions (Steinberg, 2008). If youth with a history of physical abuse have even less ability to self regulate than their equally high risk peers, leading them to engage in more aggressive offending, it would stand to reason that this deficit may have an impact on their propensity to engage in risky behavior more generally, increase their susceptibility to peer influence, and lead to other forms of aggression not measured on the SRO, such as that within the context of romantic relationships. On the flip side of this coin, to the extent that it can be modified through therapy, self-regulation also represents a potential point for intervention that may serve to prevent aggression and violence among physically abused youth, either in the justice or child welfare systems.

In addition to a mediational pathway linking physical abuse and aggression, the impact of emotional maltreatment was partially mediated by heightened moral disengagement. This novel finding indicates that youth who experience emotional maltreatment are more likely than other youth to have cognitive schema allowing them to

justify or rationalize antisocial actions, thereby placing them at increased risk for aggressive offending and other forms of misbehavior. Because heightened levels of moral disengagement are thought to arise from social learning, it stands to reason that emotionally maltreating families are providing a context modeling attitudes that support and reinforce antisocial behavior, including minimizing personal responsibility for and disregarding the consequences of negative actions, as well as blaming or devaluing the victim of such negative actions.

To take this a step further, it seems likely that emotionally maltreating families are not just modeling these antisocial attitudes towards others; they are, through the behaviors that constitute emotional maltreatment, directing them at the victim child. One of the more common forms of emotional maltreatment, verbal abuse of the child (i.e., belittling, name calling, etc.), is essentially a parallel form of devaluation. Telling a child that he or she is at fault for a parent's abusive behavior is, in essence, a form of minimizing personal responsibility. Similarly, denying that a child has been harmed by abuse (or some other act, such as the parent's substance abuse, abandonment, etc.) is an instance of disregarding the consequences of the parent's own negative behavior. These are just a few specific examples of how emotionally maltreating behavior on the part of the parent may model the cognitive schema that comprise moral disengagement.

That physical abuse and neglect were not related to heightened moral disengagement goes against the study hypotheses. However, the present study is the first to examine the relation between differing subtypes of maltreatment and moral disengagement while accounting for emotional maltreatment. It is possible that the disparity with past findings is due to the fact that emotional maltreatment, which may be

the active ingredient contributing to moral disengagement, was measured in this research and examined in tandem with other forms of abuse. In addition, the relation between physical abuse, neglect, and moral disengagement very rarely has been studied during adolescence. It is possible that the impact of physical abuse and neglect on moral development dissipates over time, as the individual is exposed to a broader social context that models prosocial behaviors.

Surprisingly, maltreated youth in this sample did not display heightened levels of emotional callousness. Past research examining the development of empathy, a component of emotional callousness, indicates that this ability is often disrupted among maltreated children. This would lead to the hypothesis that maltreated children may eventually develop emotional callousness. A partial explanation for this lack of finding is that psychopathy more generally is thought to have strong biological and genetic components (Blair, Peschardt, Budhani, Mitchell, et al., 2006), which were not measured in this study. Indeed, recent research by Larsson et al (2007) finds that the association found between psychopathy (as measured by the YPI) and antisocial behavior in youth can be explained by a common genetic factor. The authors go on to argue that the development of antisocial behavior is further influenced by environmental risk, while the development of psychopathy is not. This finding would suggest that perhaps low levels of empathy observed among maltreated youth may not be due to the experience of maltreatment per se, but to a common biological or genetic predisposition which is passed down from parent to child. In turn, it may be that one of the ways in which this genetic loading is expressed in the parent is via abusive behavior towards the child, which then increases risk for aggression, but not via the specific pathway of emotional

callousness. Alternatively, as hypothesized in the discussion of moral development, perhaps the early deficits in empathy observed among maltreated children are later overcome when they are exposed to a broader social context modeling empathic and prosocial behavior, and so do not persist and develop into more serious disruptions such as emotional callousness.

The Importance of Emotional Maltreatment

Emotional maltreatment emerged as the most consistent predictor of average variety of aggression across the differing modes of analysis and measurement approaches used in this study. This, in combination with the lack of findings for neglect and sexual abuse, warrants further consideration. Closer inspection of the parental acts that constitute the construct of emotional maltreatment as operationalized in the present study reveals that this type of maltreatment may potentially encompass and complement aspects of the other three forms of abuse. This interpretation may partially explain the lack of findings for neglect and sexual abuse. For example, the category of emotional maltreatment includes parental behaviors such as failing to attend to the child's bids for attention and affection, parental abandonment, and thwarting the child's attempts to develop age-appropriate autonomy. These parental acts could also be thought of as emotionally neglectful behaviors. In addition, a caregiver compelling a child to keep a family secret, isolating or binding a child, or threatening physical harm to the child constitutes emotional maltreatment. These are acts that can be directly related to and co-occur with sexual abuse, and are thought to increase the negative impact of sexual abuse, and so could potentially be considered as aspects of sexual abuse. Domestic violence between caregivers, exposure to violent or erratic parental behavior, or to a parent who

has active psychotic or suicidal behaviors are also included within the category of emotional maltreatment. Again these acts often co-occur with physical abuse and perhaps serve to provide an additional model of aggressive behavior as discussed earlier.

Therefore, it may be that emotional maltreatment not only represents an important independent aspect of maltreatment with links to aggression, but may also be a part of other forms of abuse. In this regard, controlling for emotional maltreatment when examining the effects of other types of maltreatment may artificially suppress the links between these other forms of maltreatment and aggression. In order to capture the constellation of parental behaviors that constitute a particular act of maltreatment, perhaps emotional maltreatment should be used to expand the operationalization of physical abuse, neglect, and sexual abuse. In addition, there is mounting evidence that emotional maltreatment serves to “activate” the effects of physical abuse on negative outcomes (McGee, Wolfe, & Wilson, 1997) and this appeared to be the case in this study. It is possible that the experience of emotional maltreatment provides youth with negative self-attributions, which potentially work in concert with physical abuse to produce increased aggression.

A complementary explanation is that emotional maltreatment is also an indicator of a family system where there is a general lack of support, warmth, and emotional involvement with the child, and therefore few interpersonal protective factors to buffer the impact of abuse. For example, among youth who experience sexual abuse, those who have families who believe that the abuse occurred and provide an emotionally supportive environment generally have better mental health outcomes than sexually abused youth who are blamed for the abuse, pressured to keep the abuse a secret, or abandoned after

the abuse is disclosed (Luster & Small, 1997). While these parental behaviors have not traditionally been labeled as emotional maltreatment in past studies, they are congruent with Barnett et al.'s (1993) definition of emotional maltreatment and so could be categorized as such.

The finding that emotional maltreatment was linked to higher levels of moral disengagement provides further support for the idea that this form of abuse has an impact on cognitive processes. That emotionally maltreated youth had higher moral disengagement indicates that they were more readily able to devalue the victim, discount their own role in victimizing behaviors, and disregard the consequences of their negative actions, perhaps because these attitudes were modeled in the family environment. While emotionally maltreated youth did not demonstrate increased emotional callousness, they endorsed attitudes and beliefs that supported the use of antisocial behavior. In addition, increased moral disengagement mediated the association between emotional maltreatment and aggression, demonstrating that this was an important pathway linking these two factors. So it appeared that emotional maltreatment impacted that way that the youth in this study viewed the world around them, in turn affecting their interactions with it, and increasing their use of aggression as a means of expression and goal attainment.

In sum, a history of emotional maltreatment was clearly important in the prediction of aggression among this sample of serious juvenile offenders. This finding indicates that not only should there be an increased focus on identifying cases of emotional maltreatment, but that the parental behaviors and attitudes that constitute emotional maltreatment may serve as a potential intervention point for treatments attempting to reduce and prevent aggression and violence.

Study Limitations

There are several methodological limitations of this research. The first to note is that only one measure of aggression in adolescence was examined, albeit it over multiple assessment points. Although use of an aggression variety score was a unique method for measuring aggression that provided an index of how many different types of violent crimes the youth engaged in, the use of a single self-report measure also has several limitations. Previous research has looked at the relation between maltreatment and outcomes such as dating violence, official records of arrest, and frequency of aggression, the examination of which would potentially reveal additional relations between child maltreatment and aggression in this sample. In addition, a self-report measure of aggression, which asks about very serious aggressive acts (“killed someone,” “forced someone to have sex with you”), was used as the index of aggression in this study. Not only do these types of aggressive acts have low base rates, even within this sample of serious juvenile offenders, but individuals may have been hesitant to report more serious offenses despite assurances of confidentiality as their prior contacts with government systems may lead them to be suspicious of such promises. This may have constrained the variability of the measure to some degree and thereby diminished the likelihood of detecting effects. Future research examining aggressive outcomes among crossover youth would benefit from the use of multiple informants and multiple indexes of aggressive behavior in order to provide a more comprehensive picture of aggression that is less likely to be influenced by self-report bias.

One of this study’s main strengths, the use of official reports of child maltreatment, was also the source of a major limitation. Due to constraints beyond my

control, I was unable to access official child welfare records that preceded 1992, when the study participants were between the ages of 5 and 8. The results of the present study are thus based on a limited picture of the true abuse history of these individuals and therefore represent a conservative estimate of the extent of maltreatment in the sample; whether and to what extent this affected the relations between maltreatment and aggression in this sample is unknown. It is possible that the lack of information on early maltreatment actually increased the correlation between some forms of maltreatment, such as physical abuse, and aggression as some past research has demonstrated that maltreatment limited to early childhood is not in fact predictive of aggression during adolescence. These studies have shown that especially for physical abuse, the developmental period during which the abuse occurs is less important than if the maltreatment extends into the adolescent period. (Stewart et al., 2008; Thornberry et al., 2001) However, the opposite appears to be true when considering the impact of neglect on later aggression. One study has indicated that early neglect, that occurring within the first five years of life is the most predictive of later aggressive behavior (Manly et al., 2001). Therefore, the lack of information concerning early maltreatment severely limited the ability to detect relations between neglect and aggression, and between neglect and the proposed mediating factors, but may have had the opposite effect in the consideration of the impact of physical abuse on aggression.

The selection of mediating factors only occurring at the individual level was also a potential limitation of this study. Although the selection of these processes was theoretically driven and based on past research, they are only a small subset of the numerous potential mechanisms accounting for the heterogeneity in aggressive outcomes

observed among maltreated youth. For example, maltreated children have social deficits that lead them to be rejected by their peer group (Bolger & Patterson, 2001; Bolger, Patterson, & Kupersmidt, 1998; Chapple, Tyler, & Bersani, 2005; Salzinger et al., 2001; Trickett & McBride-Chang, 1995), which may lead them to associate with deviant peers. In turn, deviant peer group association is one of the most salient predictors of delinquency (Farrington, 2004). This is just one example of an alternative process and many others, such as placement outside the home (Ryan & Testa, 2005; Ryan et al., 2007), academic failure (Cicchetti & Valentino, 2006; Shonk & Cicchetti, 2001), and disrupted neuropsychological development (Lee & Hoaken, 2007), have been proposed as mechanisms linking child maltreatment and negative outcomes, including aggression.

In addition, there are multiple risk factors that have been related to both maltreatment and increased incidence of aggressive and violent behavior among youth that were not accounted for in this study. For example, exposure to violence in the broader social context (Lynch & Cicchetti, 1995), parental antisocial behavior, neighborhood social disorder, and economic disadvantage (Farrington, 2004) are all factors that have been related to both child maltreatment and youth antisocial behavior. While the youth who participated in this research were representative of individuals at high risk who most likely experienced many of these co-occurring risk factors, these were not directly considered within the scope of this study.

Conclusions and Directions for Future Research

The results of the current research indicate that child maltreatment, especially physical abuse and emotional maltreatment, increases risk for juvenile offenders' aggressive behavior. In particular, the combination of physical abuse and emotional

maltreatment appears to put individuals in this study at greatest risk for aggressive outcomes. These findings have implications for policy and practice concerning youth in the justice system. In particular, the current lack of communication between the systems serving these youth, namely the child welfare and juvenile justice systems, should be addressed in order to better serve crossover youth. As a history of child maltreatment and contact with the child welfare system appears to contribute to youths' aggressive offending behavior, this history should be taken into consideration when making decisions about how to place or treat these youth. Perhaps a youths' child maltreatment history should serve as a mitigating factor in juvenile court decisions and serve to direct these youth toward rehabilitative services, rather than incarceration.

In addition to informing broader systemic changes, the findings of this study have specific implications for the type of interventions crossover youth may benefit from. Further examination of the interaction between physical abuse and emotional maltreatment and potential cognitive and psychological processes that serve to exacerbate the impact of these forms of maltreatment on development may prove informative for the development of interventions for crossover youth. Of further note, the impact of physical abuse on aggression was mediated by poor impulse control, while the impact of emotional abuse was mediated by heightened moral disengagement, suggesting that there are abuse subtype-specific pathways that account for the observed association between maltreatment and later aggression. So youth with a history of physical abuse may benefit from interventions addressing their lowered self-regulation abilities, such as anger management, while youth with a history of emotional maltreatment may benefit most from interventions addressing their maladaptive cognitions, such as cognitive behavior

therapy. In addition, the examination of mechanisms that underlie the relation between child maltreatment and later negative outcomes, such as aggression, should be expanded to include factors at varying levels of the environment, such as the peer group, to gain a more comprehensive picture of how early experiences of maltreatment confer risk for maladjustment and suggest potential points of intervention both prior to and after maltreated children's contact with the justice system in order to reduce the risk of serious aggressive offending. Considering that crossover youth generally experience multiple co-occurring risk factors at multiple levels of their environment, interventions designed to address dysfunction across systems, such as family therapy or multisystemic therapy, may prove the most useful in preventing later maladjustment.

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APPENDIX A

MMCS Modified Maltreatment Classification System 11/97

Please cite as:

English, D. J. & the LONGSCAN Investigators (1997). Modified Maltreatment Classification System (MMCS). For more information visit the LONGSCAN website at <http://www.iprc.unc.edu/longscan/>

As modified from the Maltreatment Classification System outlined in:

Barnett, D., Manly, J.T. and Cicchetti, D. (1993). Defining Child Maltreatment: The interface between policy and research. In: D. Cicchetti and S.L. Toth (Eds.), *Advances in Applied Developmental Psychology: Child Abuse, Child Development and Social Policy*. Norwood, NJ: Ablex Publishing Corp., Chapter 2, pp. 7-73.

Physical Abuse 100

Physical Abuse is coded when a caregiver or responsible adult inflicts physical injury upon a child by other than accidental means. Injury does not include culturally sanctioned physical alterations such as circumcision and ear piercing.

There are some situations in which the distinction between Physical Abuse and other subtypes becomes ambiguous. The following criteria are provided as guidelines to assist coders in making these distinctions. Physical restraint is typically scored under Emotional Maltreatment. However, in cases in which a child incurs physical injuries when the parent is attempting to restrain the child (e.g. rope burns), then the injury would be scored as Physical Abuse, and the restraint would also be scored under emotional maltreatment. If the caregiver threatens the child but there is no physical contact with the child, Emotional Maltreatment would be scored rather than Physical Abuse. Please see the Emotional Maltreatment scale for further elaboration of these points.

Physical injuries that occur as a direct result of sexual interaction (e.g. vaginal or rectal tears) are coded solely under Sexual Abuse. Other injuries that may accompany sexual acts in an effort to force a child to engage in sexual relations (e.g. beatings, burning) are scored under both Physical Abuse and Sexual Abuse.

Physical Abuse—Assault – (Hit/Kick) to face/head/neck = 101

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
 - A caregiver slaps the child on the face, with no resulting marks to the face.
 - A caregiver pulls a child's hair, with no skin damage.

- 2 Minor marks (small scratches, cuts or bruises)
Examples:
 - A caregiver hits the child on the head, and a bruise results.
 - A caregiver grabs the child by the neck (note: not in a choking fashion--this would be scored under Choking/smothering)and scratches the neck with fingernails.

- 3 Numerous or nonminor mark(s) – a single non-minor mark is also coded here.
Examples:
 - A caregiver punches the child in the face, and the eye and cheek are bruised and swollen.
 - A caregiver hits the child repeatedly in the facial area, resulting in multiple bruises
 - A large open wound results from the caregiver's attack on the child's face or head.

- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
 - A child goes to the emergency room to have a broken nose set after a caregiver breaks it.

- 5 Hospitalized more than 24 hours
Examples:
 - A child is given a serious concussion due to a parent's repeated blows to the head, and is monitored in the hospital for several days.

- 6 Permanent disability/scarring/disfigurement/fatality
Examples:
 - A child dies of brain damage or is in a coma after having been hit with a baseball bat by his caregiver.

Physical Abuse--Hit/kick to torso (neck to legs except for buttocks) = 102

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
 - A caregiver hits a child on the back, with no resulting marks to the body.

- 2 Minor marks (small scratches, cuts or bruises)
Examples:
 - A caregiver hits the child on the chest, and a bruise results.
 - A caregiver grabs the child's waist and scratches the child.

- 3 Numerous or nonminor marks
Examples:
 - A caregiver throws an object at a child, which results in a large bruise on the child's back.
 - A caregiver hits the child with a belt, resulting in an large open welt.

- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
 - A child goes to the emergency room with broken ribs after a fistfight with a caregiver and is released that day.

- 5 Hospitalized more than 24 hours
Examples:
 - A child is monitored for a bruised kidney for several days, and abuse by a parent caused the condition.

- 6 Permanent disability/disfigurement/fatality
Examples:
 - A child dies after being stabbed in the heart with a knife by a caregiver.

Physical Abuse--Hit/kick to buttocks = 103

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
 - A caregiver spansks the child, with no resulting marks to the body.
- 2 Minor marks (small scratches, cuts or bruises)
Examples:
 - A caregiver spansks the child with a spoon, and a bruise results.
- 3 Numerous or nonminor marks
Examples:
 - A caregiver spansks the child with a belt, resulting in large welts.
- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
 - A child walks into a doctor's office wanting a salve for the open wound caused by a parent's spanking with a belt.
- 5 Hospitalized more than 24 hours
- 6 Permanent disability/disfigurement/fatality

Physical Abuse--Hit/kick to limbs/extremities = 104

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
 - A caregiver hits a child's leg, with no resulting marks to the body.
- 2 Minor marks (small scratches, cuts or bruises)
Examples:
 - A caregiver grabs the child's wrist and scratches the child.
- 3 Numerous or nonminor marks
Examples:
 - A caregiver grabs a child's arm and many bruises are present.
- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
 - A child goes to the emergency room with a spiral fracture in his arm after a parent has twisted it.
 - A child needs stitches in his leg after a parent throws an ashtray at him.
- 5 Hospitalized more than 24 hours
Examples:
 - A child is hospitalized several days after a parent cuts the child's leg severely, resulting in blood loss.
- 6 Permanent disability/disfigurement/fatality
Examples:
 - A child loses a limb due to parental abuse.

Physical Abuse--Violent handling of Child (Pushing, shoving, throwing, pulling, dragging) = 105

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
• A caregiver shoves the child across the room and the child is not physically harmed.
- 2 Minor marks (small scratches, cuts or bruises)
Examples:
• A caregiver bruises the child as he pulls him along in the grocery store.
- 3 Numerous or nonminor marks
Examples:
• A caregiver throws the child across the room, where he hits a part of his body and it is severely bruised and swollen.
- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
• A child goes to the emergency room with broken ribs after being shoved into a wall by a caregiver and is released that day.
- 5 Hospitalized more than 24 hours
Examples:
• A child is monitored for a concussion after having been thrown across the room.
- 6 Permanent disability/disfigurement/fatality
Examples:
• A child dies after being thrown out a window.

Physical Abuse--Choking/Smothering (with pillow, putting hand over mouth & nose, cutting off child's ability to breathe) = 106

Severity

- | | |
|---|--|
| 1 | <p>Dangerous acts, but no marks indicated</p> <p>Examples:</p> <ul style="list-style-type: none"> • A child alleges that his parent tried to choke him, but there is no evidence present. |
| 2 | <p>Minor marks (small scratches, cuts or bruises)</p> <p>Examples:</p> <ul style="list-style-type: none"> • A caregiver scratches a child's neck when grabbing the child in a choking fashion. |
| 3 | <p>Numerous or nonminor marks</p> <p>Examples:</p> <ul style="list-style-type: none"> • A child's neck is bruised after a caregiver threatened the child by choking him. |
| 4 | <p>Medical/Emergency Treatment; hospitalized less than 24 hours</p> <p>Examples:</p> <ul style="list-style-type: none"> • A child goes to the emergency room with difficulty breathing after being choked by a caregiver, and is released that day. |
| 5 | <p>Hospitalized more than 24 hours</p> <p>Examples:</p> <ul style="list-style-type: none"> • A child's crushed larynx is operated on, the child fully recovers with no brain damage, and abuse by a parent caused the condition. |
| 6 | <p>Permanent disability/disfigurement/fatality</p> <p>Examples:</p> <ul style="list-style-type: none"> • Brain damage or death results from choking or smothering the child. |

Physical Abuse—Burns/Scalding = 107

Severity

- 1 Dangerous acts, but no marks indicated
Examples:
 - The child complains that the caregiver washed him/her in too hot of water, but no burn marks are indicated.

- 2 Minor marks (small scratches, cuts or bruises)
Examples:
 - A child has a first degree burn that is caused by a parent washing him/her in hot water.
- 3 Numerous or nonminor marks
Examples:
 - A child has 2nd degree burns that are caused by a parent washing him/her in hot water.
 - A child has cigarette burns inflicted by the parent.
- 4 Medical/Emergency Treatment; hospitalized less than 24 hours
Examples:
 - A child is seen in the hospital less than 24 hours for having been scalded by the parent washing him/her in hot water.
 - A child is seen in the hospital less than 24 hours after having been burned by a caregiver.
- 5 Hospitalized more than 24 hours
Examples:
 - A child is severely burned and requires monitoring for more than 24 hours in a hospital (note: No permanent burn scars can result, or it's coded as 6)
- 6 Permanent disability/disfigurement/fatality
Examples:
 - A child has scarring on his torso after having been burned by a caregiver and treated in a Burn Unit for several weeks/months.
 - A child is burned to death by his/her parents.

Physical Abuse—Shaking = 108

Severity

- 1 A child over the age of two is shaken by his caregiver, and no marks result.
- 2 A child over the age of two is shaken by a caregiver and bruises are left.

- 3 A child under the age of two is shaken by a caregiver (with no indication of resulting harm).
A child has a sore neck and arms after being shaken by a caregiver.
- 4 A doctor noticed or suspected as a result of examination that a caregiver was shaking or had shaken a baby.
- 5 A child is hospitalized with Shaken Baby Syndrome.
- 6 A child dies, is brain damaged, or has a broken neck due to having been shaken.

Physical Abuse--Nondescript abuse--(can not be used if the allegation states where or how the child was hurt or if injury occurs on more than three body parts which must be indicated separately). = 109

Severity

- | | |
|---|--|
| 1 | <p>Dangerous acts, but no marks indicated</p> <p>Examples:</p> <ul style="list-style-type: none"> • "The mother hits her kids all the time" |
| 2 | <p>Minor marks (small scratches, cuts or bruises)</p> <p>Examples:</p> <ul style="list-style-type: none"> • "The caregiver hit his kids & left a bruise" • "She hit at him and scratched him" |
| 3 | <p>Numerous or nonminor marks</p> <p>Examples:</p> <ul style="list-style-type: none"> • "There were bruises all over his body after he was hit" |
| 4 | <p>Medical/Emergency Treatment; hospitalized less than 24 hours (trained medical professional)</p> <ul style="list-style-type: none"> • "His mom hit him and we had to go to the emergency room to get him looked at" |
| 5 | <p>Hospitalized more than 24 hours</p> |
| 6 | <p>Permanent disability/scarring/disfigurement/fatality</p> |

Sexual Abuse = 200

Sexual Abuse is coded when any sexual contact or attempt at sexual contact occurs between a caregiver or other responsible adult and a child, for purposes of the caregiver's sexual gratification or financial benefit. In cases of sexual abuse, caregiver or responsible adult refers to any family member or friend who has a relationship with the child, or is in a position of authority over the child (e.g. baby-sitter). Because this system assesses Child Protective records only, there are instances of sexual abuse that are not available in the Child Protective records. For example, sexual abuse that occurs outside of the home perpetrated by nonfamily members typically is investigated solely by criminal courts, and consequently, may not be accessible. Any relevant information in the records related to sexual abuse should be scored. Researchers should be aware of this issue, and we encourage investigators to use additional methods for exploring extrafamilial maltreatment that may not be available through Child Protective records.

Please note that caregivers may use physical or psychological coercion in their attempts to engage a child in sexual relations. In cases where the caregiver verbally threatens a child in an effort to have sexual relations, then Emotional Maltreatment and Sexual Abuse would both be scored. If a nonoffending caregiver tells a child not to tell about the abuse, this would be scored under Emotional Maltreatment as well. As noted under Physical Abuse, physical injuries that occur as a direct result of sexual interaction (e.g. vaginal or rectal tears) are coded solely under Sexual Abuse. Other injuries that may accompany sexual acts in an effort to force a child to engage in sexual relations (e.g. beatings, burning) are scored under both Physical Abuse and Sexual Abuse.

Severity

- | | |
|-------|--|
| 1 | The caregiver exposes the child to explicit sexual stimuli or activities, although the child is not directly involved. |
| _____ | Examples: <ul style="list-style-type: none"> • The caregiver exposes the child to pornographic materials. • The caregiver makes no attempt to prevent the child from being exposed to sexual activity. • The caregiver discusses sex explicitly in front of the child in a non-educational fashion. Non-educational discussion of sex includes graphic depiction of parents' sexual activity or fantasies to the child. These discussions are held without any attempt to prevent the child from exposure to such descriptions. |
| 2 | The caregiver makes direct requests for sexual contact with the child. |

The caregiver exposes his or her genitals to the child for the purposes of adult sexual gratification or in an attempt to sexually stimulate the child.

Examples:

- The caregiver asks the child to engage in sexual relations, but no physical contact is involved.
- The caregiver invites the child to watch him masturbate.

3 The caregiver engages the child in mutual sexual touching, or has the child touch the caregiver for sexual gratification.

The caregiver touches the child for sexual gratification.

Examples:

- The caregiver fondles the child for sexual gratification.
- The caregiver engages in mutual masturbation with the child.

4 The caregiver physically attempts to penetrate the child or actually penetrates the child sexually. This includes coitus, oral sex, anal sex, or any other form of sodomy.

Examples:

- The caregiver molests the child.
- The caregiver engages or attempts intercourse with the child.
- The child has venereal disease. No information regarding the sexual contact is known.
- A mother has oral sex with her son.

5 The caregiver has forced intercourse or other forms of sexual penetration. Force includes the use of manual or mechanical restraint, for the purpose of engaging the child in sexual relations. Force also includes use of weapons, physical brutality, and physically overpowering the child, specifically for engaging in sexual relations. Note that Physical Abuse may be scored in addition to Sexual Abuse in cases in which the child is injured as a result of physical force, and the injury is not a direct result of the sexual penetration.

The caregiver prostitutes the child. This includes using the child for pornography, allowing, encouraging or forcing the child to have sex with other adults.

Any mention of the word 'rape' is coded here.

Examples:

- The caregiver ties the child to the bed and rapes the child (Note that Emotional

Maltreatment would also be scored).

- The caregiver sodomizes the child at gunpoint.
- The caregiver forces the child to participate in the filming of pornographic movies.
- The caregiver invites one or more other partners to have sexual relations with the child.

Physical Neglect, Failure to Provide (FTP)300

Physical Neglect, Failure to Provide, is coded when a caregiver or responsible adult fails to exercise a minimum degree of care in meeting the child's physical needs. When families are below the poverty level, physical neglect is scored if children's physical needs are not met because the parents fail to access available community resources for the well-being of their children. For example, parents are unable to provide food for their children; however, they have not taken the necessary steps to apply for food stamps or to seek alternate sources of emergency sustenance.

Failure to provide includes not meeting children's physical needs in any of the following domains:

- a. Supplying the child with adequate food.
- b. Ensuring that the child has clothing that is sanitary, appropriate for the weather and permits the child freedom of movement.
- c. Providing adequate shelter
- d. Ensuring adequate medical, dental, and mental health care
- e. Ensuring the child's adequate hygiene.

As with each of the severity scales, the 5-point range for Failure to Provide is meant to be a helpful guideline in making judgments about the seriousness of the impact of the incident on the child's development. However, as with each subtype of maltreatment, there will be occurrences in which the specific nature of the incident dictates to the coder that an event requires a higher rating than indicated by the guidelines of the system. For example, parental failure to follow through with treatment for a low to moderate elevation in the child's blood lead level would typically be given a code of 3 under FTP-Medical. However, if the child has extremely high lead levels that remain untreated through parental negligence, a 4 or 5 could be scored, depending on the severity of the impairment to the child.

FTP-Food = 301

Severity

- 1

- The caregiver does not ensure that food is available for regular meals. The child (less than age 10) often has had to fix his or her own supper and/or occasionally misses meals because of parental negligence.
Examples:
• A 9-year old child fixes dinner several times per week because the caregivers are sleeping.
- 2
- The caregiver does not ensure that any food is available. The house is without food often, and two or more consecutive meals are missed 2-3 times per week. The caregiver does not feed the child for 24 hours.
Examples:
• A social worker has visited the home several times when no food has been available. The children report that they do not have lunch or dinner two or three times per week.
- 3
- The caregiver does not provide meals on a regular basis, thereby perpetuating a pattern of frequently missed meals; as many as four or more periods of at least two consecutive meals per week are unavailable to the child.
Examples
• The children are not fed frequently. They have missed two consecutive meals an average of four times a week for several months.
- 4
- The caregiver has provided such poor nourishment that the child fails to gain weight or grow at the rate expected for their development. The failure to grow as expected is not due to any identifiable organic factors.
- 5
- The caregiver has provided such poor nourishment or care to the child that physical consequences have ensued such as weight loss in an infant, severe malnutrition, or severe nonorganic failure-to-thrive (diagnosed by a physician or other medical professional).
Examples:
• The child is diagnosed as being severely malnourished.

Failure to Provide—Clothing = 302

Severity

- 1 The caregiver fails to provide clothing for the child that is adequately clean and allows freedom of movement (e.g. the clothing is so small that it restricts movement or so large the child often trips or has difficulty keeping the clothing on).
Examples:
_____ • The child always wears clothing so small it restricts movement.
- 2 The caregiver does not dress the child in clothing that is appropriate for the weather (e.g. lightweight clothing during the winter).
Examples:
 • A child has walked to school several days wearing only a thin jacket without hat or gloves.
 The temperature has averaged 25 degrees Fahrenheit.

No Examples given for severity levels 3-5.

Failure to Provide--Shelter (Note that the initial levels of shelter have to do with cleanliness & mess. Levels 3-5 are about actual physical problems with having shelter. Severe cleanliness levels are scored under Failure to Provide--Hygiene.) = 303

Severity

- 1

- The caregiver does not attempt to clean the house. Garbage has not been removed, dirty dishes are encrusted with food, and floors & other surfaces are very dirty. An unpleasant odor from garbage and other debris permeates living quarters. INCLUDE, NON SPECIFIC POTENTIALLY HAZARDOUS LIVING SITUATIONS, EXAMPLE: AN INFANT SLEEPING IN A ROOM SO CLUTTERED THEY WOULD BE UNABLE TO GET IT OUT IN A CASE OF FIRE
- 2
- The caregiver is aware that the house is infested with roaches or other vermin and has not attempted to improve the conditions.
The caregiver does not ensure adequate sleeping arrangements for the child (e.g. there are no beds or mattresses, or the mattresses are filthy & sodden with urine or other substances likely to promote the growth of mold or mildew.
- 3
- The caregiver fails to make adequate provisions for shelter for the family. For example, the caregiver does not acquire or maintain public assistance, resulting in a loss of residence or loss of financial assistance for seven days or more.
Examples:
- The family has been evicted because the parent did not take appropriate actions to maintain public assistance and made no other arrangements for making rent payments. The family had no stable living arrangements for two weeks.
- 4
- The caregiver has made no arrangements for adequate shelter (e.g. the caregiver has not sought heat during the winter; the family is living in a car because alternative housing was not sought). The condition continues for prolonged periods.
Examples:
- The children live in an unheated home because the parents have failed to ensure that heating was available. During the winter, the children come to school with frostbite.

No examples given for level 5

Failure to Provide—Medical = 304 (Mental health issues are coded either a 1 or a 5 in severity.)

Severity

1

The caregiver has missed several of the child's medical or dental appointments, and often fails to take the child to the doctor or dentist for "checkups" or "well-baby appointments". The caregiver does not ensure that the child is taken to the doctor or health clinic for adequate immunizations, and medical personnel have expressed concern.

The caregiver does not attend to a mild behavior problem about which professionals or paraprofessionals have commented (e.g., the child exhibits some symptomatology, but displays relatively mild impairment in school or social functioning).

Examples:

- The caregiver has failed to sign papers for evaluation of a behavior problem that has been reported at school.

2

The caregiver seeks medical attention but does not follow through consistently with medical recommendations for a minor illness or infection (e.g., prescribed medicine is not administered for mild infection, chronic head lice is not treated).

Examples:

- The child has been diagnosed with an ear infection, but the parent does not follow through with administration of the prescribed antibiotic.

3

The caregiver does not seek or follow through with medical treatment for moderately severe medical problems (e.g. the caregiver does not follow preventive measures for a chronic heart condition, or moderately elevated blood lead levels are left untreated), or the caregiver administers medical treatment that is inappropriate without consulting a doctor (e.g., caregiver gives child mild sedatives to control child, without doctor's consultation). Need evidence of symptoms or denial of medically recommended treatment.

The expectant mother jeopardizes the health of her unborn child by using alcohol or drugs during pregnancy, but no fetal alcohol or drug symptoms are evident.

Examples:

- The parent has been drunk several times during pregnancy.
- The child has come to school with an infected cut. Despite notes from the school nurse

recommending medical attention, the cut continues to be untreated.

- 4 The caregiver does not seek or comply with medical treatment for potentially life-threatening illness or injury (e.g. the child is not taken to the Emergency Room for severe bleeding, third degree burn, fractured skull).
Examples:
• The child was hit by a car, receiving a fracture and severe cuts and bruises, The child came to school complaining of pain and stated that the parents would not take him to the hospital.
- 5 The caregiver has abused alcohol or drugs during pregnancy to the extent that the infant is born with Fetal Alcohol Syndrome or a congenital drug addiction.
The caregiver provided such gross inattention to the child's medical needs that the child died or was permanently disabled as a result of lack of medical treatment.
The caregiver does not seek professional help for the child's life-threatening emotional problems (e.g. suicidal or homicidal attempts).
Examples:
• At birth, the child is addicted to heroin.
• The caregiver was informed that the child had expressed suicidal ideation, but the caregiver did nothing to ensure the child's safety.

Failure to Provide—Hygiene = 305

Severity

- 1 The caregiver does not attempt to keep the child clean. The caretaker bathes the child and/or washes the child's hair very infrequently. The child brushes teeth only infrequently or not at all, and signs of tooth decay or discoloration are evident
Examples:
• The child is dirty and frequently scratches matted hair.
• Clothing is dirty and smells of urine.
- 2 The caregiver does not change the infant's diaper frequently, often leaving soiled diapers unchanged for several hours, resulting in diaper rash.
- 3 The caregiver maintains a somewhat unsanitary living situation, where spoiled food or garbage are frequently present and/or where rat or vermin infestation is extreme and untreated.
Examples:
• A social worker has visited the home several times, and each time the house has been a mess. Dirty dishes and spoiled food were all over the kitchen table, counters, and sink. Rats were seen in the open garbage bins by the front door.
- 4 The caregiver maintains the home environment such that living conditions are extremely unhealthy (e.g. feces and urine are present in living areas).

None given for 5

Physical Neglect, Lack of Supervision 400

Presently, Lack of Supervision is one of the most frequently reported subtypes of maltreatment; however, it is a particularly ambiguous subtype, in part because no clear criteria or standards exist regarding what constitutes age-appropriate supervision. Within this system, Lack of Supervision is coded when a caregiver or responsible adult does not take adequate precautions to ensure a child's safety in and out of the home, given the child's particular emotional and developmental needs. The parent's failure to insure the child's safety may include both permitting the child to be exposed to dangerous situations (e.g. allowing the child to play in an unsafe area, permitting the child to accompany someone with a known history of violent acts) as well as failing to take adequate precautions to evaluate the conditions pertaining to the child's safety (e.g. neglecting to screen the background or competency of alternate caregivers, failing to ascertain the child's whereabouts). There are four broad elements that caregivers may violate to jeopardize children's physical safety:

1401 Supervision--failing to take steps to ensure that the child is engaging in safe activities. According to this dimension, as the number of hours that the child is unsupervised increases, so does the potential for harm. Therefore, severity scores for Lack of Supervision are augmented with more prolonged periods of inadequate supervision. To assist coders in making distinctions about the relative seriousness of particular instances of Lack of Supervision, we have provided approximate duration's of inadequate supervision that are intended to serve as guidelines rather than as firm criteria. We recognize that these cutoff points are somewhat arbitrary and that exact times are frequently unavailable in the records; however, we felt that establishing ranges of time was necessary to clarify coding decisions and, thus, to increase reliability among coders.

2402 Environment--Failing to ensure that the child is playing in a safe area. This dimension is distinguished from lack of hygiene or medically unhealthy conditions of the living environment covered under Failure to Provide. In the case of Lack of Supervision, environment refers to immediate physical dangers inside or outside the home such as broken glass, unguarded electrical fixtures, toxic chemicals, and firearms.

3403 Substitute Care--Failing to provide for adequate substitute care in the caregiver's absence, or mental or physical incapacity. In this respect, lack of substitute care includes situations when auxiliary supervision is not obtained, when parents do not ensure that substitute caregivers are able to adequately supervise the child, when caregivers are unable to adequately monitor the child's safety because the caregivers are intoxicated with alcohol or drugs, or when caregivers have a severe psychiatric condition that makes appropriate supervision of children highly unlikely (e.g., caregiver has delusions or hallucinations).

Additionally, children who have a history of dangerous, impulsive, or immature behavior require more intensive supervision, and may be given a higher severity rating if they are unsupervised. For example, an adolescent who is known to exhibit poor judgment and to engage in impulsive and destructive behavior would require more supervision than most children of the same age. Failing to recognize the developmental needs of the child in providing adequate supervision to ensure the child's safety must also be accounted for. Because, in general, the consequences of failing to supervise younger children are potentially more serious, the influence of the child's developmental level should be considered when making decisions about the severity of parental failure to provide adequate supervision. It is difficult to quantify the amount of supervision that is required at each developmental level. The examples provided give some guidelines of relative severity, but the information available for each case must be considered with regard to the age and particular developmental needs of each child.

Neglect, Lack of Supervision = 401 (no time frame stated = a severity code of 1 regardless of child's age)
Severity

1 The caregiver fails to provide adequate supervision or arrange for alternate adequate supervision for short periods of time (i.e. less than 3 hours) with no immediate source of danger in the environment.

Examples:

- An eight year-old is left alone during the day for a few hours.

2 The caregiver fails to provide supervision or arrange for alternate adequate supervision for several hours (approximately 3-8 hours) with no immediate source of danger in the environment. Children receive inadequate supervision despite a history of problematic behavior (e.g., impulsive behavior, hyperactivity).

Examples:

- The child is left alone frequently during the day without a responsible caregiver available.
- Children get into trouble with neighbors because of lack of supervision.

3 The caregiver fails to provide adequate supervision for extended periods of time (e.g., approximately 8 to 10 hours.)

Examples:

- The child is left alone at night (e.g. for 8-10 hours).
- A 6-year old is locked out of the home alone, and the caregiver does not return until evening.

4 The caregiver does not provide supervision for extensive periods of time (e.g., overnight, "hours at a time," or approximately 10-12 hours). A child with a known history of destructive or dangerous acts (e.g., fire-setting, suicidal ideation) is left unsupervised.

Examples:

- A grade-school-aged child is left alone overnight.

5 The caregiver fails to provide adequate supervision for more than 12 hours.

Examples:

- A preschool child is left alone for 24 hours.
- A child is kicked out of the home with no alternative living arrangements.

Neglect, Lack of Supervision—Environment = 402

Severity

- 1 Preschoolers play outside unsupervised.
- 2 The caregiver fails to provide supervision for short periods of time (less than 3 hours) when the children are in an unsafe play area.
 Examples:
 • The child is allowed to play in an unsafe play area (e.g. broken glass present, old basement or garage cluttered with toxic chemicals, power tools, or old refrigerator) unsupervised.
-
- 3 The caregiver allows the child to play in an unsafe play area for several hours (approximately 3-8 hours).
- 4 The caregiver allows the child to play in an area that is very dangerous (i.e. high probability that the child will be hit by a car or fall out of a window, get burned, or drown).
 Examples:
 • The child is allowed to play by highway, or on the roof of a condemned building.
- 5 The caregiver places the child in a life-threatening situation, or does not take steps to prevent the child from being in a life-threatening situation. INCLUDE HERE DRIVING DRUNK WITH CHILDREN IN CAR.
 Examples:
 • The caregivers keep loaded firearms in a location that is accessible to the child.
 • A toddler plays near a swimming pool unsupervised (Note that for a toddler, being unsupervised near water is considered life threatening because of the high frequency of deaths by drowning to this age of child).
 • Not in a car seat if younger than 6 years old or weighing less than 60 pounds.

Lack of Supervision--Substitute Care = 403

Severity

- 1 Children are left in the care of questionably suitable baby-sitters (e.g., preadolescent, mildly impaired elderly person) for short periods of time (i.e. less than 3 hours).
- 2 The caregiver provides poor supervisors for several hours (3-8 hours).
 Example:
 • An infant is left in the care of an 8 year old for several hours (In this case the infant is given a code of 2. The 8-yr. old would be given a code of 1 under Lack of Supervision, similar to the example under level 1 in this category).
- 3 The child is left in the care of an unreliable caregiver (e.g. one who is known to drink, or is extremely inattentive, or the parent makes no attempt to ensure that the caregiver was reliable) for several hours.
- 4 The child is allowed to go with a caregiver who has a known history of violence (known to the caregiver) and/or sexual acts against children or who has a restraining order prohibiting contact with the child. INCLUDE HERE IF THE PRESENCE OF A SEXUAL OFFENDER IS IN THE HOME OR IS ALLOWED TO HAVE ANY CONTACT WITH THE CHILD.

No examples given for 5.

Emotional Maltreatment 500

There is a growing consensus that virtually all acts of abuse and neglect carry negative emotional/psychological messages to their victims. Consequently, it may be argued that every act of maltreatment constitutes Emotional Maltreatment. We have differentiated acts of Emotional Maltreatment from other forms of maltreatment for the purposes of maintaining the individual conceptual integrity of each of the subtypes defined within our system. The majority of incidents falling into Emotional Maltreatment involve persistent or extreme thwarting of children's basic emotional needs. This category also includes parental acts that are harmful because they are insensitive to the child's developmental level. These needs include, but are not limited to, the following:

- 1 Psychological safety & security: the need for a family environment free of excessive hostility and violence, and the need for an available and stable attachment figure. Note that this category refers to the interpersonal climate of the home, whereas Lack of Supervision (LOS) refers to cases in which the physical environment is unsafe (See below for additional distinctions between subtypes).
- 2 Acceptance & self-esteem: the need for positive regard and the absence of excessively negative or unrealistic evaluation, given the child's particular developmental level.
- 3 Age-appropriate autonomy: the need to explore the environment and extrafamilial relationships, to individuate within the bounds of parental acceptance, structure, and limit setting, without developmentally inappropriate responsibility or constraints placed on the child.

These are acts of maltreatment that may be scored solely as Emotional maltreatment or that may be scored in conjunction with other subtypes of maltreatment. To clarify potentially confusing areas, we specify the following inclusion/exclusion criteria:

1 One area of interface between Emotional Maltreatment and incidents of Physical Abuse concerns physical restraint or confinement of a child. Because restraint or confinement jeopardizes the child's need for autonomy, we consider these acts to be Emotional Maltreatment. However, if the acts result in physical injuries, (e.g. rope burns), these acts would be scored as both Emotional Maltreatment and Physical Abuse.

A second area of overlap surrounds incidents of homicidal threats. In situations in which parents attempt to terrorize children by threatening them or making gestures of harm, Emotional Maltreatment is scored. However, if during the act, the parents actually inflict injury to the children, the act is considered Physical Abuse.

2 In instances in which there is evidence that threats or psychological coercion are employed in an effort to engage the child in sexual relations, then both Sexual Abuse and Emotional Maltreatment would be scored (Please see Sexual Abuse for elaboration of this point).

3 An important distinction between Emotional Maltreatment and Physical Neglect is necessary in instances of abandonment. In cases in which a parent abandons a child but ensures that the child is adequately supervised and that the child's physical needs are met (e.g., leaves the child with relatives with no information about the parent's whereabouts), we consider this to be Emotional Maltreatment. If the child is left completely alone with no [provisions for supervision or physical needs, then Lack of Supervision, Failure to Provide, and Emotional Maltreatment may each be scored.

4 In situations in which a young child is forced to accept primary responsibility for the care of another individual and in which criteria for Lack of Supervision are met (as a result of either child's need for more intensive supervision), then both Emotional Maltreatment (for the supervising child) and Lack of Supervision (for one or both children) would be scored.

Emotional Maltreatment = 500

Severity

- | | |
|----|---|
| 11 | The caregiver regularly expects or requires the child to assume an inappropriate level of responsibility (e.g., school-aged children assuming primary responsibility for caretaking younger children; the report must include an explicit statement that the child is responsible for the caretaking role). |
| 12 | The caregiver undermines the child's relationships with other people significant to the child (e.g., makes frequent derogatory comments about other parents). |
| 13 | The caregiver often belittles or ridicules the child (e.g. calls the child "stupid", "loser", "wimp"). |
| 14 | The caregiver ignores or refuses to acknowledge the child's bids for attention (e.g., the caregiver generally does not respond to infant cries or older child's attempts to initiate interaction) |
| 15 | The caregiver uses fear or intimidation as a method of disciplining. INCLUDE HERE PRESSURING A CHILD TO KEEP SECRET(S) ABOUT A FAMILY SITUATION. |
| 21 | The caregiver does not permit age-appropriate socialization (e.g. school age child not permitted to play |

- with friends).
- 22 The caregiver places the child in a role-reversal (e.g. child is expected to take care of the caregiver).
 23 The caregiver consistently thwarts the child's developing sense of maturity and responsibility (e.g. infantilizes the child).
 24 The caregiver rejects or is inattentive to or unaware of the child's needs for affection and positive regard (e.g., the caregiver does not engage in positive or affectionate interactions with the child; this lack of attention is a chronic pattern).
 25 The caregiver allows the child to be exposed to the caregiver's extreme but nonviolent marital conflict.
- 31 The caregiver blames the children for marital or family problems (e.g., tells the children that they are the reason for the spouses divorce).
 32 The caregiver sets up the child to fail or to feel inadequate by having inappropriate or excessive expectations for the child.
 33 The caregiver makes a serious and convincing threat to injure the child.
 34 The caregiver calls the child derogatory names (e.g. "slut", "whore", "worthless").
 35 The caregiver binds the child's hands and feet for moderate periods of time (e.g. approximately 2 to 5 hours), the child is not attended
 36 The caregiver exposes the child to extreme, unpredictable, and/or inappropriate behavior (e.g. violence toward other family members, psychotic or paranoid ideation that results in violent outbursts that terrorize the child; not used for DV between adult partners).
 37 The caregiver demonstrates a pattern of negativity or hostility toward the child (e.g. the caregiver screams at the children that they can never do anything right).
- 41 The caregiver threatens suicide or abandonment in front of the child.
 42 The caregiver allows the child to be exposed to extreme marital violence in which serious injuries occur to the caregiver; or life-threatening behaviors like choking.
 43 The caregiver blames the child for the suicide or death of another family member .
 44 The caregiver confines and isolates the child (e.g., locks the child in his or her room), and the confinement is between five and eight hours.

- 45 The caregiver uses restrictive methods to bind a child or places the child in close confinement for less than two hours. (Close confinement is scored in situations in which the child's movement is extremely restricted, or the temperature, ventilation, or lighting is severely limited or is maintained in a detrimental range).
- 51 The caregiver makes a suicidal attempt in the presence of the child.
- 52 The caregiver makes a homicidal attempt or realistic homicidal threat against the child without actual physical harm to the child.
- 53 The primary caregiver abandons the child for 24 hours or longer without any indication of when or if he or she will return and where he or she can be located (Note: Lack of Supervision and Failure to Provide may also be scored unless provisions are made for the child's physical well-being and need for supervision to be addressed. See earlier description for an elaboration of the interface among Emotional Maltreatment, Lack of Supervision, and Failure to Provide in instances of abandonment.
- 54 The caregiver uses extremely restrictive methods to bind a child or places the child in close confinement for two or more hours (e.g. the child is tightly tied to a chair, or locked in a trunk).
- 55 The caregiver confines the child to an enclosed space (e.g. locks the child in a closet or small space) for extended periods (e.g., more than 8 hours).

Moral-Legal/Educational Maltreatment 600/700

Moral-Legal/Educational Maltreatment is coded when any behaviors on the part of the caregiver or responsible adult occur that fail to demonstrate a minimum degree of care in assisting the child to integrate with the expectations of society, which includes insuring the child's adequate education. The caregiver either exposes or involves the child in illegal activity or other activities that may foster delinquency or antisocial behavior in the child. Alternately, the caregiver does not ensure that the child is properly socialized by regularly attending school.

MORAL/LEGAL = 600

EDUCATIONAL = 700

Severity

1

ML: The caregiver permits the child to be present for adult activities for which the child is under age.

ED: The caregiver often lets the child stay home from school, and the absences are not the result of illness or family emergency (e.g. a death in the family). The absences occur for less than 15% of the reported period.

Examples:

- ML: The caregiver takes the child to drunken parties and adult bars that are clearly not family situations.
- ED: The caregiver allows the child to miss 25 days of school in a school year without exceptions.

2

ML: The caregiver participates in illegal behavior with the child's knowledge (e.g., shoplifting, selling stolen merchandise)..

ED: The caregiver allows the child to miss school as much as 15%-25% of the reported period, not due to illness.

Examples:

- ML: The child was present when the caregiver was selling drugs.
- ED: The caregiver allows the child to miss school as much as 15%-25% of the reported period, not due to illness.

3

ML: The caregiver knows that the child is involved in illegal activities but does not attempt to intervene (e.g., permits vandalism, shoplifting, drinking).

ED: The caregiver keeps the child out of school or knows that the child is truant for extended periods (26%-50% of year, or as many as 16 school days in a row) without caregiver's intervention.

Examples:

- ML: The caregiver has been informed that the child has been shoplifting, but the caregiver has done nothing.
- ED: The child missed 3 consecutive weeks of school, not due to illness.

4

ML: The caregiver involves the child in misdemeanors (e.g. child is encouraged to shoplift, child is given drugs). Adults encourage or force participation in illegal activities. **INCLUDE HERE GIVING DRUGS OR ALCOHOL TO A CHILD.**

ED: The caregiver frequently keeps the child out of school for significant amounts of time (more than 50%) of the reported period, or 16+ days in a row), but the child maintains school enrollment.

Examples:

- ML: The caregiver encourages the child to steal food from the grocery store.
- ED: The family has moved several times, and each time, the child has missed significant periods of school. The child is enrolled, but has missed more than half of the school year.

5

ML: The caregiver involves the child in felonies (e.g., the child participates in armed robbery, kidnapping).

ED: The caregiver encourages a child (less than 16 years old) to drop out of school or does not send the child to school at all.

Examples:

- ML: The child has been living in a drug house run by the caregivers. The child has been involved in selling drugs and has participated in armed conflicts with other drug dealers.
- ED: The caregiver has not enrolled the child in school, and the child is receiving no educational instruction.

Drugs/Alcohol - 800

The use of drugs and/or alcohol has a negative effect on the well-being, caretaking or safety of the child. The severity for all 800 cases is 6. This is not to indicate an actual severity but rather an arbitrary number assigned as a blanket severity.

Examples:

- Drug use in the home
- Caregiver overdoses
- Mom stays out drinking
- Dad picked child up at daycare and was clear he had been drinking.
- Mom is a crack addict, she and her friends stay up all night doing drugs. Child comes to school late and is often tired.

