

Cognitive Style as a Mediator between Parental
Psychological Maltreatment and Depression in Adolescent Boys

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Submitted in partial fulfillment
of the requirements for the degree of Doctor of Philosophy
under the Executive Committee of The Graduate
School of Arts and Sciences
Columbia University

2012

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Abstract

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This study investigated cognitive style (CS) as a mediator between parental psychological maltreatment (PM) and depression (DEP) in a sample of adolescent boys. Rose and Abramson (1992) hypothesized that PM affects the development of DEP more than physical abuse (PA) or sexual abuse (SA) due to its unique characteristic of being a direct attack on an individual's self-worth (e.g., "You are stupid," "You never should have been born"). To assess PM in isolation, without confounding the data with other forms of maltreatment, PA and SA were measured and controlled in this study. In addition, this is the first time a comprehensive measure of PM (Comprehensive Assessment of Psychological Maltreatment – Child Version; Brassard et al., 2003-2011) has been used to assess the relationship between PM, CS, and DEP. A sample of 169 middle to upper-middle class ninth grade boys were administered five questionnaires: the Comprehensive Assessment of Psychological Maltreatment – Child Version, the Children's Cognitive Style Questionnaire (CCSQ; Abela, 1997), the Depression Subscale of the Behavior Assessment System for Children – Second Edition – Self-Report Adolescent (BASC-2; Reynolds & Kamphaus, 2004), and the Physical Assault Subscale and a single Sexual Abuse item from the Conflict Tactics Scale Parent-Child (CTSPC; Straus et al., 1998). On these measures, 10.4 percent of the participants reported significant PM, 8 percent reported negative CS, and 12.5 percent reported at risk or clinically significant levels of DEP. It was predicted that the relationship between PM and DEP would be partially mediated by CS, when controlling for PA

and SA, as existing research on the development of depression indicates numerous contributing factors (e.g., biological predisposition, negative life events). This hypothesis was tested using Baron and Kenny's (1986) four-step procedure for determining mediation and Sobel's (1982) test of significance. The results supported the prediction of partial mediation: controlling for PA and SA, CS was found to be a significant mediator between PM and DEP. Specifically, CS mediated 11 percent of the total effect of PM on DEP. Controlling for PA, PM alone accounted for 28 percent of the variance in DEP. Adding CS to the model increased the total variance in DEP to 30 percent. The results of this study suggest that PM specifically affects CS and subsequently DEP, which until now has only been speculated by researchers. Conclusions about the directionality of the data are based on a theoretical understanding that DEP and CS do not cause PM to occur. Due to this study's cross-sectional design, causality cannot be determined. Thus, the conclusions of this study must be interpreted with caution.

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ACKNOWLEDGMENTS

There are several people I would like to acknowledge for their contributions to my dissertation and more generally for their support throughout my five years of graduate school. I would first like to express an enormous amount of gratitude to my advisor and mentor, Dr. Marla Brassard. Her expertise in psychological maltreatment and enthusiasm for improving children's lives inspired me to conduct this research. Dr. Brassard supported me in pursuing my particular interests and has provided invaluable advice over the years. Second, I would like to thank the members of my dissertation committee, Dr. Lena Verdeli, Dr. Philip Saigh, Dr. Linda Hickson, and Dr. Ronald Feldman, for their insightful comments and constructive feedback. I would also like to thank Dr. Steven Peverly, who in addition to Dr. Brassard and Dr. Saigh, provided me with the highest quality education in school psychology, which has strongly prepared me for my future as a school psychologist. Additionally, I must thank Kelly Sichel, who shared this unique experience with me and has become a very close friend and provides incredible support.

Most importantly, I want to express my tremendous appreciation and gratitude to my family for their unconditional support in my pursuit of the doctorate. Much of my interest in psychological maltreatment is due to its extreme contrast to my childhood experiences and my strong belief that all children deserve to feel worthwhile and loved by their parents. Throughout my childhood and into my adult life, my parents, Paula and Dan Reingold, have encouraged me to be myself and pursue my interests. My parents, as well as my sister and brother-in-law Jessica and Jonathan Katz and husband Michael Melmed, have shown much interest in my coursework and internships and were enthusiastic to learn about my dissertation research. I am especially grateful to Michael, who has excitedly cheered me on, kept me calm, and provided comic relief as I navigated the long and often stressful process of graduate school. He also deserves a special

acknowledgment for teaching me Powerpoint skills that impressed my dissertation committee.
Michael's constant support and love have made the last five years much more manageable and a lot more enjoyable.

Chapter 1

Introduction

Psychological maltreatment (PM), also known as emotional abuse and neglect, is widely prevalent around the world (Binggeli, Hart, & Brassard, 2001; Claussen & Crittenden, 1991; Kaysen, Scher, Mastnak, & Resick, 2005; Sedlak et al., 2010; Straus & Field, 2003; Vissing, Straus, Gelles, & Harrop, 1991; Zolotor et al., 2009) and strongly related to poor developmental outcomes in children, including depression (see Donovan & Brassard, 2011; Hart et al., 2011 for reviews). PM, as compared to physical and sexual abuse, has the unique characteristic of being a direct attack on an individual's self-worth (e.g., "You are stupid," "You never should have been born"). Repeated messages like these have been demonstrated to relate to the development of depression in children (Gibb et al., 2006; Gibb & Alloy, 2006; Gibb & Abela, 2008; Kim & Cicchetti, 2006; Shaffer, Yates, & Egeland, 2009), young adults (Alloy et al., 2001; Gibb et al., 2001; Gibb, Alloy, Abramson, & Marx, 2003a; Gibb, Alloy, & Abramson, 2003b; Liu, Alloy, Abramson, & Iacoviello, 2009; Wright, Crawford, & Del Castillo, 2009), and adults (Cukor & McGinn, 2006; Kaysen et al., 2005). Research to support this relationship has been conducted using both cross-sectional and longitudinal methods as well as with both clinical and community samples.

A separate line of research has also found considerable evidence to suggest that vulnerability to depression is strongly related to cognitive style, which is the way in which people think about themselves and the way in which they interpret their experiences (e.g., "Because I failed a test, many bad things will happen to me"). A negative cognitive style typically develops because repeated negative messages and negative life experiences produce a

sense of hopelessness (Alloy et al., 2000; Alloy & Riskind, 2006; Crick & Dodge, 1994; Rose & Abramson, 1992). There has been little research on cognitive style as a mediating variable between PM and depression in children and the existing studies do not use a comprehensive measure of PM or do not control for physical or sexual abuse (Gibb et al., 2001; Gibb et al., 2003a; Gibb & Alloy, 2006; Kaysen et al., 2005; Wright et al., 2009).

Using the Comprehensive Assessment of Psychological Maltreatment – Child Version (CAPM-CV; Brassard, Hart, Diaz-Thompson, & Rivelis, 2003-2011) and controlling for physical and sexual abuse, this study investigates cognitive style as a mediator between PM and depression in middle to upper-middle class adolescent boys. This sample was chosen for several reasons: (1) cognitive style stabilizes and becomes trait-like during adolescence (Cole et al., 2008; Romens, Abramson, & Alloy, 2009) and metacognition typically evolves by age 15 (Mann, Harmoni, & Power, 1989), (2) gender-specific experiences of adolescent depression have not been a focus of research (only 35 articles on gender differences in adolescent depression were found through a *PsychInfo* search) despite consistent findings that adolescent girls are twice as likely to develop depression than adolescent boys (Marcotte, Alain, & Gosselin, 1999; Nolen-Hoeksema & Girgus, 1994; Wichstrøm, 1999), and (3) minimal research exists on the challenges of affluent children except for studies by Luthar and colleagues (Luthar & Becker, 2002; Luthar & D’Avanzo, 1999; Luthar, Shoum & Brown, 2006, Luthar & Latendresse, 2005a), which have found parental criticism and emphasis of achievement over their child’s personal integrity to be significantly related to internalizing symptoms.

Due to the paucity of research on PM in community samples and of research on depression in middle to upper-middle class adolescent boys, this study focuses on this population to investigate the relationships between PM, cognitive style, and depressive symptoms.

Psychological Maltreatment

Definition

Psychological maltreatment is “a repeated pattern of caregiver behavior or extreme incident(s) that convey to children that they are worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another's needs” (APSAC, 1995, p. 2; Brassard, Hart & Hardy, 1991, p. 255). This definition, developed by Hart and Brassard (1991, 2001), was incorporated into the *Guidelines for Psychosocial Evaluation of Suspected Psychological Maltreatment of Children and Adolescents* provided by the American Professional Society on the Abuse of Children (APSAC; 1995) as well as many other definitions of PM (e.g., Federal Child Abuse and Prevention Treatment Act, U.S. Department of Health and Human Services, 2003; American Academy of Pediatrics, Kairys, Johnson, & the Committee on Child Abuse and Neglect, 2002; American Humane Association). Six specific categories of psychological maltreatment have been identified: (1) spurning, (2) terrorizing, (3) isolating, (4) exploiting/corrupting, (5) denying emotional responsiveness, and (6) mental health, medical, and educational neglect. In addition to parental behavior that matches one of these definitions, PM must also show evidence of harm to the child or a high likelihood of harm. The complete APSAC definition, including these 6 categories and 21 subcategories, and two definitions of harm (evidence of delay or deviance in the acquisition of developmental benchmarks, evidence of psychopathology) can be found in Appendix A. This definition is the result of extensive empirical research (Baily & Baily, 1986; Binggeli et al., 2001; Brassard, Hart, & Hardy, 1993; Garbarino, Guttman & Seely, 1986; Hart & Brassard, 1986, 1989-1991; Hart, Germain & Brassard, 1987) and consultation with field experts including those from eight countries during the 1983 International Conference on Psychological Abuse of Children and Youth. The APSAC

definition of PM has been empirically validated (Binggeli, Hart, & Brassard, 2000; Brassard & Donovan, 2006; Burnett, 1993; English & LONGSCAN Investigators, 1997; Kairys et al., 2002; Portwood, 1999; Trickett, Mennen, Kim, & Sang, 2009; Wright, 2008) and is currently the standard and widely accepted definition among researchers and clinicians.

It is important to note that in the child abuse literature, the term psychological maltreatment is used interchangeably with emotional abuse and neglect, emotional maltreatment, psychological abuse and neglect, and verbal abuse. Additionally, most measures of this variable do not adequately represent the construct. However, for consistency, PM is used in this paper to describe all aforementioned terms despite the limitations of the instruments used. Despite inconsistent terminology and instruments, the consensus among researchers is that “psychological maltreatment is the most frequent form of child maltreatment, that it occurs in most families that exhibit other forms of maltreatment, and that it can occur in families that exhibit no other forms of maltreatment” (Brassard et al., 2000, p. 295). Even though PM is a behavior that can be committed by anyone (e.g., peers, teachers), this study focuses exclusively on parental PM. Parental PM can be chronic and pervasive, or only triggered by external factors (e.g., alcohol), or initiated by a singular event (e.g., a highly contentious divorce) (Kairys et al., 2002).

Prevalence and Incidence of PM

While there is much agreement among researchers about what parental behaviors cause mental harm or damage and thus constitute PM, there is a lack of consensus on the level of severity or number of instances required to distinguish between poor parenting and PM (Brassard & Donovan, 2006; Brassard & Melmed, in press). Thus, without a clear distinction or a gold standard, prevention or intervention efforts become quite challenging (Brassard & Melmed, in

press). While researchers utilize empirically valid and objective ways to measure psychological harm, assessing the prevalence or incidence of PM is difficult because it involves acts of omission in addition to acts of commission and it can often go unnoticed because it does not leave physical evidence like physical or sexual abuse (Brassard et al., 2000). In addition, surveillance measures use various levels of severity to calculate the prevalence of PM. Simeon (2006) asserts that due to these challenges prevalence reports are “gross underestimates” (p. 29).

Incidence. Incidence measures the risk a specific population has of developing a particular condition (Myers, 2009). A method of collecting data on the incidence of child abuse is to survey the professionals who are trained to assess occurrences of maltreatment. The most recent National Incidence Study of Child Abuse and Neglect (NIS-4; Sedlak et al., 2010), a survey of 10,791 professionals from 1,094 agencies (e.g., schools, hospitals, shelters, police etc.) as well as 126 Child Protective Services (CPS) agencies, was conducted between 2005 and 2006. This nationally representative sample of professionals recorded data on children they encountered who had either experienced maltreatment that has caused harm (“The Harm Standard”) or maltreatment that had not yet caused harm (“The Endangerment Standard”). The NIS-4 provided data on the total occurrence of maltreatment and how it broke down according to the two measurement standards and the six categories of maltreatment: physical abuse, sexual abuse, emotional abuse, physical neglect, educational neglect, and emotional neglect. Total maltreatment estimates ranged from 1.25 million children (Harm Standard) to 2.9 million children (Endangerment Standard), which corresponds to 1.7 to 4 percent of the child population in the United States. Emotional abuse was found to occur in 27 (Harm Standard) to 36 percent (Endangerment Standard) and emotional neglect was found to occur in 25 (Harm Standard) to 52 percent (Endangerment Standard) of maltreatment cases reported. While every other type of

abuse and neglect, according to either standard, decreased or remained the same since the NIS-3 conducted in 1993 (Sedlak & Broadhurst, 1996), Endangerment Standard emotional neglect doubled (a 101% increase). The NIS-4 authors attribute this significant increase to increased awareness and thus increased identification of neglect by professionals. Boys and White children were less likely than girls and Black or Hispanic children to experience an increase in emotional neglect. Another change from the NIS-3 was that rates of emotional maltreatment under both definitions among Black children rose to become significantly higher than White or Hispanic children. The NIS-4 is a remarkable study in that it includes children of all socio-economic backgrounds by collecting data from community professionals in addition to CPS agencies and that it includes children who are in danger of being hurt as well as children who have already been hurt by assessing maltreatment by both the harm standard and the endangerment standard. These factors allow for highly accurate estimates of the incidence of child maltreatment known to professionals.

The differences between an incidence study involving community agencies in addition to CPS agencies are apparent when comparing the NIS-4 to the Child Maltreatment Annual Report by the National Child Abuse and Neglect Data System (NCANDS; U.S. Department of Health and Human Services, 2009). This study, supported by the U.S. Department of Health and Human Services, calculated the percent of CPS reports from 49 states that were screened-in for investigation that included PM. This study identified 52,532 incidents of PM per year, which is 7.6 percent of the total number of abused or neglected children investigated by CPS (U.S. Department of Health and Human Services, 2009). While the authors claim the methodology represents 99 percent of children in the United States under age 18 (74 million), they only included children for whom credible reports were made to CPS. Although these reports could be

made by schools or other community members, PM is likely to be considerably underrepresented in CPS calls due to lack of physical evidence, difficulty for untrained observers to distinguish between PM and poor parenting, and great variability in state laws. Prevalence and incidence rates vary tremendously because there is a lack of clarity within and across state laws as to what constitutes PM (definitions available at www.childwelfare.gov). For example, some states do not screen-in reports of PM unless the child has suffered physical harm (e.g., New York), some states use the term mental injury and leave its meaning undefined (e.g., Kentucky) while others have a clear description of the PM behavior in the law to guide practice and implementation (e.g., Minnesota).

Prevalence. Prevalence describes the percent of a population who experience a given condition at a specific time (Myers, 2009). One method used to collect prevalence data is to survey parents about their current parenting behaviors. Straus and Field (2003) used random digit dialing to interview parents via telephone about their own behavior to their children and found that 90 percent reported using one or more forms of psychological aggression by age 2 and 95 percent by age 5. While singular or a small number of negative parenting behaviors are unlikely to constitute maltreatment, the commonness of these behaviors and willingness of parents to report them demonstrates the pervasiveness of psychologically maltreating behaviors. Although not up to date, the Second National Family Violence Survey of 1985 produced consistent results with Straus and Field (2003). This survey gave six verbal/symbolic aggression items from the Conflict Tactics Scale (Straus et al., 1979, 1988, 1990) to parents of 3346 children under age 18 and found that two-thirds of American children were victims of any verbal aggression and 17 percent of adolescents (ages 12-17) experienced 20 or more incidents of verbal aggression per year (Vissing et al., 1991). Boys and children over 7 years old experienced

more verbal aggression than girls and children under 7 years old (approximately 5% and 10% more incidents, respectively) (Vissing et al., 1991). This study also found that parental acts of verbal aggression occurred on average 12.6 times per year and that more than a third of those surveyed reported 11 or more instances (Vissing et al., 1991). In addition, younger children experienced more chronic verbal aggression than older children (ages 0-6: 13.9 incidents per year; ages 7-11, 12.6 incidents per year; ages 12-17, 11.4 incidents per year). Both of these surveys, while able to reach large numbers of participants, rely on parent self-report of their own behaviors, which is unlikely to result in accurate representations of their true behavior whether because they fail to recall, unintentionally suppress, or purposefully conceal such incidents.

Retrospective surveys about one's childhood experiences are another method used to assess the occurrence of PM. Binggeli et al. (2001) reviewed all extant prevalence studies of adults recalling their childhood experiences with PM and discovered that approximately 33 percent of those surveyed experienced significant PM and 10 to 15 percent experienced chronic and severe PM. However, because there is typically a long delay between the abuse and the victim's report, issues of recall bias and social desirability bias arise (Zolotor et al., 2009).

Another factor complicating accurate prevalence data is that PM often co-occurs with physical abuse and sexual abuse. Claussen and Crittenden (1991) collected data between 1985 and 1987 from both clinical (Child Protection Team referrals) and community (normative volunteers and volunteers with a child receiving mental health treatment) samples (M=51.9 months, 49% girls). For each of the clinical and community samples, cases of physical maltreatment were often accompanied by PM (89% and 90%, respectively). The clinical sample had similar results when cases of PM were looked at as 86 percent had co-occurring physical maltreatment; however, in the community sample, only 25 percent of PM cases also reported

physical maltreatment (Claussen & Crittenden, 1991). As demonstrated by Claussen and Crittenden (1991), co-occurrence of psychological and physical maltreatment is not only very common, but it also differs depending on the sample. Gibb et al. (2003b) also found significant co-occurrence of PM with physical abuse and sexual abuse; only 25 percent of the young adult participants reported PM alone. Similarly, in Kaysen et al.'s (2005) assessment of recently traumatized women, 83 percent of those who reported physical abuse in childhood also reported experiencing PM, but the authors do not report what percentage of those emotionally abused were also physically abused except that there was a correlation of .44 between the two (see Table 1).

While prevalence rates vary considerably by source and method of data collection, it is clear that PM is a common occurrence in the United States. Additionally, rough prevalence data on PM using convenience samples has been collected internationally, suggesting that PM is common worldwide. Using the ICAST-C, a surveillance survey for children ages 11-18 living at home, created by experts representing 80 countries and published by the International Society for the Prevention of Child Abuse and Neglect in eight languages, Zolotor et al. (2009) discovered PM (both parental child abuse and older sibling abuse) to be experienced by 64 percent of children surveyed in Colombia, 72 percent in India, 81 percent in Russia, and 48 percent in Iceland.

Although not typically represented in official statistics, PM is as, if not more, prevalent than other forms of abuse (Barnet, Miller-Perrin, & Perrin, 2005; Gibb et al., 2001; Hart & Brassard, 1987; Rose & Abramson, 1992). In addition, there is great variability as to whether reports of PM are acknowledged if not accompanied by another form of abuse or neglect. Screening decisions by child welfare workers may also be influenced by the perception that even

if they screened in a child for PM, it would not be taken seriously by a judge. Barnett et al. (2005) state that even though the data does not reflect it, PM may be the most prevalent form of child maltreatment. They describe PM as “the most elusive form of maltreatment” (p. 177) because it is the most hidden, under-reported, and least studied form of abuse. Despite these complications and widespread acceptance that reported statistics considerably under represent the true prevalence of abuse and neglect (Zolotor et al., 2009), the data shows that PM is experienced by a significant amount of children worldwide and that its effects are harmful.

The Relationship between Psychological Maltreatment and Mental, Behavioral and Physical Health

The unique and potentially most damaging aspect of PM is that the parent supplies the negative cognitions to the child, rather than the child developing them on their own as with physical and sexual abuse (Rose & Abramson, 1992). When physical or sexual abuse occurs, there is a step that occurs as a result of the abuse where the victims must assign themselves negative attributes (e.g., “I am worthless” or “I am unwanted”). With PM, the parent directly provides the child with those thoughts (e.g., “You are stupid” or “You should never have been born”). PM bypasses the step where the child is left to make an interpretation about why they are being mistreated, providing no room to protect oneself with a defense mechanism (e.g., denial, repression) or external attribution.

Although prevalence is difficult to measure, the deleterious effects of PM are well documented in correlational and longitudinal studies. The impact of PM extends across multiple domains, including social, emotional, self, cognitive, and biological processes (Yates, 2007). Vissing et al.’s (1991) prevalence survey revealed that the relationship between verbal aggression by parents and psychosocial problems occurs across age, gender, and socio-economic

groups. In addition, Brassard and Donovan (2006) conclude from their exhaustive review of studies that PM has significant effects on children throughout development. Specifically, they found that spurning and terrorizing, two forms of PM according to the APSAC definition, each had a unique effect on the development of conduct problems, delinquency, anxiety disorders, depression, suicidal behavior, and personality disorders. Similarly, Simeon's (2006) recent review of 32 empirical studies found relationships between PM (broadly defined using Garbarino et al., 1986 and Hart & Brassard, 1991) and personality disorders, mood disorders, eating disorders, dissociative disorders, somatoform disorders, and schizophrenia.

Victims of PM suffer from a variety of both internalizing and externalizing problems. Internalizing problems shown by research to occur as a unique result of PM include difficulty identifying and regulating emotions (Brassard, Germain, & Hart, 1987; Hart, Binggeli & Brassard, 1998), slower development of self-esteem (Hart et al., 1998; Kim & Cicchetti, 2006), destroyed sense of self and personal safety (Kairys et al., 2002), as well as anxiety, depression, self-isolation, and suicidality (Hart et al., 1998). PM has been found to be a greater predictor of internalizing problems than physical abuse, sexual abuse, physical neglect, and exposure to family violence (McGee, Wolfe, & Wilson, 1997).

Individuals who specifically experienced PM have also been found to encounter externalizing problems, such as anger, aggression, lack of impulse control, low empathy and difficulty establishing and maintaining peer relationships (Hart & Brassard, 1987; Hart et al., 1998), relationship violence (Berzenski & Yates, 2010), behavior problems (Vissing et al., 1991), delinquency/criminality, non-compliance, and sexual maladjustment (Hart et al., 1998). Additionally, in their literature review, Hart et al. (1998) identified learning problems, poor

physical health, and psychological disorders such as borderline personality disorder, eating disorders, substance abuse, and physical self-abuse as consequences of PM.

Brassard and Donovan (2006) conducted a critical review of all published empirical studies using child samples and reported the specific impact PM has on children at each stage of development. From birth to age two, psychologically maltreated children were found to be more likely to experience attachment insecurity and have more internalizing and externalizing problems than physically neglected children. During the preschool years, research has found that non-compliance, aggression, and negative affect arise among psychologically maltreated children, who are also reported to have less interest in learning than high-risk controls. In middle childhood and early adolescence, psychologically maltreated children demonstrate increased social-emotional, behavioral, and interpersonal problems. Psychological abuse specifically has been linked to delinquency, aggression, depression, and low peer acceptance. In late adolescence and young adulthood, those who were psychologically maltreated as children have increased adjustment problems. Research on adolescents has found that emotional neglect alone or in combination with verbal abuse (specifically spurning and terrorizing) is the most detrimental. Emotional neglect alone has been found to predict suicide attempts, obsessive-compulsive disorder, and trichotillomania. Verbal abuse alone or in combination with emotional neglect has been identified as a predictor of social phobia, alcohol and tobacco use, delinquency, aggression, interpersonal problems, and dating violence.

Research has also identified biological damage and psychopathology as consequences of PM. Yates (2007) cited several neurodevelopmental research studies, the majority of which agreed that childhood emotional abuse was associated with dysregulation of both the L-HPA and NE-SAM stress response systems.

Parental Psychological Maltreatment and Depression

Psychological maltreatment has been demonstrated in the research to have a strong relationship to depression in children (Gibb et al., 2006; Gibb & Alloy, 2006; Gibb & Abela, 2008; Kim & Cicchetti, 2006; Shaffer et al., 2009), young adults (Alloy et al., 2001; Gibb et al., 2001; Gibb et al., 2003a; Gibb et al., 2003b; Liu et al., 2009; Wright et al., 2009), and adults (Cukor & McGinn, 2006; Kaysen et al., 2005). Several studies, aiming to identify distinct effects for each type of abuse, have found significant relationships between PM and depression (see Table 1). Kim and Cicchetti (2006) recruited children from a research day camp, approximately half of whom were maltreated according to the Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993), a system for coding child protective service records. Controlling for both physical and sexual abuse, Kim and Cicchetti (2006) found that parental PM was the strongest predictor of self-esteem and depressive symptom trajectories for both girls and boys over 12 years. Liu et al. (2009) followed undergraduates prospectively for 2.5 years and found that current experiences of PM predicted the onset of clinically significant depressive episodes when controlling for initial and past depression.

Shaffer et al. (2009) found that when controlling for gender and other abuse, emotional abuse and emotional neglect were each significantly related to social withdrawal, a symptom of depression in middle childhood (see Table 1). They also found that both forms of PM were strongly related to aggression. The authors suggest that psychologically maltreated children may become socially withdrawn and aggressive, both interpersonal and relational variables, as ways to cope and protect themselves from future maltreatment (Shaffer et al., 2009). Rose and Abramson (1992) explain that PM is more likely than physical or sexual abuse to contribute to the development of hopelessness depression, a subtype of depression, because negative

cognitions are supplied by the abuser (e.g., “You’re so stupid;” “You’ll never amount to anything”), leaving little room for the victim to make a more benign attribution for the abuser’s behavior. A specific exploration of Rose and Abramson’s (1992) hypothesis was conducted by Gibb and Abela (2008) who found parental PM to significantly relate to the development of depression in seventh grade children (see table 1).

Theoretical Models of the Psychosocial Mechanisms that cause Depression

The focus of this research is on the psychosocial mechanisms that cause depression, but it is important to acknowledge the strong biological/genetic factors that increase one’s risk for depression. According to the DSM-IV-TR, Major Depressive Disorder is 1.5 to 3 times more common among first-degree biological relatives than among the general population (APA, 2000). A meta-analysis conducted by Sullivan, Neale and Kendler (2000) found that heritability of major depression is at minimum between 31 and 42 percent. However, it is widely accepted that the interaction of genetic vulnerability and environmental factors is most predictive of depression. For example, studies by Caspi et al. (2003) and Gibb, Uhrlass, Grassia, Benas, & McGeary (2009) found evidence that a gene-by-environment interaction affects the development of depression. Caspi et al.’s (2003) findings suggest that the 5-HTT genotype increases one’s vulnerability to stressful life events, thus moderating the effect the environment has on the development of depression. Gibb et al. (2009) more specifically found that the 5-HTTLPR genotype moderated the relationship between maternal criticism and children’s depressive symptoms. They found the highest depressive symptoms to occur in children who had both negative inferential style for the self (CCSQ-Self; Abela, 1997) and two copies of the 5-HTTLPR lower expressing alleles. While it is impossible to disentangle genetic influences from environmental influences, research suggests that an individual’s genetic makeup impacts what

environments are chosen as well as the way in which environmental stressors are perceived (Caspi et al., 2003).

Although a relationship between PM and depression has been established through empirical research, it is important to also understand the mechanisms through which parental PM might result in depression. Several theorists, subscribing to the cognitive view of depression that symptoms of depression arise from maladaptive cognitions, provide possible explanations for how early experiences may relate to the development of depression. Beck's Cognitive Theory of Depression (Beck, 1967), Young's Schema Theory (1990) and Abramson, Metalsky, and Alloy's Hopelessness Theory (1989) each hypothesize that negative cognitive style influences the development of depression. Although they do not all directly discuss the origins of negative cognitive style, these theories present three potential pathways through which childhood PM may relate to depressive symptoms.

Beck's Cognitive Theory of Depression

Aaron Beck (1967) proposed a theory about the onset, maintenance, and exacerbation of depression (Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010). As a cognitive psychologist, he believed that inner thoughts and patterns of thoughts dictated moods and behavior, such that irrational thoughts or dysfunctional cognitions induced depression. His model included three elements that contributed to the development of depression: the cognitive triad, depressive self-schemas, and faulty information processing (Beck, Rush, Shaw & Emery, 1979).

Beck coined the term "negative cognitive triad" to refer to the three areas about which negative cognitions develop: the self, the environment, and the future (Beck et al., 1979).

Depressive self-schemas involve negative interpretations of situations that are often attributed to

defects in the self. Often with depression, negative thoughts dominate even if there is no logical connection between the situation and the individual's depressogenic interpretation (Beck et al. 1979). Faulty information processing consists of systematic cognitive errors that function to maintain the individual's negative beliefs despite contradictory evidence (Beck et al., 1979).

Beck argued that negative experiences during childhood contributed to the development of these negative cognitions, which in turn "influence the perception, interpretation, and recall of personal experience, thereby leading to a negatively biased construal of one's self, personal world, and future" (Alloy, Abramson, Walshaw, & Neeren, 2006a, p.728). According to Beck's theory, these negative beliefs about one's self contribute to development of emotional disorders and help to maintain them (Van Vlierberghe et al., 2010). According to the diathesis-stress model, negative thoughts developed in childhood are activated by stressful life experiences (Van Vlierberghe et al., 2010). These stressors have their greatest impact on individuals who have depressogenic cognitions from childhood, placing them at greatest risk for depression (Beck, 2002).

In later applications of his theory, Beck (1987) identified two types of people who are vulnerable to depression: those high on sociotropy and those high on autonomy. People high on sociotropy are concerned with "intimacy, relationships, and acceptance from others and are vulnerable to depression when they experience interpersonal rejections, losses, or disappointments" (Alloy et al., 2006a, p. 728). People high on autonomy are concerned with "achievement, independence, and control and are at risk for depression when they experience failures or events that impinge on their personal choice" (Alloy et al., 2006a, p. 728). Although sociotropy and autonomy are described as personality types, Beck has not explored the origins of how such personalities develop.

Young's Schema Theory

Schema Theory, developed by Jeffrey Young, a student of Aaron Beck, is an extension of Beck's Cognitive Theory of Depression (1967). The term schema, dating back to Greek philosophy, generally refers to "a structure, framework or outline" (Young, Klosko & Weishaar, 2003, p. 6). In cognitive psychology, a schema is "a pattern imposed on reality or experience to help individuals explain it, to mediate perception, and to guide their responses" (Young et al., 2003, p. 6). Simply, schemas develop from individual experiences to help process and react to new events more efficiently. Because schemas represent typical patterns in one's life, expectations are developed about people's behavior and particular situations. Schemas can be positive and adaptive (e.g., "If I try hard, I can be successful") as well as negative and maladaptive (e.g., "There is no point in trying, I will never succeed") and they "play a major role in how individuals think, feel, act, and relate to others" (Young et al., 2003, p. 61).

Young (1990), like Beck, emphasizes the importance of early experiences in the development of schemas. Young identified 18 Early Maladaptive Schemas, which are pervasive patterns of memories, emotions, cognitions, and bodily sensations, about oneself and others, that were developed during childhood, elaborated over time, and are significantly dysfunctional in one's life (Young et al., 2003). The 18 Early Maladaptive Schemas are organized into five categories: (1) disconnection and rejection (lacks expectation of safety, nurturance, acceptance), (2) impaired autonomy and performance (expects failure and feels unable to survive on own), (3) impaired limits (lacks responsibility to others, lacks goal orientation), (4) other-directedness (focuses on others at expense of own needs to gain love and approval), and (5) overvigilance and inhibition (feels compelled to follow rigid ethical rules and suppress impulses) (Cukor & McGinn, 2006; Young et al., 2003). Adverse childhood experiences are posited to be the

primary origin of Early Maladaptive Schemas, such as “severe deprivation, rejection, abuse, instability, criticism, or abandonment” (McGinn, Young, & Sanderson, 1995, p. 188). These experiences are often reported to underlie chronic Axis I disorders such as anxiety and depression (Young et al., 2003), suggesting that the relationship between childhood PM and depression may be mediated by schemas.

Abramson, Metalsky, and Alloy’s Hopelessness Theory of Depression

Introduced by Lyn Abramson, Gerald Metalsky, and Lauren Alloy (1989), the Hopelessness Theory of Depression describes the etiology of a subtype of depression called Hopelessness Depression. The Hopelessness Theory builds on Martin Seligman’s (1975) findings about learned helplessness and focuses on the cognitive activity that occurs within individuals as they strive to understand the cause and meaning of an event (Rose & Abramson, 1992). As with Seligman’s dogs, personal experience informs the inferences that humans generate about events. There are three dimensions on which these attributions are made: (1) internal (oneself is the cause of the event) or external (factors outside oneself are the cause of the event), (2) stable (the cause of the event is a permanent factor) or unstable (the cause of the event is a temporary factor), and (3) global (the cause of the event is pervasive, spanning many situations) or specific (the cause of the event is situational) (Joiner & Wagner, 1995).

Typically, when confronted with a negative experience, individuals make external, unstable and specific inferences, feeling hopeful that they can prevent such outcomes in the future (Rose & Abramson, 1992). However, after “repeated disconfirmations of hopefulness-inducing cognitions” (Rose & Abramson, 1992, p. 340), the individual begins to feel hopeless and pessimistic about their ability to prevent future negative situations. Inferences can be made about the causes of an event, the consequences that result from the event, or characteristics about

the self, given that the event occurred (Rose & Abramson, 1992). The Hopelessness Theory states that making internal, stable, and global attributions for negative events contributes to the development of hopelessness and vulnerability to depression (Alloy, Abramson, Keyser, Gerstein, & Sylvia, 2008).

The Hopelessness Theory is a diathesis-stress model and posits that when negative life events (stress) occur to someone with a negative cognitive style (diathesis), hopelessness results and places the individual at risk for depression (Rose & Abramson, 1992). Hopelessness, which describes negative expectations about the future, is considered the “proximal, sufficient cause of hopelessness depression” (p. 778) meaning that there are no variables that intervene between hopelessness and depression (proximal) and that if hopelessness develops, depression follows soon after (sufficient) (Joiner & Wager, 1995). In addition, the theory states that negative cognitive style is “a distal and contributory cause of hopelessness and, thus, depression” (p. 778), meaning that cognitive style precedes (distal) hopelessness and depression, but that it is not necessary (contributory) for the development of hopelessness or depression (Joiner & Wager, 1995). Hopelessness depression is a subtype of depression that differs from Major Depressive Disorder in that it requires the “retarded initiation of voluntary responses” and excludes symptoms such as appetite disturbance, irritability, and low sociability (Alloy, Just, & Panzarella, 1997).

Maltreatment is cited as having a particularly harmful effect on the development of negative cognitive style and hopelessness. Rose and Abramson (1992) explain: “When a child’s basic working model of relationships with others includes images and beliefs that maltreatment is part of interpersonal interactions, the child may more readily believe that people in many areas of life will continue to treat him/her badly” (p. 335). Because emotional abuse directly supplies

specific negative characteristics about the child and limits their ability to make external, specific, and unstable inferences about the situation, Rose and Abramson (1992) consider PM to be “a particularly noxious contributor to negative cognitive style” (p. 344) and thus hopelessness and hopelessness depression.

Negative Cognitive Style and Depression

Research on cognitive theories of depression has identified a clear and strong relationship between negative cognitive style and depression. Although Beck’s and Young’s theories look specifically at dysfunctional schemas about the self and others and the Hopelessness Theory focuses on negative cognitive style, two distinct constructs, they both hypothesize that cognitive vulnerability increases risk for depression due to the way in which individuals process their experiences (Haefel et al., 2003). Beck’s dysfunctional schemas, as measured by the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978), are considered a conceptually broader construct than negative cognitive style, as measured by the Cognitive Style Questionnaire (CSQ; Alloy et al., 2000). Haefel et al. (2003) cites several studies that found that these constructs load onto distinct factors and that depressed patients who score highly on the DAS greatly differ from those who score highly on the CSQ. In a series of studies conducted by Alloy and colleagues (2000), negative cognitive style, as compared to dysfunctional attitudes, was found to be the “potent component” of cognitive vulnerability to depression (Haefel et al., 2003, p. 14). Given these findings, this study focuses on the Hopelessness Theory and the construct of negative cognitive style.

Cognitive style is an umbrella term that describes patterns of thinking, such as attributional style and inferential style. Attributional style describes how one attributes the causes of an event, which is essentially the same concept as one of the three subtypes of

inferential style: *Causes*. There are also two additional inferential styles: *Consequences* which refers to the consequences one expects after encountering a negative event, and *Self* which reflects how one feels about himself as the result of a negative event. Negative cognitive style is characterized by a combination of internal, stable, and global attributions. Rose and Abramson (1992) define negative cognitive style as “the tendency to infer stable-global causes, negative consequences, [or] negative self characteristics given negative events” (p. 331). In response to a negative event, individuals with negative cognitive style are likely to blame themselves (internal), view the cause of the event as consistent over time (stable), and generalizable across situations (global) (Gladstone & Kaslow, 1995). For example, in response to failing a test, someone with negative cognitive style might say “I failed the test because I am stupid” (Joiner & Wagner, 1995, p. 778). This person has interpreted this event as his fault (internal) and blames his overall lack of intelligence (stable and global). In response to the same situation, someone with positive cognitive style might say, “I failed the test because the class clown distracted me” (Joiner & Wagner, 1995, p. 778), which is a specific-external-unstable attribution. In addition, individuals with negative cognitive style characteristically make external, unstable, and specific attributions about positive life events (Gladstone & Kaslow, 1995), such as, “I passed the test because the teacher graded it easily.”

According to cognitive theories of depression, the interpretations individuals make about their experiences affects their vulnerability to depression. The more frequently internal, stable, and global attributions are made, the more likely a pattern of beliefs will develop, ultimately crystallizing into a negative cognitive style (Crick & Dodge, 1994). Individuals who repeatedly interpret life events negatively are vulnerable to depression because they believe that they are “fundamentally flawed or worthless” (p. 34) and that negative consequences are inevitable

(Alloy & Riskind, 2006). The depressogenic thinking that defines negative cognitive style places this group at greater risk for developing depression than those with positive cognitive styles (Alloy et al., 2000).

Research on the relationship between cognitive style and depression dates back several decades. Two early meta-analyses conducted by Joiner and Wagner (1995) and Gladstone and Kaslow (1995) summarized the research specifically on children and adolescents through 1994. Accounting for overlap, they evaluated 39 different studies on the relationship between cognitive style or attributional style and depression in children and adolescents that were completed between 1981 and 1994. The research through 1994 was primarily cross-sectional and the majority of studies found an association between attributional style and self-reported depressive symptoms (Gladstone & Kaslow, 1995; Joiner & Wagner, 1995). Specifically, internal-stable-global attributions for negative events (Negative Composite) *and* external-unstable-specific attributions for positive events (Positive Composite) were positively associated with depression (Gladstone & Kaslow, 1995; Joiner & Wagner, 1995). Joiner and Wagner (1995) included seven prospective studies, but found the results to be inconclusive; the Overall Composite received moderate support as a predictor of depression, but the Negative Composite did not produce a significant effect.

The most recent and convincing evidence of negative cognitive style as a predictor of depression has emerged from a series of prospective and cross-sectional studies conducted by the Temple-Wisconsin Cognitive Vulnerability to Depression (CVD) Project (Alloy & Abramson, 1999). One of the primary aims of the CVD Project was to assess the relationship between cognitive style and depression, both the occurrence of depressive symptoms and clinically significant depression (Alloy & Riskind, 2006). Their goal was to evaluate the cognitive

vulnerability and other etiological hypotheses of both the Hopelessness Theory and Beck's theory of depression. The CVD Project occurred from 1990 to 2004 and included 349 undergraduate students at two sites: Temple University and the University of Wisconsin (Alloy & Abramson, 1999). Participants were classified as high or low risk for depression by their baseline scores on two measures of depressogenic thinking (Alloy et al., 2000). Only the 25 percent who scored the lowest (low risk) and the 25 percent who scored the highest (high risk) were included in data analysis; the middle 50 percent were excluded from analysis.

The CVD's initial analysis was cross-sectional, comparing rates of past depression in high risk (i.e., negative cognitive style) participants to rates of past depression in low risk (i.e., positive cognitive style) participants. Alloy et al. (2000) reported that participants with high risk exhibited greater incidence of major depression in their lives to date than those with low risk, while controlling for current depressive symptoms (see table for participants, measures, and statistics). There were no risk group differences in lifetime history of anxiety disorders, substance use disorders, or other psychiatric disorders (Alloy et al., 2000). The CVD's cross-sectional findings are consistent with those found in the meta-analyses conducted by Joiner and Wagner (1995) and Gladstone and Kaslow (1995).

Prospective research was the primary focus of the CVD Project because the researchers were interested in negative cognitive style as a precipitant to depression. A behavioral high-risk design was used so that participants' level of risk (high risk = negative cognitive style) could be used to predict the onset of depressive symptoms. Thus, participants were excluded if they met criteria for an Axis I diagnosis at the beginning of the study ensuring that the data was uncontaminated by a previous history of depression. Data was collected every 6 weeks for 2.5 years and then every 16 weeks for an additional 3 years (Alloy & Abramson, 1999). Data was

obtained through self-report and structured interviews on participants' stressful life events, cognitions, and symptoms or clinical episodes of depression and other disorders (Alloy & Abramson, 1999). Analysis of the results (see Table 1) specifically looking at the relationship between cognitive risk and depression revealed that individuals classified as high risk were more likely to experience a first lifetime onset of Major Depression, minor depression, and hopelessness depression than individuals classified as low risk (Alloy et al., 2006b). However, the participants did not differ in their development of anxiety or other Axis I disorders (Alloy et al., 2006b).

The results of Alloy et al. (2006b) combined with the findings from Gladstone and Kaslow's (1995) and Joiner and Wagner's (1995) meta-analyses demonstrate that negative cognitive style predicts the onset and recurrence of depressive disorders.

Psychological Maltreatment and Negative Cognitive Style

While cognitive theories hypothesize that depression originates from negative events in early childhood, research on childhood maltreatment as a precursor to negative cognitive style is in its infancy (Alloy & Riskind, 2006; Cole et al., 2008). Alloy and Riskind (2006) summarize Rose and Abramson's (1992) model proposing how negative cognitive style develops in the context of child maltreatment. Initially when maltreatment occurs, the human instinct is to learn to avoid the situation in the future, which allows hopefulness to be maintained. However, when the maltreatment is ongoing, hopefulness decreases and internal, stable, and global negative attributions develop about oneself and external events. The result is that these thoughts generalize to all situations, not just the maltreatment situation, thus creating a negative cognitive style.

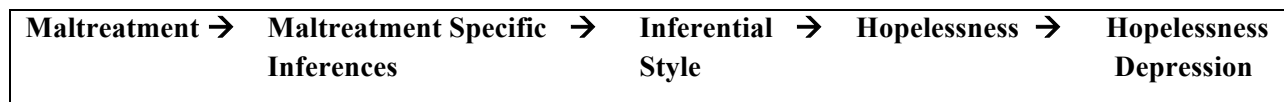


Figure 1. Rose and Abramson’s (1992) Hopelessness Model

Researchers do not specifically discuss the construct of PM in relation to cognitive style, but there is “a recurrent theme” (Alloy, 2001, p. 350) in the literature that exposure to negative circumstances leads to the development of a negative cognitive style. Cole et al. (2008) stated that childhood events and parenting styles are alluded to as possible developmental origins of negative cognitions in cognitive models of depression. Specifically, Beck’s Theory (1967, 1987) speculated about negative childhood events, Young et al. (2003) stated that repeated noxious experiences “lead to the emergence of a full-blown schema” (p. 8), and Rose and Abramson’s reformulated Hopelessness Theory (1992) suggests recurrent maltreatment as a possible source of negative cognitive style.

Retrospective and prospective research have investigated several specific aspects of negative parenting behavior, including negative, inferential and consequence feedback, excessive restrictiveness, rejection, low care (Randolph & Dykman, 1998), overprotection, perfectionistic expectations, criticism, rigidity, overcontrolling or psychological control, lack of warmth, and sexual abuse in combination with negative parenting (Alloy et al., 2001; Gibb et al., 2006; Koestner, Zuroff, & Powers, 1991; Mezulis, Hyde, & Abramson, 2006; Randolph & Dykman, 1998; Rose, Abramson, Hodulik, Halberstadt, & Leff, 1994).

Negative feedback from parents can occur in both an explicit and implicit manner. Explicitly, parents verbally state that negative events in the child’s life and the negative consequences of those events are due to stable, global negative characteristics of the child (Mezulis et al., 2006). Implicitly, negative parental feedback can cause a child to feel deficient

or at fault for negative events in their life through a critical, angry, or hostile home environment (Mezulis et al., 2006). Whether feedback is directly or indirectly supplied, the child develops a cognitive style consistent with the way in which his or her parents communicate the causes and consequences of events in their child's life (Alloy et al., 2004). Prospective research by Alloy et al. (2001) of undergraduates supports that parents of children with negative cognitive styles provided more stable, global feedback and more negative consequences for negative events over 2.5 years than did parents of children with positive cognitive styles (see Table 1). A longitudinal study by Mezulis et al. (2006) of children from infancy to 11 years old revealed a difference between mothers and fathers; negative maternal parenting was more strongly related to child's cognitive style than negative paternal parenting (see Table 1). In another longitudinal study with elementary school children, Gibb et al. (2006) found that neither parents' report of negative life events occurring for their child in the previous 6 months nor the parents' attributions for these events predicted changes in their children's attributional styles over a 6 month period (see Table 1). However, these researchers found that experiences of verbal victimization (by parents, peers etc.) over the 6 month study period did in fact predict increasingly negative attributional styles. While negative feedback (from parents) and verbal victimization (from any adult or a peer) are distinct variables, they share a common foundation with PM and have been mostly found to affect the way children think about themselves and the negative circumstances they may encounter. Gibb and Abela (2008) investigated the prospective relationship between parental emotional abuse and peer victimization, measured as distinct variables, and cognitive style with a sample of seventh grade children (see Table 1). Parental emotional abuse was specifically found to be significantly related to negative changes in two aspects of cognitive style, causes

(attributional style) and consequences, but did not increase negative ratings about oneself as a result of hypothetical situations.

Several additional parenting behaviors have been researched in connection to the development of negative cognitive style. Koestner et al. (1991) analyzed longitudinal data of temperament, views of oneself, and aggressiveness at ages 5, 12, and 31 and concluded that parenting behavior prior to the child's fifth birthday, such as excessive restrictiveness and rejection, according to the mother's self-report, contributed to the development of a self-critical personality style in adolescence and adulthood (see Table 1). Randolph and Dykman (1998) had undergraduates retrospectively report on their parents' level of care (care/warmth vs. indifference/rejection), overprotection, perfectionistic expectations, and verbal criticism (e.g., "You're going to mess it up; let me do it") in childhood (see Table 1). The researchers found that parental demand of perfection followed by critical parenting had the greatest relationship to dysfunctional attitudes in young adulthood. These researchers also identified differences between mothers and fathers; mothers were found to be more overprotective while fathers were less caring, more perfection-demanding, and more critical (Randolph & Dykman, 1998). The relationship between a father's lack of warmth (as opposed to acceptance) and a child's negative cognitive style was also found to be significant in Alloy et al. (2001) (see Table 1). Rose et al. (1994) studied rigid, overcontrolling, and perfectionist parents in combination with sexual abuse in a sample of depressed inpatients; the results revealing that together with sexual abuse these family variables predicted large proportions of the variance in dysfunctional attitudes and inferential style (see Table 1). These researchers emphasized the importance of negative parent-child dynamics in predicting negative cognitive style.

These studies indicate that there is a clear relationship between negative parenting behaviors and the child's development of a negative cognitive style. Because PM incorporates each of these aspects of negative parenting along with many others into a single construct, it is no surprise that researchers have honed in on emotional abuse as the greatest predictor of negative cognitive style and consequently the development of depression or symptoms of depression.

Cognitive Style as a Mediator between Psychological Maltreatment and Depression

Existing Research

Despite the prevalence of PM, its apparent role in the development of negative cognitive style, and evidence that negative cognitive style is related to depression, the relationship between these three factors has not been researched extensively. Only a few studies assess the mediating role of cognitive style in the relationship between parental PM and Depression.

Gibb et al. (2001) conducted a 2.5 year prospective study with high risk and low risk undergraduate students as part of the Temple-Wisconsin Cognitive Vulnerability to Depression Project (see Table 1). The researchers evaluated cognitive risk (high=negative cognitive style, low=positive cognitive style) as a mediator between childhood PM and depression. Two forms of depression were assessed: hopelessness depression (HD) in accordance with the Hopelessness Theory and non-endogenous major depression (NE-MD; without genetic etiology) in accordance with Beck's theory. As proposed by the Hopelessness Theory, cognitive risk was found to fully mediate the relationship between parental PM in childhood and HD. However, Beck's theory was not supported. Full mediation of the relationship between parental PM in childhood and NE-MD by cognitive style disappeared when HD was controlled, suggesting that HD was the

more significant outcome. In addition, hopelessness partially mediated between cognitive risk and HD.

Independent from the CVD Project, Gibb and his colleagues (Gibb et al., 2003a; Gibb et al., 2003b; Gibb et al., 2006; Gibb & Alloy, 2006) continued to investigate the hypothesis that cognitive style mediated the relationship between PM and depression. Gibb et al. (2003a) and Gibb et al. (2003b) utilized the same sample of undergraduate participants. Gibb et al. (2003a) used a subset of this sample who endorsed experiencing PM to test the mediation hypothesis and found that maltreatment specific inferences (a measure created for this study of attributions specifically for the PM items endorsed) partially mediated the relationship between PM and inferential style and hopelessness partially mediated the relationship between inferential style and HD (see Table 1). Due to the cross-sectional nature of this study, the directionality of the relationships is unknown. Gibb et al. (2003b) explored whether or not the relationship between childhood PM, dysfunctional attitudes, and depression was influenced by the participants' global view of their experiences as maltreatment or not (see Table 1). The results did not differ based on if the participants labeled themselves as having been emotionally maltreated. Gibb et al. (2003b) concluded that one's global perception of their maltreatment experiences was not a significant factor in determining their current attitudes or levels of depression.

Gibb and his colleagues also conducted two prospective studies using the same sample, this time exploring the relationships between PM, attributional style, and depression with fourth and fifth grade children over a 6 month period. Gibb et al. (2006) included parent measures of attributional style and major life events in addition to those completed by the child while Gibb and Alloy (2006) investigated the child's attributional style as a mediator between PM and depression (see Table 1). In these studies, verbal victimization was defined as aggressive verbal

acts committed by parents, peers, other family members and other adults measured by a 4 item questionnaire focusing on only spurning, one of the six subtypes of PM. The results of Gibb et al. (2006) indicated that experiencing verbal victimization at baseline uniquely predicted negative changes in attributional style, while controlling for the effects of other variables. However, depression and hopelessness at baseline also each uniquely predicted increasing negativity of attributional style, suggesting a possible alternative direction for this relationship. In this study, parents simultaneously completed questionnaires about their children's attributional styles as well as about events that had occurred in their family during the 6 month follow-up period. However, neither the parents' attributional style ratings at Time 1 nor their ratings of negative events over the 6 month period were found to predict changes in their children's attributional styles. With the same sample of children, Gibb and Alloy (2006) examined the mediation hypothesis and found that children's ratings of their own initial attribution styles at Time 1 mediated the relationship between verbal victimization that occurred 6 months prior to the study period and levels of depression at Time 2.

Additionally, Kaysen et al. (2005) assessed the mediational role of maladaptive cognitions in the relationship between recalled emotional abuse and depression (see Table 1). These researchers, adhering to the diathesis-stress model, utilized a recently traumatized sample as a way to ensure the participants' negative schemas were activated. Adults were recruited through hospitals, police, and victim service agencies as part of a larger study on recovery from assault. Reports of past physical and sexual abuse were also measured, but the individual effects of each type of maltreatment were analyzed separately. Cognitive style was found to mediate the relationship between sexual abuse and depression and between physical abuse and depression, but not between PM and depression. In this study, PM was not found to be uniquely related to

cognitive style or depression. The authors hypothesize that the high rate of co-occurring physical or sexual abuse with PM in this sample may have made it difficult to elucidate the unique role of PM.

Cukor and McGinn (2006) and Wright et al. (2009), using samples of college undergraduates and adults, respectively, also examined a mediation hypothesis, looking at Young's early maladaptive schemas (EMS) as the mediator between abuse and depression (see Table 1). While EMS is a distinct construct from negative cognitive style, they both reflect an individual's way of thinking and thus the effects of EMS on depression may be useful in understanding the relationship between NCS and depression. Of note, Cukor and McGinn (2006) looked at all forms of abuse together and Wright et al.'s (2009) outcome variable was a combination of depression and anxiety because no differences existed when analyzed separately. Cukor and McGinn (2006) found the Disconnection/Rejection domain (lacks expectation of safety, nurturance, acceptance) to mediate between general abuse history and current depression. Wright et al. (2009) identified three specific maladaptive schemas to mediate the relationship between each childhood emotional abuse and neglect and symptoms of depression: vulnerability to harm (belief in the inability to prevent catastrophes), self-sacrifice (excessive focus on others at expense of own needs), and defectiveness/shame (perception of deficits that make one unlovable). While maladaptive schemas and negative cognitive style are distinct constructs, they both have demonstrated mediating roles in the relationship between PM and depression.

Gaps in the Research

While few studies have specifically looked at cognitive style as a mediator between PM and depression, several studies have investigated these three variables. These studies, however, exhibit at least one of the following limitations: (1) PM is not isolated well enough from physical

or sexual abuse (Cerezo & Frias, 1994; Cukor & McGinn, 2006; Kaysen et al., 2005; Rose et al., 1994), (2) an alternative model is evaluated (Abela, 2001; Gibb et al., 2006), (3) measurement of PM is inconsistent across studies and most measures use only a few items of only one or two subtypes of PM (Abela, 2001; Cerezo & Frias, 1994; Cukor & McGinn, 2006; Gibb et al., 2001; Gibb, Abramson, & Alloy, 2004; Gibb et al., 2006; Kim & Cicchetti, 2006; Liu et al., 2009; Mezulis et al., 2006; Randolph & Dykman, 1998; Rose et al., 2004), or (4) recall of childhood experiences by adult participants is relied on to measure PM rather than assessment of children's current experiences (Cukor & McGinn, 2006; Gibb et al., 2003b).

Combining forms of abuse. In a study of depressed inpatients, Rose et al. (1994) found that participants were significantly more likely to have a negative cognitive style if they had a history of emotional or sexual abuse than those without abuse histories. In this study, emotional abuse was defined as self-reports of negative family control, including harsh and rigid discipline, perfectionist standards, overprotection, and isolating the child from social contact (Rose et al., 1994). Cerezo and Frias (1994) compared attributional styles and depressive symptomology in small samples of children with at least a 2 year history of emotional or physical abuse (N=19) with non-maltreated children (N=26). The results indicated that currently maltreated children have more negative attributional styles and more symptoms of depression than the control group of non-abused children who attended the same school (Cerezo & Frias, 1994).

Additionally, all three types of abuse were combined in the more recent research of Cukor and McGinn (2006). These researchers looked specifically at the mediating role of Young's early maladaptive schemas in the relationship between a history of child maltreatment and depression in adult women (see Table 1). Their findings, consistent with Rose et al. (1994) and Cerezo and Frias (1994), revealed that participants with a history of any form of abuse

demonstrated significantly more early maladaptive schemas and significantly more depression than those who did not report childhood maltreatment (Cukor & McGinn, 2006). The authors explain the mediating role of cognitions: "...women with a history of abuse learn to believe that they are defective, experience shame about themselves, find it hard to trust others, feel emotionally deprived, abandoned, and isolated, and that these cognitive beliefs may ultimately lead to depression" (Cukor & McGinn, 2006, p. 30).

The results of these studies are convincing, showing cognitive style as a mediator between childhood maltreatment and depression. However, by not isolating PM, there is no way to understand the unique relationship between PM, negative cognitive style, and depression.

Alternative models.

Cognitive style as a moderator. An alternative model explored by Abela (2001) suggested that the combination of children's cognitive styles and the occurrence of negative events would together impact levels of depression. Abela (2001) prospectively evaluated depression levels in a community sample of third and seventh graders following a negative event (e.g., recent illness) and compared the changes over 8 weeks in depressive symptoms between children with negative cognitive style and those with positive cognitive style. In this study, Abela (2001) broke cognitive style down into three components: (a) attributional style as it is classically measured with the CASQ (pick one of two explanations for events such as "A person steals money from you"; Seligman et al., 1984); (b) inferential style about consequences (e.g., "This event will cause many terrible things to happen to me"); (c) inferential style about the self (e.g., "This makes me feel very bad about myself"), which are two scales that comprise the CCSQ (Abela, 1997). His findings, although varied by age and gender (see Table 1), overall indicated that children with any of the three types of depressogenic cognitive styles in addition to

experiencing negative events over the study period had significantly greater increases in depression than children with positive cognitive styles after encountering a negative event (Abela, 2001). However, Abela's (2001) model does not consider the developmental origins of cognitive style, such as psychological abuse.

Depression as a predictor of cognitive style. Gibb et al. (2006) proposed two potential pathways of how children develop cognitive vulnerability to depression: via depression or verbal victimization. The idea that depression may influence the development of negative cognitive style is referred to as the "scar hypothesis" (Lewinsohn, Steinmetz, Larson, & Franklin, 1981). The scar hypothesis suggests that depression may cause one to develop a permanent negative cognitive style that remains even after symptoms of depression have remitted (Lewinsohn et al., 1981). Over six-months, Gibb et al. (2006) prospectively investigated the influence of depression and verbal victimization on changes in negative cognitive style with over 400 fourth and fifth graders. Consistent with the scar hypothesis, elevated levels of depression at baseline uniquely predicted negative changes in attributional style (Gibb et al., 2006). While verbal victimization at baseline was also found to be a unique predictor of depression, Gibb et al. (2006) presents evidence that depression might not only be an outcome of negative cognitive style, but also a precipitant.

These studies on alternative models about the relationship between PM, negative cognitive style, and depression provide evidence that a relationship exists between these three variables, but does not specifically look at cognitive style as the mediator.

Measurement of psychological maltreatment. A reoccurring issue in research is the use of various instruments to measure a construct. Three central issues arise in the literature reviewed: (1) that definitions of PM vary among measures, (2) unspecified perpetrators leave the

results open to interpretation, and (3) the accuracy of the maltreatment report may be affected by the credibility of the informant. Among the studies cited in this literature review, numerous assessments have been used to identify PM. A few studies use measures of parenting practices (Parental Bonding Instrument, Parker et al., 1979; Modified Socially-Prescribed Perfectionism Scale, Hewitt & Flett, 1991; Critical Parenting Inventory, Randolph & Dykman, 1996; Child-Rearing Practices Report, Block, 1965; Anger Expression Out Subscale of the State-Trait Anger Expression Inventory, Spielberger, 1988), while some use general measures about negative life experiences (Family Control Subscale of the Developmental Milestones Questionnaire, Rose et al., 1994; Adolescent Perceived Events Scale, Compas, Davis, Forsythe, & Wagner, 1987; Children's Life Events Scale, Coddington, 1972 & Kanner, Feldman, Weinberger, & Ford, 1987), and others use specific maltreatment measures (Emotional Maltreatment-Parent Subscale of the Life Experiences Questionnaire, Gibb et al., 2001; Maltreatment Classification System, Barnett et al., 1993; maltreatment items from the Life Events Questionnaire, Alloy & Abramson, 1999, Alloy & Clements, 1992, and Needles & Abramson, 1990; Stress Interview Rating Form, Alloy & Abramson, 1999; Childhood Trauma Questionnaire, Bernstein et al., 1994). Furthermore, some studies use observational data to (Mezulis et al., 2006), case histories (Cerezo & Frias, 1994), or structured interviews (Koestner et al., 1991) to operationally define maltreatment.

The second issue with the instruments used is that several do not specify who the perpetrator of the maltreatment is, which leads to vague results and insufficient conclusions. Liu et al. (2009) uses the emotional maltreatment items from the Life Events Questionnaire (Alloy & Abramson, 1999; Alloy & Clements, 1992; Needles & Abramson, 1990) that assess maltreatment from parents or any authority figure together. The Childhood Trauma

Questionnaire (Bernstein et al., 1994), used in Cukor and McGinn (2006) and Gibb et al. (2006), asks generally about “people in my family” and Gibb et al. (2006) specifically states the measure was adapted to “not [limit] the assessment of verbal victimization to that committed by parents” (p. 429). In addition, this variable *verbal victimization* is measured by only four items, all from one of the six subtypes of PM: spurning. The third issue is only evident in a few of the studies reviewed. While most of the measures are administered to the child or victim of maltreatment, some studies measure maltreatment by parent report of their own behaviors towards their children. Mezulis et al. (2006) assessed negative parent feedback by three measures given as self-report measures to the parents. Similarly, Koestner et al. (1991) interviewed mothers to assess their attitudes, feelings, and behaviors related to childbearing.

It is important that studies that claim to measure PM are measuring it according to a widely agreed upon definition. The various instruments used, all claiming to measure the same construct, are not necessarily measuring the same exact concept. Measurement consistency is necessary in order to adequately compare these studies.

Retrospective accounts of psychological maltreatment. Retrospective accounts of PM are more commonly found in the literature because researchers have easier access to adults. For example, the Cognitive Vulnerability to Depression Project, which accounts for several of the cited studies, used undergraduate participants who attended the universities where the researchers were employed. Rose et al. (1994) relied on depressed adult inpatients to recollect their experiences of sexual and emotional abuse during childhood. Similarly, Cukor and McGinn (2006) asked depressed women, ages 18 to 65, to recall their abuse histories during childhood and adolescence using the Childhood Trauma Questionnaire. Gibb et al. (2003b) compared adults’ recall of childhood experiences of maltreatment to their global belief of

whether or not they were abused. While results of these two assessments were in agreement for sexual abuse victims (i.e., if they reported any sexually abusive behavior they also reported that they had been sexually abused), a relationship was not found to exist between actual experience and perceived global beliefs for physical and emotional abuse victims. This suggests that what an adult recalls about their childhood experiences may be affected by whether or not they perceive themselves to be victims. The results of adult recall assessments thus may be clouded by an altered perspective of the event, whether from years of therapy or simply a matured outlook or not wanting to share information.

While retrospective accounts may be useful in obtaining evidence for a relationship between PM, negative cognitive style, and depression, it does not inform intervention as would research on the current experiences of children. Measuring PM and cognitive style as a mediator between these experiences and depression as it is occurring would be considerably helpful in creating appropriate treatments and interventions. It is important that research on this topic focus on childhood experiences *in* childhood to maximize the utility of researching this topic.

Study Rationale

Research has established a relationship between parental PM and depression, cognitive style and depression, and between aspects of parental PM and cognitive style. However, there has been little research on cognitive style as a mediating variable between parental PM and depression in children and the existing studies do not directly assess this hypothesis or control for physical or sexual abuse (Gibb et al., 2001; Gibb et al., 2003a; Gibb & Alloy, 2006; Kaysen et al., 2005; Wright et al., 2009). To date, only one study of elementary aged children has assessed this hypothesis (Gibb & Alloy, 2006). Gibb and Alloy (2006) found that attributional styles partially mediated the relationship between verbal victimization and changes in depression

over 6 months. While these results support the relationship being examined in the current study, as previously stated, the variable *verbal victimization* only represents one of the six subtypes of PM: spurning (“someone called me things like stupid, lazy, or ugly”; “I thought my parents wished I had never been born”; “someone said hurtful or insulting things to me”; “someone hated me”).

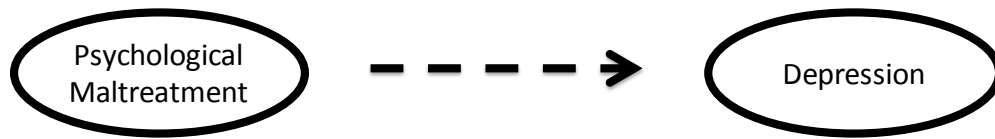
At present, the hypothesis that cognitive style mediates the relationship between PM, as a comprehensive construct, and depression has yet to be explored. To better understand the relationship between childhood PM, cognitive style, and the development of depression, it is necessary to look at and compare the individual effects of each form of abuse, utilize a comprehensive definition of parental PM, and conduct research with children *during* childhood to better understand experiences of childhood maltreatment and provide opportunities for intervention. An in-depth investigation of the mediation hypothesis with children can directly result in intervention strategies to address the negative cognitions and potentially prevent the development of major depression in adulthood.

Research Hypotheses and Plan for Analysis

Based on the PM and cognitive vulnerability to depression literature, the following specific hypotheses will be tested. Descriptions of all the measures utilized in the present study are provided in detail in the method section.

Hypothesis 1. Adolescents who report experiencing greater levels of PM, as measured by the Comprehensive Assessment of Psychological Maltreatment – Child Version (CAPM-CV; Brassard et al., 2003-2011), will have significantly higher scores on the Depression Subscale of the Behavior Assessment System for Children – Second Edition – Self Report Adolescent (BASC-2-SRA; Reynolds & Kamphaus, 2004) than adolescents who do not report PM, while

controlling for physical and sexual abuse. In other words, PM will have a significant and unique relationship with depression, controlling for physical and sexual abuse.

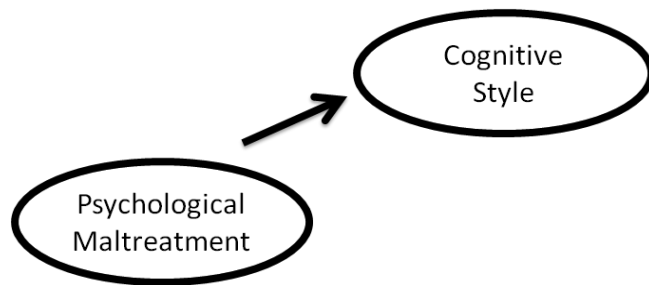


Data analysis. Linear regression will be run to determine if a significant and predictive relationship exists between PM and depression.

Rationale for hypothesis 1. Depression has been found to be a common consequence of PM in empirical research studies that isolate PM from other forms of abuse (Kim & Cicchetti, 2006; Shaffer et al., 2009). The theoretical argument for this relationship is that PM involves sending specific and direct messages to a child that leave little room for interpretation (Rose & Abramson, 1992). With PM, a child receives the direct message that they are worthless, a central characteristic of depression. In contrast, physical and sexual abuse victims, in an effort to protect themselves, can make a more benign, external attribution for the abuse. In accordance with previous research and PM theory, the proposed direction of the relationship is that PM precedes symptoms of depression. While Gibb et al. (2006) and Gibb & Alloy (2006) explored the scar hypothesis (Lewinsohn et al., 1981) with a measure of the subtype spurning, PM as a comprehensive construct as assessed by the CAPM-CV is unlikely to theoretically support the scar hypothesis (e.g., a child's depression would not theoretically cause a parent to engage in exploiting/corrupting behaviors).

Hypothesis 2. Adolescents who report experiencing greater levels of PM, as measured by the CAPM-CV (Brassard et al., 2003-2011), will report higher scores (more negative cognitive styles) on the Children's Cognitive Style Questionnaire (CCSQ; Abela, 1997), whereas adolescents without significant PM will report lower scores (more positive cognitive styles),

while controlling for physical and sexual abuse. In other words, there is a significant and unique relationship between PM and cognitive style, controlling for physical and sexual abuse.

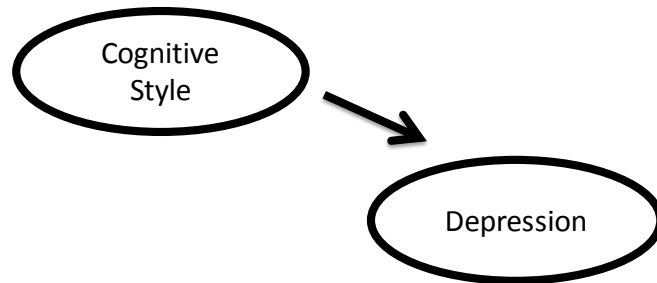


Data analysis. Linear regression will be run to determine if a significant and predictive relationship exists between PM and cognitive style.

Rationale for hypothesis 2. There is evidence in the literature that elements of PM, such as negative parental feedback, excessive restrictiveness, perfectionistic expectations, and lack of warmth, are associated with negative cognitive style (Alloy et al., 2001; Gibb et al., 2006; Koestner et al., 1991; Mezulis et al., 2006; Randolph & Dykman, 1998; Rose et al., 1994). While PM as a comprehensive construct has not been studied in relation to the development of negative cognitive style, theoretical models of cognitive vulnerability to depression (Abramson et al., 1989; Beck, 1967; Young, 1990) allude to child maltreatment as a likely origin of negative cognitive style (Alloy, 2001; Cole et al, 2008). Rose and Abramson (1992) proposed that when the hopelessness that results from ongoing maltreatment in childhood generalizes to all situations, a negative cognitive style is established. While previous research has only focused on elements of PM, this study predicts that PM as a comprehensive construct will have a significant relationship to negative cognitive style.

Hypothesis 3. Adolescents who report having a more negative cognitive style, as measured by higher (more negative) scores on the CCSQ (Abela, 1997) will have significantly higher scores on the Depression subscale of the BASC-2-SRA (Reynolds & Kamphaus, 2004)

than adolescents with lower (more positive) scores on the CCSQ. In other words, there is a significant and unique relationship between cognitive style and depression, controlling for PM, physical, and sexual abuse.

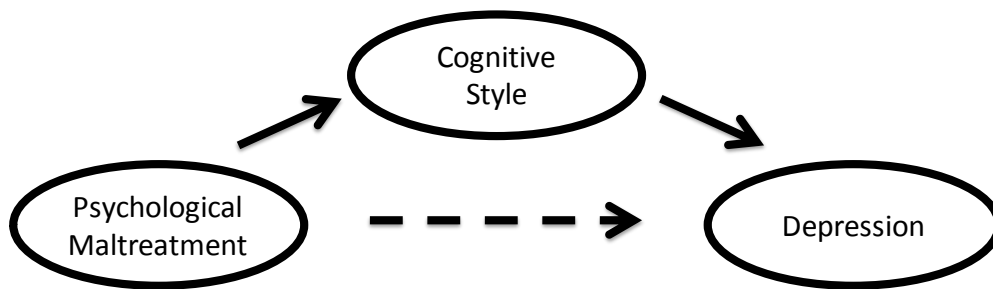


Data analysis. Linear regressions will be run to determine if a significant and predictive relationship exists between cognitive style and depression.

Rationale for hypothesis 3. A body of research on cognitive vulnerability to depression, including Alloy & Abramson's (1999) CVD Project with numerous follow-up studies, provides evidence that a negative cognitive style is a risk factor for depression. The existing studies primarily focus on young adult and adult samples; only Gibb & Alloy (2006) and Gibb et al. (2006) have investigated the cognitive vulnerability to depression hypothesis with children or adolescents. This study aims to explore if the cognitive vulnerability to depression hypothesis is applicable in adolescents, at the point in time where cognitive style stabilizes and symptoms of depression typically surface.

Hypothesis 4. Cognitive style mediates the relationship between PM and depression. It is proposed that PM (CAPM-CV; Brassard et al., 2003-2011) controlling for physical and sexual abuse, influences the development of DEP (Depression Subscale, BASC-2-SRA; Reynolds & Kamphaus, 2004) through the development of negative CS (CCSQ; Abela, 1997). It is predicted that the relationship between PM and DEP will be reduced or eliminated when the mediating variable CS is controlled. While both full and partial mediation are being tested, partial

mediation is expected to occur based on previous research and theoretical foundations about PM and DEP.



Data analysis. Baron and Kenny’s (1986) recommended methodology will be used to assess the mediation hypothesis. The coefficients and standard errors for each relationship will be identified from the linear regression results for Hypotheses 1-3. To assess Hypothesis 4, a multiple regression will be conducted with both PM and CS as independent variables and DEP as the dependent variable.

Rationale for hypothesis 4. Several studies have approximated the proposed mediation model, but used young adult or adult participants, insufficient measures of PM, or did not control for other forms of abuse (Alloy et al., 2001; Gibb et al., 2001; Gibb et al., 2003a; Gibb & Alloy, 2006; Kaysen et al., 2005; Wright et al., 2009). Based on a comprehensive review of the literature, the individual relationships assessed in Hypotheses 1-3 are expected to be significant. It is the intention of this study to understand how strongly cognitive style influences the relationship between PM and depressive symptoms so that prevention and intervention efforts can be specifically directed to children with these risk factors prior to the onset of depressive symptoms.

Chapter II

Method

Procedure

Data were collected in May 2010 at a private Jesuit high school in Manhattan, New York. According to the Code of Federal Regulation (Section 46.408, Subpart C), parental consent can be waived “if the IRB determines that a research protocol is designed for conditions or for a subject population for which parental or guardian permission is not a reasonable requirement to protect the subjects (for example, neglected or abused children)” (Public Welfare Protection of Human Subjects, 2005). As such, the Teachers College, Columbia University Institutional Review Board (IRB) waived the need for parental consent. However, the institution where data was being collected nevertheless requested that parents be informed about the project being conducted. To ensure that parents/guardians were well-informed, passive consent letters were sent to all parents/guardians at least two weeks prior to data collection describing the project, indicating that data would be collected anonymously and results would only be presented in aggregate form, and requesting notification from parents/guardians who did not want their adolescent to participate.

Between one and two weeks prior to the commencement of data collection, guidance counselors at the school spoke with their ninth-grade students and the entire faculty about the study. Students were specifically informed about the content and voluntary and anonymous nature of the study, and the time commitment for completing the questionnaire. The faculty was informed of the study including when the Teachers College research team would be present in the school and the nature of the study in which their students might be participating.

Data collection occurred over six school days (May 17-21, 2010 and May 24, 2010). These days were selected by the institution as most convenient. Each participant completed a total of 30 to 40 minutes of data collection during their normally scheduled guidance meeting in the classroom where the group regularly met. There were 42 groups in total. The size of the guidance groups ranged from 4 to 15 students; each student worked at his own desk. Those students who opted out of the questionnaire completed homework or read quietly at their desks.

A trained research assistant from Teachers College was assigned to each guidance group and was responsible for welcoming the participants, reading the assent script, distributing and collecting the questionnaires, answering questions, and returning completed questionnaires to a member of the research team. Research assistants were instructed to answer questions by summarizing or re-reading the relevant portion of their script; they were not permitted to provide additional instructions. A psychologist (a licensed psychologist, a certified school psychologist, or a developmental psychologist with 15+ years of work with maltreated children) was on-site during each day of data collection to support students distressed by questionnaire content. Additionally, 5 guidance counselors were present and available to speak with participants if necessary. No student requested support.

Participants' inclusion in this sample was based on active assent procedures. Participants were instructed that they could opt out of the study at any time during the project. Participants completed the questionnaire individually as they all had adequate reading skills, a requirement for admittance to this school. Students were not remunerated for their participation at the request of the school's administration.

Participants

All 266 ninth-grade students were invited to be participants in one of two randomly assigned questionnaires. Approximately 46 youth chose the alternative activity or were not in attendance that day and 220 participated. The response rate was approximately 83 percent. Two versions of this questionnaire, for two separate research studies, were randomly administered. This study's questionnaire was completed by 169 ninth-grade students.

Aggregated parent education and income data for all ninth-grade students were obtained from the school's administrative records. The majority of participants' parents graduated from high school and obtained at least a Bachelor's degree; many parents also held graduate degrees. Parents' income ranged from below \$15,000 to over \$125,000; approximately 50 percent of fathers earned \$80,000 or more per year and approximately 50 percent of mothers earned \$45,000 or more per year. The school's tuition is approximately \$12,000 per year and approximately 30 percent of the students receive a financial aid grant which averages approximately \$5,000.

Measures

Psychological maltreatment (PM). The Comprehensive Assessment of Psychological Maltreatment – Child Version (CAPM-CV) (Brassard et al., 2003-2011) is a 34 item youth self-report of caregiver PM. Written on a 5th grade reading level, it asks youth ages 11 to 18 about their experience of psychologically maltreating behavior by each parent separately. The CAPM-CV items include positive and negative behaviors such as “Helps me when I need help” and “Makes plans that involve me without asking my opinion,” so that a full range of parenting behavior can be sampled. Each statement is rated on a 4-point Likert scale (1=Never; 2-

Sometimes; 3=Often; 4=Almost Always) regarding the frequency with which each parent/caregiver engaged in the given behavior in the last year.

Construct validity is based on a broad theoretical framework of PM developed through 30 years of research (e.g., Brassard et al., 1987; Hart & Brassard, 1987) and in the empirically developed definitions of PM (Brassard et al., 1993; Hart & Brassard, 1991) which were incorporated into the APSAC Guidelines (APSAC, 1995) and many other definitions of PM. Content validity is based on the fact that items were constructed (a) to correspond to the 6 subtypes of PM put forth in the APSAC guidelines (APSAC, 1995) and expanded in Rivelis (2008) and Brassard & Donovan (2006) with an extensive review of all definitions, all extant measures and all research on the effects/relationships between PM and negative child developmental outcomes; (b) a thorough review of 66 child maltreatment measures from 1982-2003 obtained from an exhaustive search of databases and the authors' extensive archive; (c) extensive pilot testing and revision to ensure clarity/understandability of items and instructions for children and youth of differing intellectual abilities and ethnicities living in the United States ages 11-18 as well as acceptability of the items to examinees and initial scale reliability and validity; and (d) a review by 9 international experts in PM. A recent review of the literature by the authors confirmed that the CAPM-CV is the only existing comprehensive self-report measure of current PM for children and youth.

Construct validity was also assessed by conducting two clinical trials with the CAPM-CV using a clinical and a community sample to ascertain reliability and the degree to which it assessed a unified construct of PM using Item Response Theory (IRT, see Embretson & Reise, 2000 for a detailed review of this method). All items have a discrimination score above one for mothers and for fathers in both clinical and community samples. All six subtypes of PM are well

represented including 7 items of spurning, 9 of terrorizing, 7 of exploiting and corrupting, 5 of denying emotional responsiveness, 4 of isolating, and 2 of mental health, medical and educational neglect. In addition to a latent score for each item, a standard deviation for each estimated score was also generated. IRT scores have a mean of 0 and a standard deviation of 1. The advantage of IRT scoring is that it weights each item by the item discrimination parameter so that the more discriminative items – those that best assess the underlying latent construct of PM – are given more weight.

A criterion based definition of PM on the CAPM-CV was created by referencing each item on the scale to (a) the Modified Maltreatment Classification System (English and LONGSCAN Investigators, 1997) definitions of emotional mistreatment, a well validated and reliable measure of coding child protective service records; (b) the U.S. National Incidence Study – III (Sedlak & Broadhurst, 1996) definitions of emotional abuse and neglect used to collect periodic incidence data on child maltreatment known to mandated reporters in a sample of counties representative of the U.S. population; and (c) reviews of all extant studies on definitions, measures, and outcomes (see Brassard & Donovan, 2006; Hart et al., 1998; Binggeli et al., 2001; Hart et al., 2002) in order to determine at what level each item would be considered PM. To do this, the four authors and two doctoral students independently decided at what level (sometimes, often, almost always) each item should be considered PM and then met and discussed each item until consensus or a clear majority agreed on a level. For these 34 most effective items, IRT item level data was used to empirically sharpen decisions about the level at which an item on a given parental behavior establishes maltreatment. Thus, each item is dichotomized into PM or no PM depending on the level at which such parental behavior crosses a threshold from poor parenting into PM. For example, “Is impatient or angry when I question

something he/she says “must be rated “always” to be considered PM, but “Cannot take care of me because he/she is drunk and/or using drugs” is considered PM if rated” sometimes,” “often,” or “almost always.”

Results of the validation study using the community sample showed that the validation scores (a sum of the number of items coded PM using the dichotomized scoring for each item) were highly skewed as would be expected, while the IRT scores were normally distributed. Cronbach's alpha for the PM scales of the mother and father were .92 and .91, respectively. Correlations of validation and IRT scores show a high and significant level of association, above .75, $p < 0.001$. Correlations between mother and father PM scores were about .50 for validation and .71 for IRT scores, $p < 0.00$. Scatter plot comparing the validation and IRT scores showed that there is a quadratic (nonlinear) relationship between the two measures. Based on the distribution of scores, validation scores of 0, 1 and 2, and above 3 were classified as “Low Risk,” “Medium Risk,” and “High Risk,” respectively. Each category represented about one-third of the sample. IRT scores above 1 may be classified as “High Risk,” based on comparison with validation scores. IRT scores can be dichotomized to reflect respondents with “High Risk” if their IRT scores are above 1.

Physical abuse (PA). The Physical Assault (Corporal Punishment) scale of the Parent-Child Conflict Tactics Scale – Parent-Child Version (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) was used to assess physical abuse. The Physical Assault scale assesses the frequency with which the child has been spanked, hit on the bottom with an object, slapped, pinched, or shaken in the last year. Participants rated the frequency with which their mother and/or father engaged in a given behavior. This abbreviated version of the CTSPC Physical Assault scale was used because of school concerns about asking about more severe physical

abuse and because children are rarely subjected to more severe forms of physical abuse if they are not also subjected to these minor forms. Responses were dichotomized into *This has never happened or has not happened in the past year* and *This happened at least once in the past year* as suggested by the CTS manual (Straus, 1995). An overall physical abuse score was calculated with higher scores indicating more frequent physical maltreatment. Total raw scores for each parent could range from 0 (did not endorse any item) to 5 (endorsed all items). Internal consistency for the overall CTSPC Physical Assault scale is reported to be .55 (Straus et al., 1998).

Numerous studies have found adequate validity for the Conflict Tactics Scale. Concurrent validity is evident by the agreement found between reports of physical abuse by different members of the same family, such as parent and child reports (Straus & Hamby, 1997). Additionally, many investigators have found evidence for construct validity through findings consistent with empirical evidence on the impact of physical abuse on internalizing (Campbell, Kuh, Belknap, & Templin, 1997) and externalizing behaviors (Miller, Downs, & Gondoli, 1989; Vissing, Straus, Gelles, & Harrop, 1991) as well as relationships between scores on the Conflict Tactics Scale and the Child Abuse Potential Inventory (Caliso & Milner, 1992).

Sexual abuse (SA). A single item from the Sexual Abuse scale of the Conflict Tactics Scale Parent-Child Version (CTSPC; Straus et al., 1998) was included in the measure which asked, “Were you personally ever touched in a sexual way by an adult or older child, when you did not want to be touched that way, or were you ever forced to touch an adult or older child in a sexual way – including anyone who was a member of your family, or anyone outside your family.” Responses were dichotomized into *Never happened* and *Happened at least once*.

Cognitive style (CS). The Children's Cognitive Style Questionnaire (CCSQ; Abela, 1997) was used to assess cognitive style. The CCSQ is a two-part questionnaire. Each part contains 12 items, each of which is a hypothetical negative event involving the child. Respondents are asked to choose the response that would best describe the way they would think given the hypothetical situation. Part one, CCSQ-Consequences, assesses the tendency to catastrophize the consequences of negative events. Part two, CCSQ-Self, assesses the tendency to view oneself as flawed following negative events. Scores could range from 0 to 60; higher scores indicated more depressogenic inferential styles. Abela (2001) found CCSQ subscale scores to be fairly consistent over a 7-week interval in third (CCSQ-C: $r = .41$, $p < .001$; CCSQ-S: $r = .31$, $p < .001$) and seventh-graders (CCSQ-C: $r = .46$; CCSQ-S: $r = .63$, $p < .001$). Cronbach's alphas for the subscales ranged from .64 to .81 across administrations indicating moderate internal consistency. Abela and Payne (2003) found good internal consistency with a Cronbach's alpha of .81 for the CCSQ-Consequences subscale and a Cronbach's alpha of .78 for the CCSQ-Self subscale. Regarding validity, Abela (2001) found that CCSQ subscale scores interacted with negative events as measured by The Children's Life Events Scale (CLES; Coddington, 1972; Kanner et al., 1987) to predict increases in depression as measured by the Child Depression Inventory (CDI; Kovacs, 1981). In addition, Abela & Payne (2003) and Abela & McGirr (2007) found higher levels of depression (CDI; Kovacs, 1981) to be associated with more depressogenic inferential styles about consequences and the self in children. According to instructions provided by Abela's lab (D. Sheshko, personal communication, July 27, 2011), participants with scores 1.5 standard deviations above the mean were classified as having a negative cognitive style.

Depression (DEP). The Depression Subscale from the Behavior Assessment System for Children – Second Edition – Self-Report Adolescent (BASC-2-SRA; Reynolds & Kamphaus, 2004) was used to examine self-reported depression. Depression raw scores were summed and transformed into T-scores as indicated by the BASC-2 manual (Reynolds & Kamphaus, 2004), with higher scores signifying greater reports of depression. The Depression Subscale includes 12 items and has a reported alpha coefficient of .88 (Reynolds & Kamphaus, 2004). Validity is evidenced by high correlations with the Anxious/Depressed ($r = .67$) and Withdrawn Depressed ($r = .72$) scales from the ASEBA Youth Self-Report as well as the Children’s Depression Inventory ($r = .69$) (Reynolds & Kamphaus, 2004). The Depression Subscale of the BASC-2 was selected over alternative measures, such as the ASEBA, because it had the fewest items with the best psychometric characteristics and produced a single depression score. In addition, the specific questions on the Depression Subscale of the BASC-2 best aligned with the interests of the participating school.

Chapter III

Results

Preliminary Data Analysis

Exclusion criteria. The total number of participants who responded to the questionnaire was 169. After an initial analysis of the data, 23 participants were excluded from analysis. Exclusion criteria included: endorsement of sexual abuse (2 participants) and failure to complete at least one entire scale: PM (CAPM-CV), PA (CTSPC), SA (CTSPC), CS (CCSQ), or DEP (BASC-2-SRA) (21 participants). A positive response of *Yes, it happened once* or *Yes, it happened more than once* on the single item of sexual abuse met the criteria for exclusion. The rationale for excluding participants with any history of sexual abuse were 1) the sample size of 2 was too small from which to draw conclusions and 2) participants with histories of sexual abuse, as compared to physical abuse or PM, may be equally or more likely to develop post-traumatic stress disorder (PTSD) than depression (Widom, DuMont & Czaja, 2007). Widom et al. (2007) found that MDD emerged secondary to PTSD for most childhood sexual abuse victims. They also found that among childhood sexual abuse victims, PTSD was the only significant comorbid DSM-III-R disorder with MDD when assessed two decades after the abuse occurred. Due to the significant overlap in MDD and PTSD symptoms (e.g., hopelessness, difficulty concentrating or sleeping, irritability) and the high comorbidity of these disorders in sexually abused children, it was concluded that the two participants who endorsed sexual abuse should be excluded as their responses may distort the results of this study. This study has controlled for SA by excluding participants with histories of SA as well as those who did not answer the question.

Missing data procedures. The set of predictors used for imputations of each variable was determined by expert consultation and based on prior empirical research. Missing data on

the CAPM-CV were addressed through IRT analysis, which uses all of the responses on the scale to predict a total score. Missing data on the Physical Assault scale of the CTSPC and CCSQ were imputed using the *Multiple Imputation by Chained Equations* method (Royston, 2009; Van Buuren, Brand, Groothuis-Oudshoorn, & Rubin, 2006). This procedure involves using the response patterns from all participants on a variable to predict how any individual participant with missing data would respond to the items missing. Missing data on the BASC-2-SRA was imputed using participants' own responses on the Rule Breaking Behavior scale from the Youth Self-Report of the ASEBA (Achenbach & Rescorla, 2001) and the Interpersonal Relations Subscale of the BASC-2 (Reynolds & Kamphaus, 2004), which were measures collected simultaneously for a different study. As previously stated, missing data was not imputed for the sexual abuse item from the CTSPC; these participants were excluded.

Testing the assumptions. This reduced dataset of 146 participants was evaluated to determine if each variable, PM, PA, CS and DEP, was normally distributed using SPSS. First, skewness and kurtosis were analyzed by standardizing the data with z-scores. The closer the z-scores for skewness and kurtosis are to zero, the more normally distributed the data. A z-score between -1 and 1 is considered reasonably normally distributed. The variables PM (skewness = .44, kurtosis = $-.02$), PA (skewness = .74, kurtosis = $-.66$), and CS (skewness = .50, kurtosis = .06) were found to be normally distributed. DEP (skewness = 1.75, kurtosis = 2.77), however, was found to be skewed. A log transformation was conducted on DEP to decrease the skew and minimize the chance that the data was being unduly influenced by a few participants. Although the transformation did not result in z-scores within 1 standard deviation, it significantly improved the distribution of the DEP data (skewness = 1.36, kurtosis = 1.24).

Second, the dataset was evaluated for univariate outliers. The variables were standardized using z-scores and observations were identified as outliers if $z \leq -3.29$ or $z \geq 3.29$, the statistic recommended by Tabachnick and Fidell (2001). Two participants met this criterion: one due to his DEP score ($z = 3.35$) and one due to his CS score ($z = 3.30$). There were no outliers found on the PM and PA scales. The two participants with outlying scores were eliminated from analysis to prevent biasing the mean and inflating the standard deviation of those variables. The skewness and kurtosis of all 4 variables was re-assessed after these two participants were dropped from analysis. These variables remain normally distributed, with their skewness and kurtosis values improving slightly: PM (skewness = .45, kurtosis = -.03), PA (skewness = .72, kurtosis = -.68), CS (skewness = .33, kurtosis = -.39) and DEP (skewness = 1.32, kurtosis = 1.07). The final number of participants to be used in the regression analyses is 144.

Third, each predictor variable was analyzed for curvilinearity as linear relationships must be present to conduct regression analyses. If the relationship between independent and dependent variables is not linear, the results of the regression analysis will underestimate the true relationship (Osborne & Waters, 2002). In order to check for a curvilinear relationship between PM and DEP, controlling for PA, quadratic terms were created and added to the regression model if significant at $p \leq .05$. Neither quadratic term was found to be significant in the model, demonstrating that PM and DEP are not curvilinearly related. In addition, no issues of multicollinearity were identified (Tolerance = .85) between PM and PA. Residual statistics were also checked by inspecting a plot of the two variables, finding no multivariate outliers and no influential outliers (Cook's Distance were all < 1). A scatterplot of the residuals, however, revealed a "fan" shape (see Graph 1), suggesting that the residuals are not evenly distributed,

which may influence significance tests. To address this violation of homoscedasticity, robust standard errors were calculated and significance tests were run. The results revealed that the violation of homoscedasticity did not have an effect on the significance values.

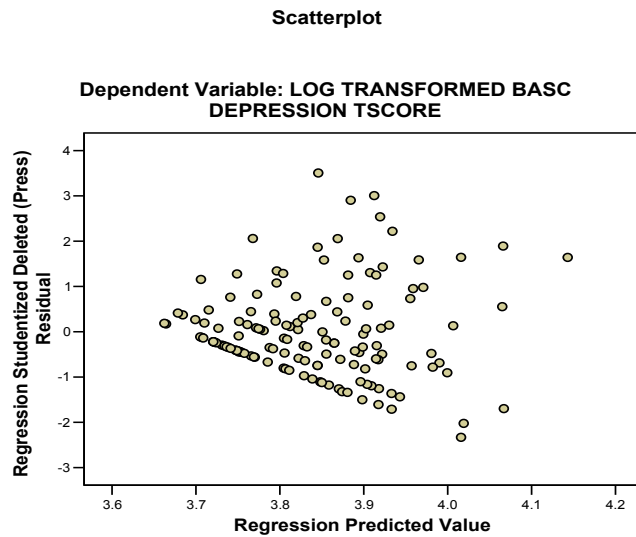


Figure 2. Violation of homoscedasticity

Curvilinearity was assessed between PM and CS, controlling for PA. Again, the squared terms were not found to be significant in the model, demonstrating a significant linear relationship between PM and CS. As previously stated, multicollinearity between PM and PA was not identified as an issue (Tolerance = .85). Analysis of a scatterplot of the residuals depicted an even distribution. However, a graph of the predictions of CS from PM, controlling for PA, indicated that this relationship was not completely linear (see Graph 2). To address this problem, PM was transformed, taking the square root of the PM values. Before calculating the square root, a constant was added to make all values positive since PM IRT values included negative numbers. The regression model was re-run with the squared PM values and the results show a linear relationship to exist between PM and CS. The value of Cook's Distance (< 1) and the graphs of the residuals indicated that there was normal distribution. The graphs before and

after the square root transformation indicate that the transformation was successful in improving the linearity of the relationship between PM and CS.

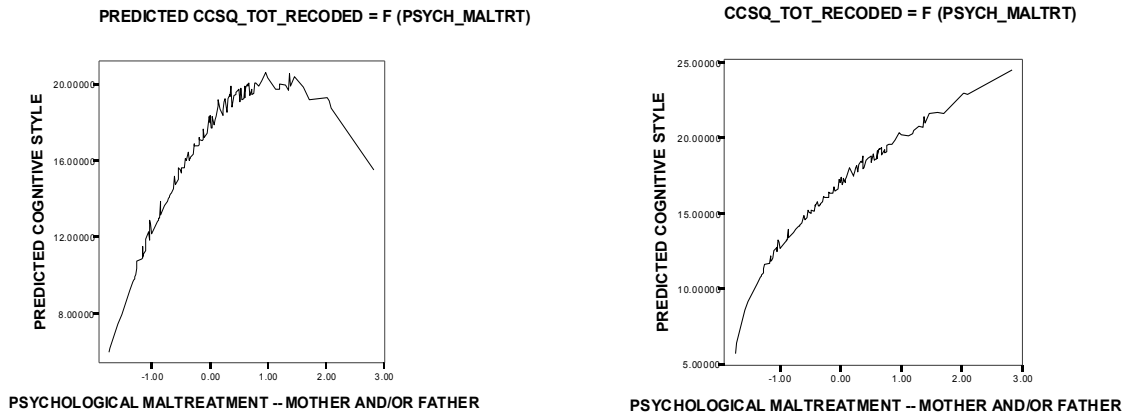


Figure 3. Bivariate plot between PM and CS before and after transformation

Finally, the relationship between CS and DEP was found to be linear. Adding a quadratic CS term to the model was not found to be significant. With only one predictor value in the model, multicollinearity and multivariate outliers did not need to be assessed.

Descriptive Statistics

Demographics. Demographic information for the sample is reported in Table 2. After completing the preliminary data analysis, the sample for this study included 144 ninth-grade students (100% male) with ages ranging from 14 to 16 years ($M = 14.43$, $SD = 0.51$). The participating students were 68 percent White, 14 percent Latino/Hispanic, and the remaining 18 percent identified as either Multiracial, Black or African-American, Asian, Middle Eastern, or None of the Above. The majority of participants, 78 percent, reported that their parents were married and that they lived with both parents. Four participants (2.8%) reported that they were adopted.

Table 2

Distribution of demographic variables

Ethnicity	Frequency	Percent	Living Situation	Frequency	Percent
White	98	68.1	Both parents	112	77.8
Latino/Hispanic	20	13.9	Mother only	22	15.3
Multiracial	12	8.3	Father only	1	0.7
Black/African American	7	4.9	Mother and her friend/stepfather	4	2.8
Asian	4	2.8	Sometimes mother sometimes father	3	2.1
Middle Eastern	2	1.4	Grandparent	1	0.7
None of the Above	1	0.7	Guardian/Foster parent	1	0.7

Age	Frequency	Percent	Parents' Marital Status	Frequency	Percent
14	83	57.6	Married	111	77.1
15	60	41.7	Divorced	15	10.4
16	1	0.7	Never Married	8	5.6
			Separated	7	4.9
			Widowed	2	1.4

Demographic variables were examined as to their relationship with the key variables in the study: PM, PA, CS, and DEP. Due to their distributions, living situation, parents' marital status, and ethnicity were dichotomized into Living with both parents versus Other living situation, Married parents versus Other marital status, and White versus Other ethnicities. Age was dichotomized into 14 versus 15 because 99.3 percent of participants fell into one of these two age groups. On each of these dichotomized demographic variables, independent t-tests were performed and participants were not found to differ significantly in their reports of PM, PA, CS, or DEP (see Table 3). Thus, these demographic variables were eliminated from further consideration.

Table 3

Independent t-tests for demographic variables

	Both Parents	Other Parent Situation	<i>t</i>	<i>df</i>
Psychological Maltreatment	-0.09 (0.89)	0.05 (0.89)	-0.75	142
Physical Abuse	0.67 (0.87)	0.64 (0.97)	0.14	142
Cognitive Style	15.88 (8.31)	17.88 (10.14)	-1.14	142
Depression	47.29 (9.65)	47.25 (7.03)	-1.02	142
	Parents Married	Other Marital Status	<i>t</i>	<i>df</i>
Psychological Maltreatment	-0.06 (0.91)	-0.10 (0.76)	0.24	141
Physical Abuse	0.71 (0.92)	0.44 (0.68)	1.54	141
Cognitive Style	15.92 (8.44)	17.25 (9.62)	-0.76	141
Depression	47.28 (9.65)	46.81 (6.68)	0.26	141
	White	Non-White	<i>t</i>	<i>df</i>
Psychological Maltreatment	-0.02 (0.97)	-0.14 (0.70)	0.88	142
Physical Abuse	0.65 (0.92)	0.67 (0.82)	-0.13	142
Cognitive Style	15.88 (8.73)	17.26 (8.83)	-0.88	142
Depression	47.28 (9.30)	47.30 (8.81)	-0.02	142

* p value is significant at the 0.05 level (2-tailed)

Instruments: PM: CAPM-CV, PA: CTSPC-Physical Assault, CS: CCSQ, DEP: BASC-2-SRA

Note: Higher scores indicate negative CS and greater levels of PM, PA, and DEP

Psychological maltreatment (PM). Psychological maltreatment was assessed using the Comprehensive Assessment of Psychological Maltreatment – Child Version. Consideration was given whether to analyze PM as a single combined variable or as two variables with mother and father assessed individually. The high correlation between PM-mother and PM-father ($r = .70$)

suggested that if one parent was psychologically abusive, the other parent was likely to be as well. Thus, an average of PM-mother and PM-father was taken to create a PM score for all participants unless they only reported on one parent. If a participant had one parent, that parent's score became the total score. The internal consistency of the PM scale for this study is very good (Cronbach's alpha = .82).

Using criteria established by the CAPM-CV authors (IRT score > 1), 10.4 percent of participants reported experiencing significant levels of parental PM. Total scores ranged from -1.73 – 2.82 (M = -0.0565, SD = 0.8879). While population statistics of PM are not readily available due to the inherent measurement difficulties of a highly underreported behavior, estimates of the incidence and prevalence of PM can be calculated from the results of the U.S. Fourth National Incidence Study (NIS-4; Sedlak et al., 2010) and the findings of the Second National Family Violence Survey of 1985 (Vissing et al., 1991). The NIS-4, which represents the lowest estimate of PM due to the strict inclusion criteria, found that out of all maltreatment reported, 27 percent (Harm Standard) to 36 percent (Endangerment Standard) experienced emotional abuse and 25 percent (Harm Standard) to 52 percent (Endangerment Standard) experienced emotional neglect. This data correspond to child population estimates of 0.4 – 2.1 percent. A nationally representative community sample of families with telephones obtained by the Second National Family Violence Survey of 1985 represents the higher end of the prevalence spectrum (Vissing et al., 1991). Overall, this study found two-thirds of parents to exhibit verbal aggression. Using their most strict criteria of 20 incidents per year, 17 percent of parents reported significant PM of their 12 to 17 year old children (Vissing et al., 1991). In the current study, 10 percent of a community sample reported experiencing significant PM, which is considerably higher than findings from the NIS-4 and somewhat lower than findings from the

Second National Family Violence Survey of 1985. While neither of these studies can serve as direct comparisons to the current study, they demonstrate the range of population estimates, which are likely to be heavily influenced by the method of data collection and PM criteria used.

Through an item analysis of the raw data, taking the higher of the mother and father ratings for those who responded to each item, the most common parental PM behaviors occurring to a significant degree were *Invades my privacy* (29% reported often or almost always; subtype: Exploiting/Corrupting), *Says I am stupid, lazy, worthless or calls me other insulting names* (26% reported sometimes, often or almost always; subtype: Spurning), *Expects me to take care of him/her and solve his/her problems like I'm the parent* (22% reported often or almost always; subtype: Exploiting/Corrupting), and *Says he/she will hit or hurt me* (20% reported sometimes, often, or almost always; subtype: Terrorizing). The items least reported (96% of the participants rated *never*) were *Keeps me away from others for a long period of time* (0% reported always) and *Tries to get me to damage the property of others* (0.7% reported often or almost always). The two participants with the highest levels of PM endorsed the following parental behaviors to occur *often* or *almost always*: *Keeps me from going to sleep, relaxing or resting when I need to*, *Fails to help me when I need help*, and *Fails to comfort me when I am upset*.

Physical abuse (PA). Physical abuse was assessed using the Physical Assault (Corporal Punishment) Scale of the Conflict Tactics Scale – Parent Child Version (CTSPC; Straus et al., 1998). PA was dichotomized as *Has not happened in the last year* to *Has happened at least once in the past year* as suggested by the CTS manual (Straus, 1995). Similar to the findings on PM, PA-mother and PA-father were highly correlated ($r = .64$), justifying the use of a combined parent variable: PA. If both parents were rated, the average of the two scores was taken. If one parent was rated, that parent's score became the total score. A transformed variable was also

created to decrease skew. Eighteen percent of the sample reported experiencing at least some form of minor physical assault in the past year. Total scores ranged from 0 – 4.50 ($M = 0.6597$, $SD = 0.8883$). By far, the most common act reported was *Slapped me on the hand, arm or leg* (34%), followed by *Pinched me* (10%) and *Shook me* (10%). In this study, PA was used as a control variable to ensure that any effects identified were not due to PA. The internal consistency of the PA-total scale for this study is good (Cronbach's alpha = .75).

Cognitive style (CS). Cognitive style was assessed using the Children's Cognitive Style Questionnaire (CCSQ; Abela, 1997). A total score was computed for cognitive style based on how participants endorsed feeling when faced with each of 24 hypothetical scenarios. Half of the items asked participants to identify the *consequences* they would anticipate following twelve hypothetical situations according to the scale provided by Abela (D. Sheshko, personal communication, July 27, 2011) of 0 (won't cause other bad things to happen to me) to 3 (will cause many other bad things to happen to me). The second half of the items asked participants to identify how they would anticipate *feeling* if confronted with twelve different hypothetical situations on a scale of 0 (does not make me feel bad about myself) to 2 (makes me feel very bad about myself). The two subscales were combined into a single CS score because analyses with the subscales individually produced similar results when combined. CS total scores ranged from 0 to 40 ($M = 16.3194$, $SD = 8.7535$), which indicates that the majority of participants reported that at least some situations "might cause bad things to happen" to them and/or "make them feel a little badly" about themselves. The internal consistency of the CCSQ for this study is very good (Cronbach's alpha = .87).

No situations were given the highest ratings (will cause many other bad things to happen to me or makes me feel very bad about myself) by any participant. The most common situations

to cause negative thinking (might cause or will cause other bad things to happen) by this sample were failing a test (46%), gaining weight (47%), and getting in a fight with another kid (22%). The most common situations that would cause participants to feel a little bad about themselves were getting a bad grade (28%) and kids saying they don't like him (25%). Negative cognitive style was defined as 1.5 standard deviations above the mean in accordance with instructions from the author's lab (D. Sheshko, personal communication, July 27, 2011). In this sample, 8 percent reported having a negative cognitive style.

Depression (DEP). Depression was assessed using the Depression Subscale of the Behavior Assessment Scales for Children – Second Edition – Self-Report Adolescent (BASC-2-SRA; Reynolds & Kamphaus, 2004). A total score for depression was calculated based on participants' responses to 4 questions on a scale of 0 (never) to 3 (almost always) and 8 true/false questions that were assigned values of 0 (false) or 2 (true). This scoring scheme corresponds to the BASC-2 Handscoring Forms for Adolescents ages 12 to 18. Scores ranged from 0 to 20 ($M = 3.83$, $SD = 4.81$), which represent the lowest and highest possible scores. T-scores were calculated in accordance with the BASC-2 manual; T-scores between 60 and 69 are classified as At Risk and T-scores greater than or equal to 70 are classified as Clinically Significant (Reynolds & Kamphaus, 2004). The internal consistency of the Depression subscale of the BASC-2 for this study is very good (Cronbach's $\alpha = .86$).

In this sample, 12.5 percent (6.9% At Risk, 5.5% Clinically Significant) of participants reported experiencing more symptoms of depression than the normative community comparison group as reported in the BASC-2 manual (Reynolds & Kamphaus, 2004). Total T-scores ranged from 40 – 79 ($M = 47.2847$, $SD = 9.1129$). When compared to national estimates from the National Comorbidity Study – Adolescent Supplement (Merikangas et al., 2010), this study's

rate of depression for boys is considerably higher than the lifetime prevalence of DSM-IV Major Depressive Disorder or Dysthymia of 7.7 percent for 13 to 18 year olds. While at risk or clinically significant symptoms on the BASC-2 do not equate to DSM-IV diagnoses, the discrepancy is notable. The most frequently symptom of depression rated *true* by this sample (34%) was “*I used to be happier.*” Following this single item, *I just don’t care anymore* (15%) and *I don’t seem to do anything right* (15%) were the most frequently endorsed to be *true*. Other notable items include *I feel sad* (48% rated *sometimes*, 6% *often*), *I feel like my life is getting worse and worse* (28% rated *sometimes*, 6% *often* or *almost always*), and *No one understands me* (27% rated *sometimes*, 6% *often* or *almost always*).

Correlations of Primary Variables

Each self-report measure showed satisfactory internal consistency (CAPM-CV $\alpha = .82$, CTSPC-PA $\alpha = .75$, CCSQ $\alpha = .87$; BASC-Depression Subscale $\alpha = .86$). Correlations indicate significant, low to moderate relationships between each of this study’s primary variables, except for the relationship between PA and CS which was non significant (see Table 4). No issues of multicollinearity were identified as the bivariate correlation coefficients between PM, PA, and CS were low enough to justify the simultaneous inclusion of these predictors in a regression equation assessing mediation.

Table 4

Descriptive statistics and correlations of primary variables

Variable	Descriptive Statistics			Correlations		
	Mean	SD	Range	1	2	3
1. Psychological Maltreatment	-0.0565	0.8879	-1.73 – 2.82	--		
2. Physical Abuse	0.6597	0.8883	0 – 4.50	.352**	--	
3. Cognitive Style	16.3194	8.7535	0 – 40.00	.351**	.162	--
4. Depression	47.2847	9.1129	40.00 – 79.00	.538**	.193*	.342**

* Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Instruments: PM: CAPM-CV, PA: CTSPC-Physical Assault, CS: CCSQ, DEP: BASC-2-SRA

Analysis of Hypotheses

Baron and Kenny's (1986) 4 step procedure for assessing mediation and Sobel's test of significance were followed to analyze this study's 4 hypotheses. Robust standard errors were used to correct the statistical significance tests in the mediation models which were compromised by a violation of homoscedasticity. The results were found to be highly consistent, indicating that the violations identified in the preliminary analysis did not ultimately affect the significance of the results. The data reported here are the original SPSS results.

Table 5

Standardized regression coefficients, standard errors, and adjusted R^2 for steps 1 – 3 of Baron and Kenny's (1986) procedure for mediation analysis

Predictor Variables	β	SE β	Adj R^2
Step 1 ^a			.280
Psychological Maltreatment	.536**	.076	
Physical Abuse	.005	.076	
Step 2 ^b			.113
Psychological Maltreatment	.336**	.084	
Physical Abuse	.044	.084	
Step 3 ^a			.302
Psychological Maltreatment	.478**	.079	
Physical Abuse	-0.003	.075	
Cognitive Style	.174*	.075	

^a = Dependent variable: Depression

* $p < .005$

^b = Dependent variable: Cognitive Style

** $p < .001$

Instruments: PM: CAPM-CV, PA: CTSPC-Physical Assault, CS: CCSQ, DEP: BASC-2-SRA

Hypothesis 1. There is a significant relationship between psychological maltreatment (PM; CAPM-CV) and depression (DEP; BASC-2-SRA), while controlling for physical abuse (PA; CTSPC-Physical Assault).

The first step of Baron and Kenny's (1986) procedure involves investigating the significance of the direct relationship between the independent variable and the dependent variable. Linear regression was used to assess the predictive effect of psychological maltreatment on depression, while controlling for physical abuse. The results indicated that PM and PA together significantly predicted depression, $F(2, 141) = 28.742$, $p < .001$, accounting for 28 percent of the variance in depression (adjusted R^2). However, PM by itself was a significant predictor ($\beta = .536$, $p < .001$) and PA was not ($\beta = .005$, $p = .950$). These findings are consistent with previous research.

Hypothesis 2. There is a significant relationship between psychological maltreatment (PM; CAPM-CV) and cognitive style (CS; CCSQ), while controlling for physical abuse (PA; CTSPC-Physical Assault).

The second step of Baron and Kenny's (1986) procedure involves investigating the significance of the direct relationship between the independent variable and the mediating variable. Linear regression was used to assess the predictive effect of psychological maltreatment on cognitive style, while controlling for physical abuse. The results indicated that PM and PA together significantly predicted cognitive style, $F(2, 141) = 10.092, p < .001$, accounting for 11.3 percent of the variance in cognitive style (adjusted R^2). Again, PM by itself was a significant predictor ($\beta = .336, p < .001$) and PA was not ($\beta = .044, p = .604$).

Hypothesis 3. There is a significant relationship between cognitive style (CS; CCSQ) and depression (DEP; BASC-2-SRA), while controlling for psychological maltreatment (PM; CAPM-CV) and physical abuse (PA; CTSPC-Physical Assault).

The third step of Baron and Kenny's (1986) procedure involves investigating the significance of the direct relationship between the mediating variable and the dependent variable with the independent variable in the model. Linear regression was used to assess the predictive effect of cognitive style on depression. The results indicated that CS significantly predicts DEP with PM and PA also in the model, $F(3, 140) = 21.578, p < .001$, accounting for 30.2 percent of the variance in depression (adjusted R^2). CS ($\beta = .174, p = .021$) and PM ($\beta = .478, p < .001$) were each found to be significant predictors of DEP, but PA was not ($\beta = -0.003, p = .969$).

Hypothesis 4. Cognitive style (CS; CCSQ) mediates the relationship between psychological maltreatment (PM; CAPM-CV) and depression (DEP; BASC-2-SRA), while controlling for physical abuse (PA; CTSPC-Physical Assault).

The final step of Baron and Kenny's (1986) procedure assesses the mediation hypothesis. The equations of each hypothesis assessed along with their coefficients and significance values are presented in Table 5. In the first step, the dependent variable, DEP, was regressed on the independent variable, PM (Hypothesis 1). In the second step, the mediator, CS, was regressed on the independent variable, PM (Hypothesis 2). In the third step, the dependent variable, DEP, was regressed on both the independent variable, PM, and the mediator, CS (Hypothesis 3). All equations included PA as a control variable.

According to Baron and Kenny (1986), to establish mediation, the independent variable must significantly affect the dependent variable (Step 1) and the mediator (Step 2), the mediator must continue to significantly affect the dependent variable when the independent variable is added to the model (Step 3), and the effect of the independent variable on the dependent variable, measured by its regression coefficient, must decrease from Step 1 to Step 3. Beta weights can be found in Table 5.

Full mediation was not evident as PM remains a significant predictor when cognitive style is added to the model. Partial mediation was assessed using Sobel's (1982) method to calculate the standard error of the mediator and test the significance of mediated effects (see equation below). These tests demonstrate whether the indirect effect of the independent variable on the dependent variable via the mediator is significant. Using the following formula, cognitive style was found to partially mediate the relationship between psychological maltreatment and depression (z -score = 2.01, $p < .05$). CS was found to mediate 11 percent of the total effect of PM on DEP, controlling for PA.

$$z_{ab} = \frac{(a)(b)}{\sqrt{(a^2 se_b^2) + (b^2 se_a^2)}}$$

Chapter IV

Discussion

This study investigated cognitive style (CS) as a mediator between parental psychological maltreatment (PM) and depression (DEP) in a sample of adolescent boys. Rose and Abramson (1992) have hypothesized that PM affects the development of DEP more than physical abuse (PA) or sexual abuse (SA) due to its unique characteristic of being a direct attack on an individual's self-worth (e.g., "You are stupid," "You never should have been born"). To assess PM in isolation, without confounding the data with other forms of maltreatment, PA and SA were measured and controlled in this study. In addition, this is the first time a comprehensive measure of PM has been used to assess the relationship between PM, CS, and DEP. A sample of 169 middle to upper-middle class ninth grade boys were administered five questionnaires: the Comprehensive Assessment of Psychological Maltreatment – Child Version (Brassard et al., 2003-2011), the Children's Cognitive Style Questionnaire (CCSQ; Abela, 1997), the Depression Subscale of the Behavior Assessment System for Children – Second Edition – Self-Report Adolescent (BASC-2; Reynolds & Kamphaus, 2004), and the Physical Assault Subscale and a single Sexual Abuse item from the Conflict Tactics Scale (Straus et al., 1998). On these measures, 10.4 percent of the participants reported significant PM, 8 percent reported negative CS, and 12.5 percent reported at risk or clinically significant levels of DEP. It was predicted that the relationship between PM and DEP would be partially mediated by CS, when controlling for PA and SA, as existing research on the development of depression indicates numerous contributing factors (e.g., biological predisposition, negative life events). This hypothesis was tested using Baron and Kenny's (1986) four-step procedure for determining mediation and Sobel's (1982) test of significance. The results supported the prediction of partial mediation: CS

was found to be a significant mediator between PM and DEP. Specifically, CS mediated 11 percent of the total effect of PM on DEP. Controlling for PA, PM alone accounted for 28 percent of the variance in DEP. Adding CS to the model increased the total variance in DEP to 30 percent. The results of this study suggest that PM specifically affects CS and subsequently DEP, which until now has only been speculated by researchers. Conclusions about the directionality of the data are based on a theoretical understanding that DEP and CS do not cause PM to occur. Due to this study's cross-sectional design, causality cannot be determined. Thus, the conclusions of this study must be interpreted with caution.

The results of this study support and extend previous research. Examination of the hypotheses using linear regression confirmed previous findings that PM, CS, and DEP were significantly related to each other and that according to Baron and Kenny's (1986) requirements for mediation, CS partially mediated the relationship between PM and DEP. Additionally, an important goal of this study was to measure the relationships between PM and CS and PM and DEP more accurately than in past research by using the CAPM-CV, a comprehensive youth self-report measure of PM with strong construct validity, and controlling for PA and SA. Specifically, this study found a significant and predictive relationship between PM and DEP using a comprehensive measure of PM and controlling for PA and SA (Hypothesis 1), which supports previous findings with various methods of measuring PM such as the Maltreatment Classification System (Barnett et al., 1993), Life Events Scale (Alloy & Abramson, 1999; Needles & Abramson, 1990), and home observations (Shaffer et al., 2009). Past research on the relationship between PM and CS measured PM with a variety of negative parenting measures, such as the Critical Parenting Inventory (Randolph & Dykman, 1996), Child-Rearing Practices Report (Block, 1985), Children's Report of Parental Behavior Inventory (Schaeffer, 1965), and

the Childhood Trauma Questionnaire – Emotional Abuse subscale (Bernstein et al., 1994) that did not comprehensively measure the construct of PM. This study confirmed that a significant and predictive relationship existed between PM and CS (Hypothesis 2) when thoroughly measured with a comprehensive measure of PM and controlling for PA and SA. In addition, as found by meta-analyses (Gladstone & Kaslow, 1995; Joiner & Wagner, 1995) and the CVD project (Alloy et al., 2000; Alloy et al., 2006b), CS was confirmed to have a significant and predictive relationship with DEP in this study while controlling for PA and SA (Hypothesis 3).

The primary hypothesis of this study, that CS would partially mediate the relationship between PM and DEP using a comprehensive measure of PM and controlling for PA and SA, was also supported (Hypothesis 4). Baron and Kenny's (1986) four-step procedure was used to determine mediation, which involved a series of linear regressions to evaluate Hypotheses 1-3 and a comparison of the standardized beta weights for PM when CS was present and absent in the regression equation to evaluate Hypothesis 4. The influence of PM on DEP was found to decrease when CS was added to the model, demonstrating partial mediation. Continued data analysis using Sobel's (1982) methodology indicated that the degree of mediation was significant and that approximately 11 percent of the effect of PM on DEP was transmitted through CS. Although the variables used to measure the three constructs varied in previous research, the general findings that interpretations of negative events mediated between negative parenting behaviors and depression (Cukor & McGinn, 2006; Gibb et al., 2001; Gibb et al., 2003a; Gibb et al., 2003b; Gibb et al. 2006; Gibb & Alloy, 2006; Kaysen et al., 2005; Wright et al., 2009) were supported by the results in this study. This study is the first to find support for CS as a mediator between PM as a comprehensive construct and DEP.

Furthermore, in controlling for PA and SA, it can be preliminarily concluded, pending replication with different clinical and community samples, that the mediation findings are due to the effect of PM and not other forms of abuse. The majority of existing studies did not control for PA and SA, which may have distorted their findings. For example, Cukor and McGinn (2006) looked at PM, PA and SA as a combined single variable and Kaysen et al. (2005) admitted it was difficult to interpret their results on PM because they were unable to disentangle PM from PA and SA. In controlling for PA and SA, these results provide specific information about PM, which support Rose and Abramson's (1992) theory that PM's unique characteristic of directly supplying negative cognitions would specifically and significantly impact cognitive style and depression over PA and SA. Although Rose and Abramson's (1992) comments were made two decades ago and have been cited frequently, including similar studies by Gibb et al. (2001) and Gibb et al. (2003a), this is the only study to explicitly measure their prediction using a comprehensive IRT measure of PM with strong construct validity.

While the results of the mediation analysis are significant, CS was only found to mediate 11 percent of the relationship between PM and DEP. Naturally, with a small percentage of 11 percent, the question is raised about what comprises the remaining 89 percent? Firstly, there may be a direct relationship between PM and DEP that is not mediated by any other factors. This study found PM, controlling for PA, to account for 28 percent of the variance in DEP (Adj $r^2 = .28$). Secondly, as acknowledged in the literature review, there are certainly biological or genetic factors that play a role in whether or not someone who experiences PM will develop depression. The heritability of depression is estimated to be between 31 and 42 percent (Sullivan et al., 2000). Thirdly, gene-by-environment as well as environmental factors are significantly influential in the development of depression. Specifically, the 5-HTT genotype was found to

moderate the association between stressful life events (Caspi et al., 2003) or maternal criticism (Gibb et al., 2009) and children's depressive symptoms. In addition, a wide variety of environmental factors may have impacted participants' development of depression. For example, the presence and degree of protective factors may have influenced the relationship between PM and DEP, such as a positive adult relationship. It is possible that participants experiencing parental PM may have one or more positive adult relationships outside the home (e.g., grandparent, aunt/uncle, teacher, coach, mentor) that counteract some of the effects of parental PM. Lastly, personality traits may also affect the development of depression following PM. For example, Phillippe et al. (2011) found ego-resiliency to mediate the relationship between general childhood abuse, particularly PM and physical neglect, and depression in adults. Additionally, Maciejewski et al (2000) found self-efficacy to mediate the relationship between stressful life events and depression for adults with a history of depression. The current study investigated one variable, CS as measured by the CCSQ (Abela, 1997), and acknowledges there are numerous additional variables that could contribute to the effect of PM on DEP.

When interpreting the results of this study, it is important to consider the findings within the context of the participants' demographics. Independent t-tests were performed to identify potential demographic group differences by ethnicity, parental marital status, and participants' living situation. None of these variables, which were dichotomized due to small sample sizes of each non-White minority group, were found to have a significant effect on PM, PA, CS, or DEP. The results in this study that White participants did not differ significantly from non-White participants in CS is consistent with findings from a international meta-analysis of 266 studies on positivity bias in attributions (Mezulis et al., 2004). Positivity bias reflects a subjective positive image of oneself and one's environment and is associated with positive cognitive style and

decreased cognitive vulnerability to depression (Mezulis et al., 2004). Mezulis et al. (2004) measured positivity bias among several cultural groups and did not find differences between White Americans and African Americans, Asian Americans, Hispanic Americans, and Native Americans. Interestingly, the results from non-Western samples found that while Chinese and Korean participants have similar levels of positivity bias as American participants, Japanese and Pacific Islanders displayed significantly smaller positivity bias than Americans (Mezulis et al., 2004). Despite these findings, some research suggests that African American adolescents are more likely to have decreased self-esteem and develop symptoms of depression due to experiences with discrimination and pessimism about future opportunities (Wong, Eccles, & Sameroff, 2003). Although the current study did not identify ethnic group differences in any variable, it is also important to take into consideration that parenting practices can differ widely between cultures (Mezulis et al., 2006).

Additional demographics to consider include gender, age, and socio-economic status. The participants in this study were adolescent boys, ages 14 to 16, who were ninth grade students at an independent Jesuit high school in Manhattan, New York. In the mediation studies reviewed, the participants were either children (Gibb et al., 2006; Gibb & Alloy, 2006), young adult undergraduates (Cukor & McGinn, 2006; Gibb et al., 2001; Gibb et al., 2003a; Gibb et al., 2003b) or adults (Kaysen et al., 2005; Wright et al., 2009). One purpose of this study was to measure PM *in* childhood to understand the relationship between variables as the maltreatment was occurring. However, young children, such as the fourth and fifth grade participants in studies by Gibb et al. (2006) and Gibb and Alloy (2006), are considered to have incomplete cognitive development (Cole et al., 2008). This study used an adolescent sample due to previous research that has found adolescence to be the developmental stage at which cognitive style

crystalizes (Cole et al., 2008; Romens et al., 2009) and metacognition becomes more sophisticated (Mann et al., 1989). A longitudinal study by Cole et al. (2008) revealed that attributional style does not become trait-like until late middle childhood and early adolescence. Although these factors increase confidence that this study's adolescent participants can rate themselves accurately on a series of questionnaires, some of the participants may not yet be able to reflect on and interpret their own experiences.

The participants in this study were ninth grade boys. Although adolescent girls are twice as likely to develop depression than adolescent boys (Marcotte, Alain, & Gosselin, 1999; Merikangas et al., 2012; Nolen-Hoeksema & Girgus, 1994; Wichstrøm, 1999), adolescent boys undoubtedly experience depression. Population estimates report that 7.7 percent of adolescent boys meet DSM-IV criteria for Major Depressive Disorder or Dysthymia, compared to 15.9 percent of adolescent girls (Merikangas et al., 2010). In this study, 12.5 percent of participants reported significant levels of depression on the BASC-2-SRA (at risk or clinically significant; T-scores = 60+). These rates of depression in adolescent boys cannot be compared directly since significant scores on the BASC-2 denote elevated depressive symptoms, but not necessarily to the degree or for the time period required to meet DSM-IV criteria for MDD or Dysthymia. Depression in adolescent boys also looks different from depression in adolescent girls. Boys typically exhibit more irritability and are at greater risk for substance abuse while girls tend to report eating disorders and somatic symptoms (Kovacs et al., 2003). As reported by Kleinfeld (2009), the National Center for Health Statistics Vital Health Statistics System found that adolescent girls are more likely to plan (females 13%; males 9%) and attempt (females 9%, males 5%) suicide, but adolescent boys have a much higher suicide completion rate (2.7 times greater ages 10-14, 4.5 times greater ages 15-19). While adolescent boys do not exhibit rates of

depression as high as adolescent girls, they are certainly not immune from depression. The results from this study, that 12.5 percent of community adolescent boys reported significant symptoms of depression, and the clear differences in symptomology between genders, it is important to study adolescent boys in addition to and independently from adolescent girls.

The participants in this study would not generally be considered an at-risk group for PM. In the Fourth National Incidence Study of Child Abuse and Neglect (NIS-4; Sedlak et al., 2010), children who were White, lived with married biological parents, had employed parents, and higher socio-economic statuses, were found to be significantly (2 to 8 times) less likely to experience maltreatment (physical, sexual, and emotional abuse or neglect) than Black or Hispanic children, single or unemployed parents, and families with lower SES. Consequently, maltreatment is infrequently studied in the middle to upper-middle class. This population was specifically chosen to identify the extent to which PM is present in affluent, academically high-achieving families due to findings on parental pressure in affluent families by Luthar and colleagues (1999, 2002, 2005, 2006). While measures of parental criticism used in Luthar and colleagues' research (4 items from the Multidimensional Perfectionism Scale; Frost, Marten, Lahart & Rosenblate, 1990) and parental values (6 item Parental Values Scale, Luthar & Latendresse, 2005b) do not specifically measure PM, they measure aspects of PM. Parental criticism (e.g., "I am punished for doing things less than perfectly," "My parents never try to understand my mistakes") and parental values of achievement over integrity have been shown to be significantly related to internalizing symptoms in affluent middle and high school children as compared to their lower-income counterparts (Luthar & Becker, 2002; Luthar & D'Avanzo, 1999; Luthar, Shoum & Brown, 2006, Luthar & Latendresse, 2005a). This research found that the relationship between affluence and maladjustment is related to high perfectionist strivings

and both literal and emotional isolation from adults (Luthar & Latendresse, 2005a). They identified three specific parental behaviors in their research that directly correspond to PM subtypes: criticism/denigration when the child does not meet their expectations (Spurning), literal isolation (Isolating) and emotional isolation (Denying Emotional Responsiveness).

An analysis of the CAPM-CV items that most closely reflected high academic pressure or expectations revealed inconsistent findings. Spurning behaviors were most frequently reported (e.g., 26% reported sometimes, often or almost always *Says I am stupid, lazy, worthless and/or calls me other insulting names*). However, only one of five Denying Emotional Responsiveness items was notable (15% reported often or almost always *Fails to comfort me when I'm upset*) and Isolating behaviors were minimally reported. The most frequently reported Isolating item (*Keeps me away from others for a very long period of time*) was only rated sometimes, often, or almost always by 6 percent of participants. Interestingly, two of the most common items reported in this study represented the subtype Exploiting/Corrupting, which was not specifically identified in Luthar and colleagues' research (29% reported often or almost always *Invades my privacy*, 22% reported often or almost always *Expects me to take care of him/her and solve his/her problems like I'm the parent*). While the first item may reflect overinvolved parents in high-pressured families, the second item does not align with previous research and certainly is not a behavior exclusive to affluent families. Interestingly, youth in intact families did not endorse the second item less often than youth with separated or divorced parents where the parenting burden is often much higher. In addition, there are other items that were not endorsed by this sample, which one might expect parents with high expectations for their children to exhibit. Since SES data was not collected during this study, and the aggregate data show a range

of income and education levels, these participants may not in fact represent affluent families similar to those in the research cited by Luthar and colleagues.

The CAPM-CV items endorsed by this study's participants revealed a variety of PM subtypes, with no particular emphasis on any single subtype. This suggests that when PM exists in a middle class, adolescent male population, it represents the full spectrum of abusive behaviors. Additionally, the amount of participants reporting significant levels of PM (10.4%) in this sample was considerably higher than population estimates of referred children (0.4 – 2.1% found by the NIS-4; Sedlak et al., 2010) and somewhat lower than population estimates of community children (17% of parents reported exhibiting PM behaviors 20 or more times per year in the Second National Family Violence Survey of 1985) (Vissing et al., 1991). These differences are not surprising given the various methods of data collection. The current study used a self-report measure of a community sample in a school, the NIS-4 measured children who had been referred to an agency, and the Second National Violence Survey surveyed community parents. From the variations in incidence/prevalence statistics, it appears that the true prevalence of PM remains unknown and that current surveillance measures need improvement.

There were many strengths of this study. Firstly, PM was measured comprehensively, consistent with its widely agreed upon definition. Secondly, PA and SA were controlled, which has not been done in many previous studies. The combination of these two factors enabled Rose and Abramson's (1992) hypothesis that PM specifically affects CS and DEP, more so than PA or SA, to finally be assessed. Thirdly, this study took into account that mid-adolescence is the earliest time at which self-reflective questionnaires can be accurately assessed and at which CS is likely to have become trait-like. Additionally, this study specifically looked at adolescent boys

who are often overlooked in depression research. Finally, this study had an adequate sample size ($n = 144$) and included a fairly ethnically diverse sample.

Limitations of the Study

Despite the significant contributions this study makes to the fields of PM and the developmental origins of depression, there were several limitations that impact the ability to generalize these findings. The most significant limitation of this study is that it is cross-sectional so while the results are described as occurring in a particular order, a time priority was not established. The justification for interpreting results in this manner is based on expert consultation and a theoretical understanding of the variables PM, CS, and DEP. Nevertheless, these three variables were not measured over time therefore the conclusion that PM transmits to DEP through CS does not reflect known causal relationships and must be interpreted as such.

This study is also limited in the measures it used. Firstly, the measures are all self-report measures. The use of a single technique (questionnaire) from a single source (the adolescent) increases the likelihood that relationships may be either exaggerated or under-reported.

Secondly, the BASC-2-SRA is a subscale of a broadband measure of behavior problems. It is possible that a stand-alone measure of depression, such as the Reynolds Adolescent Depression Scale 2 (Reynolds, 2002) or the Children's Depression Inventory 2 (Kovacs, 2010), would be more comprehensive and thus more accurate.

The third major limitation of this study involves the demographics of the participants. Restricting the sample to boys, ages 14 to 16, precludes analyses based on gender and developmental level. As previously discussed, adolescent boys and adolescent girls differ significantly in their rates of depression and presentation of symptoms. Conducting this study with girls as well as boys would have been useful to understand how experiences of PM and the

role of cognitive style differ by gender. Additionally, if the data were collected at various stages of development, such as including pre-adolescence and late-adolescence, the results could indicate at what point cognitive style becomes a significant factor. It is likely that as with puberty, adolescents may solidify in their cognitive style at different ages. This could be particularly important since participants' metacognitive levels may have a significant effect on the results.

The participants in this study were grouped together and considered middle to upper-middle class based on the aggregated income data provided by the school. However, the students at this school vary in the level of scholarship they receive as well as in the education and income levels of their parents. Generalizations about “affluent” families are likely distorted by the range of socio-economic statuses represented by the participants in this study and may have contributed to the inconsistent results of the PM item analysis. Additionally, demographic variables that may also serve as mediators, such as family history of depression, environmental stressors other than abuse, and personality traits, were not assessed in this study.

Directions for Future Research

Future research should address the limitations of this study, particularly replicating the methods with multiple data points collected over time to better infer causality. In addition, this study only involved boys and in the future it is advised to also include a sample of girls to understand gender differences in interpretations and outcomes of PM. There are also measurement issues that should be addressed in future studies, such as considering alternative or additional measures of CS and DEP. An measure of attributional style (inferences about the causes of negative events) in addition to inferences about consequences and the self following negative events may provide even more specific information about how cognitive style mediates

the relationship between PM and DEP. Other measures of CS or related variables such as rumination (Spasojevic & Alloy, 2002) and Young's early maladaptive schemas (Young, 1990; Cukor & McGinn, 2006; Wright et al., 2009) should also be considered because it is possible that the 11 percent effect of CS on DEP is actually in part due to a hidden third variable that is highly correlated with CS. Additionally, traits such as self-efficacy and self-concept may contribute to the relationship between PM and DEP. Research on PTSD has found self-efficacy (Saigh, Mroueh, Zimmerman, & Fairbank, 1995) and self-concept (Saigh, Yasik, Oberfield, & Halamandaris, 2008) to be significantly different between samples of children with and without PTSD. These findings suggest that a similar relationship may exist with DEP, that self-efficacy and self-concept could mediate the relationship between PM and DEP or possibly be alternative outcome variables. Future research would benefit from identifying additional variables that impact the relationship between PM and DEP.

Although using a comprehensive measure of PM did not ultimately produce a different outcome than previous studies using negative parenting variables, it is important for future research to utilize a measure that accurately represents the construct of PM, such as the CAPM-CV. The studies cited in the literature review claimed to measure PM or emotional maltreatment and in fact were only measuring one aspect of PM. However, PM is a complex behavior and should be represented as such in research. Using the CAPM-CV, future research can explore the relationships between each subtype of PM, CS, and DEP to provide more specific information about what aspects of PM most significantly affect cognitive style and depression.

This study used aggregate data on socio-economic status (SES) that demonstrated a wide-range of income and education levels. Future studies should consider collecting more detailed SES information to learn more about the relationship between PM and SES. In addition, a larger

sample with greater diversity would be useful in analyzing the influence of SES, as well as ethnicity, in the relationships between PM, CS, and DEP. This study collected data on ethnic identification, but due to the small sample sizes for all groups other than White, there was not enough power to compare the results between each group. Ethnic differences in PM, CS, and DEP are worth further exploration as thinking styles and parenting practices may vary considerably among cultures. Collecting data on family history of depression and other psychiatric conditions as well as additional environmental stressors (e.g., divorce, death, moving) and adding these factors into the equation would help to better understand factors other than CS that influence the relationships between PM and DEP.

Clinical Implications of the Study

The unfortunate, but not surprising, results of this study suggest that PM is common, present to a significant degree in 10.4 percent of middle class families, as reported by a community sample of 144 ninth-grade boys. Additionally, 37.5 percent of participants reported sub-threshold (between the mean and +1 SD) experiences of PM. Eight percent of participants reported having a negative cognitive style as measured by the CCSQ (Abela, 1997) and 12.5 percent reported at risk or clinically significant depression as measured by the BASC-2-SRA (Reynolds & Kamphaus, 2004).

The results of the mediation analysis in this study indicated that PM, CS, and DEP are significantly related. While a time priority cannot be established, previous research and theoretical foundations of PM provide support for the interpretation that experiences of PM lead to depressogenic thinking (negative cognitive style) and, for some, ultimately depression. These connections between PM, CS, and DEP provide two primary opportunities for clinical

intervention: prevention with children and parent training with adults. Using screening measures of PM in school, children experiencing PM at home can be identified.

With the goal of preventing negative cognitive style and depression, interventions with children can help them process their experiences of PM and restructure their thinking patterns. Wright et al. (2009) promote early intervention for children experiencing PM situations “who have developed internal working models of the self as worthless, others as abusive, or the world as threatening” (p. 66). In addition, Kim and Cicchetti (2006) specifically advise interventions to build self-esteem, explaining that they might be “especially effective in altering the trajectory of depressive symptoms over time” (p. 14). Cognitive-behavioral therapy has been demonstrated to be effective in altering maladaptive beliefs and developing behavioral competencies in adolescents (see meta-analysis by Reinecke, Ryan, & DuBois, 1998). In schools, programs such as the Penn Resiliency Program (Gillham, Jaycox, Reivich, Seligman, & Silver, 1990) and the Australian-based Resourceful Adolescent Program (Shochet, Whitefield, & Holland, 1997) may help prevent children with depressogenic cognitions from developing clinically significant depression (Gillham et al., 2007; Rivet-Duval et al., 2011; Shochet et al., 2001). These programs seem to be more beneficial for sub-threshold depressed adolescents than clinically depressed adolescents, suggesting school-based prevention programs may be better at promoting positive mental health than preventing clinical depression (Gillham et al., 2007; Rivet-Duval et al., 2011).

With the goal of decreasing the occurrence of PM, universal parenting programs can be offered to the parents of identified children, or even more generally to all parents in the community. These programs, such as Incredible Years (Webster-Stratton, 1992), “improve parent-child relationships and educate parents about PM, the different forms it can take, the damage it can cause, and where the line is between acceptable parenting and psychological

maltreatment” (Brassard & Melmed, in press). Even though 95 percent of parents surveyed by Straus and Field (2003) admitted to committing PM behaviors, many parents do not know how severely words can impact a child. It is likely that the positive response rate in Straus and Field’s (2003) study was so high because parents were not ashamed to admit seemingly normative behaviors. Communicating this vital information has become the duty of mental health and school professionals in order to protect the children with whom they work and prevent the replication of PM to the next generation.

This study investigated a potential pathway, CS, through which PM affects DEP. The findings supported the hypothesis that CS partially mediated the relationship between PM and DEP, controlling for PA and SA. Although the sample included only ninth grade boys and the data were collected at one point in time, the results are intriguing and consistent with Rose and Abramson’s (1992) hypothesis that PM plays a unique role in the development of CS and DEP. Additional research is necessary to replicate these findings longitudinally and in more diverse (age, gender, SES, ethnicity) samples to better understand when and for whom CS influences the development of DEP following exposure to parental PM.

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