

CHILDHOOD EMOTIONAL MALTREATMENT AND ADULT RELATIONSHIP
FUNCTIONING: AN EXAMINATION OF COGNITIVE MEDIATORS

by

LAUREN GAY FONTENOT

(Under the Direction of Joan L. Jackson)

ABSTRACT

Adult outcomes of Childhood Emotional Maltreatment (CEM) continue to be understudied in comparison to outcomes of other forms of maltreatment (i.e., childhood physical abuse, childhood sexual abuse), despite research and theory consistently linking CEM with varied negative psychological and relational outcomes in adulthood (Hankin, 2005; Perry, DiLillo, & Peugh, 2007). Given its interpersonal nature, repetitive CEM experiences can be regarded as “chronic relational adversity,” (Yates, 2007), which predisposes individuals to negative interpersonal outcomes through ensuing cognitive and behavioral processes carried into adulthood and research examining the impact of CEM on romantic relationships has supported such notions (Perry et al., 2007). The present study examined the effect of early maladaptive schemas, insecure attachment and self-esteem as mediators of the relationship between CEM and current relationship functioning. Participants were 576, predominantly Caucasian, female undergraduate students who completed online surveys measuring the constructs of interest. Structural equation modeling analyses support a partial mediation model in which the relationship CEM evidences both a direct and indirect effect on reduced relationship functioning with

the strongest association observed between the Disconnection/Rejection early maladaptive schema domain. Although preliminary, results suggest that CEM experiences impact women's beliefs about themselves in the context of relationships with others, and such negative beliefs detrimentally impact their perception of current relationship functioning. While additional longitudinal examinations of these constructs within clinical samples are needed, results suggest implications for individualized therapeutic intervention through the use of schema therapy for women with interpersonal and romantic relationship difficulties following CEM experiences.

Current findings contribute to efforts within the current literature focused on understanding and mitigating the cognitive sequelae of childhood emotional maltreatment experiences.

INDEX WORDS: Childhood Emotional Maltreatment, Romantic Relationships, Relationship Functioning, Early Maladaptive Schemas, Insecure Attachment, Self-Esteem

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LAUREN G. FONTENOT

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M.S., University of Georgia, 2013

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by

Lauren G. Fontenot

Major Professor: Joan L. Jackson

Committee: Steven R.H. Beach
Anne E. Shaffer

Electronic Version Approved:

Suzanne Barbour, Ph.D.
Dean of the Graduate School
The University of Georgia
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Chapter 1

INTRODUCTION

Overview

Posited as a “unifying concept of child abuse and neglect,” (Hart et al., 2002, pg. 79), emotional maltreatment, particularly childhood emotional maltreatment (CEM), has been consistently linked with many negative psychological and relational outcomes in adulthood (Gibb et al., 2001; Hankin, 2005; Perry, DiLillo, & Peugh, 2007). Most notably, individuals with histories of CEM report reduced overall romantic relationship quality (Perry et al., 2007), as well as reduced trust and intimacy (Davis et al., 2001; Twaite & Rodriguez-Srednicki, 2004), increased relational conflict (Messman-Moore & Coates, 2007) and loneliness (Loos & Alexander, 1997). Given the distal relationship between CEM and relationship difficulties in adulthood, a clear understanding of mediating processes is key to understanding how such early experiences confer risk for later problems.

In order to understand this relationship, Riggs (2010) proposed a model consisting of theoretical and empirical hierarchical regression models for understanding the relationship between CEA and later difficulties in relationship adjustment and psychological intimate partner violence. Briefly, this overall model proposes that emotionally abusive parenting behaviors foster the development of an insecure attachment style. In turn, insecure attachment contributes to impaired emotion regulation and coping behaviors via the development of negative internal working models (i.e.,

negative views of oneself and the relationship of oneself to others). As the child continues to develop, insufficient coping strategies and emotion dysregulation engender susceptibility for the development of maladaptive interpersonal schemas (i.e., early maladaptive schemas (EMS)), which impair interpersonal relationships when enacted throughout the remainder of childhood and adolescence. Once developed these EMS, in conjunction with ongoing interpersonal problems, serve as risk factors for psychological distress and relationship dysfunction. Without successful intervention within this complex, this cycle might continue to be repeated over time, with such deficiencies in regulation and interpersonal functioning leading to emotionally abusive parenting (Riggs, 2010).

It is necessary to conceptualize each of the paths suggested by Riggs (2010) as interrelated. The cognitive mediators described within this model (e.g., insecure attachment, EMS) are associated with one another, likely overlapping and reinforcing each other to impact adult relationship functioning. Following theoretical conceptualization, these mediators, including insecure attachment (Riggs & Kaminski, 2010) and EMS (Messman-Moore & Coates, 2007), have only been examined in isolation. Given that the effects of emotional maltreatment are theoretically multifaceted and that negative relational outcomes are likely due to a combination of intervening factors, it is important to consider these mediators in the interrelated context within which they exist, rather than in isolation. At the current time, there is a need for a clearer understanding of how CEM leads to risk for relationship dysfunction and this need calls for an examination of the unique and relative contributions of each of these mediators within an overall model of how cognitive risk impacts adult relationship functioning. In

doing so, we may develop the specific points for intervention for individuals with histories of emotional maltreatment (Riggs, 2010).

Childhood Emotional Maltreatment

To date, the majority of child abuse research has focused on the outcomes of childhood sexual abuse and childhood physical abuse, possibly due to a perception that emotional maltreatment is less severe compared to other forms of maltreatment. However, given research demonstrating its lasting consequences for child development and adult functioning, emotional maltreatment has begun to receive attention within the field as an important form of child maltreatment (Egeland, 2009). Emotional maltreatment is a broad term, combining both emotionally abusive and emotionally neglectful behavior perpetrated by parents or caregivers (Egeland, 2009). Broadly defined, childhood emotional maltreatment (CEM) may be conceptualized as a repeated pattern of behaviors that compromise the psychosocial wellness of a child, including “emotional unavailability, unresponsiveness and neglect,” “negative attributions or misattributions to the child,” “developmentally inappropriate or inconsistent interactions with the child,” “failure to recognize or acknowledge the child’s individuality and psychological boundary,” and “failing to promote the child’s social adaptation” (Glaser, 2002, pp. 703-704). Generally, childhood emotional abuse (CEA) is characterized by parents belittling, taunting, or openly rejecting their child, while childhood emotional neglect (CEN) is regarded as emotionally or psychologically unavailable parenting that is unresponsive to a child’s needs and wishes (Egeland, 2009). Emotional maltreatment is conceptualized on a continuum, representing the notion that such experiences occur repetitively and cause ongoing distress within the child over a period of time.

Prevalence rates of CEM, CEA, and CEN vary across studies. For example, the prevalence of CEM within a sample of maltreated children from the Los Angeles County Department of Children and Family Services was approximately 8.9%; however when abuse information was recoded using a broader definition, the rate of emotional maltreatment increased to almost half of the sample (Trickett & Sussman, 1988). Similarly, rates of CEA have varied across samples, as recent estimates approximate the prevalence of CEA experiences between 13% (Dong, Anda, Dube, Giles, & Felitti, 2003) and 32% within general population (Briere & Elliott, 2003), while rates of CEN have varied between 16.7% within the general population (Dong et al., 2003) and 90% within a sample of women with substance abuse histories (Medrano, Zule, Hatch, & Desmond, 1999). Often, estimates vary by population, but variation is also due to the use of varying definitions of emotional maltreatment, CEA and CEN across studies. Notably, ongoing reliance on specific measures of emotional maltreatment has helped to provide consistency through more operationalized definitions across studies despite variance within colloquial definitions. Additionally, it is important to note that while studies have examined the prevalence and outcomes of CEM, CEA, and CEN, the majority of these studies have focused primarily on CEA or CEM (broadly defined), while far fewer have examined the effects of CEN in isolation.

Despite use of differing definitions, research has consistently demonstrated that experiencing CEM is associated with negative outcomes throughout childhood, adolescence, and adulthood (Egeland, 2009; Gibb et al., 2001; Hankin, 2005; Lumley & Harkness, 2007), including development of psychopathology (Gibb et al., 2001; Hankin, 2005), social isolation (Loos & Alexander, 1997), and low self-esteem (Briere & Runtz,

1990), as well as interpersonal difficulties (Messman-Moore & Coates, 2007), including relationship dysfunction (DiLillo et al., 2007) and intimate partner violence (Crawford & O'Dougherty-Wright, 2007; Gay, Harding, Jackson, Burns, & Baker, 2013). Given the interpersonal nature of emotional maltreatment, it has been argued that such maltreatment may be regarded as a sort of “chronic relational adversity,” (Yates, 2007), which predisposes individuals to negative interpersonal outcomes through ensuing cognitive and behavioral processes carried into adulthood. From a theoretical standpoint, CEM is thought to convey risk for the development of intra- and interpersonal difficulties through negative cognitions about the self and others stemming from abuse experiences. Through repeated interactions, the child internalizes negative messages of inadequacy and worthlessness conveyed by the caregiver, which leads to the development of both a negative self-concept and negative view of the self in relation to others (Hart & Brassard, 1987; Twaite & Rodriguez-Srednicki, 2004). In turn, such schemas and schema-related behaviors hinder the development of satisfying relationships in adulthood (Perry et al., 2007).

Childhood Emotional Maltreatment and Romantic Relationship Outcomes

Due to its pervasive effect on interpersonal functioning, CEM has been shown to broadly impact adult interpersonal functioning through reduced psychological wellbeing, conflict resolution, and communication skills, as well as increased psychopathology (Berzenski & Yates, 2010; Davila & Bradbury, 1998; Dodge Reyome, 2010; Messman-Moore & Coates, 2007; Paradis & Boucher, 2010; Riggs & Kaminski, 2010; Rogge & Bradbury, 1999; Varia & Abidin, 1999). Given that early relationships with caregivers provide an initial framework for the expression of empathy and intimacy, as well as the

development of relationship expectations, emotionally abusive and neglectful experiences may contribute risk for reduced relationship functioning in adulthood, and ongoing research supports this notion.

Retrospective self-reports of CEA have been linked to lower overall satisfaction and quality of romantic relationships (DiLillo et al., 2007; Perry et al., 2007), accounting for a greater percentage of the variance in reduced relationship satisfaction than other forms of childhood maltreatment (i.e., childhood sexual abuse and childhood physical abuse), both individually and combined (Davis et al., 2001). Further, self-reported CEM is associated with negative outcomes in more specific domains of relationship quality, including reduced trust and intimacy (Carbone, 2010; Davis et al., 2001; Twaite & Rodriguez-Srednicki, 2004), increased feelings of isolation (Loos & Alexander, 1997), sexual difficulties (Davis et al., 1991; Mullen et al., 1996), increased relationship dissolution (Colman & Widom, 2004; Mullen et al., 1996) and engagement in intimate partner violence (Crawford & Wright, 2007; Gay et al., 2013; Messman-Moore & Coates, 2007; Whitfield, Anda, Dube, & Felitti, 2003). Additionally, romantic partners with CEA histories are more likely to regard their partner as intrusive and uncaring (Mullen et al., 1996).

Exemplifying the complex relationship between childhood abuse experiences and couple dysfunction, Paradis and Boucher (2010) attempted to examine the relationship between childhood maltreatment experiences and interpersonal difficulties in adult romantic relationships within a sample of 1,728 male and female university students. Results of multiple two-way analyses of variance (gender by abuse type) indicated that interpersonal problems within current romantic relationships varied by type of

maltreatment experienced and by gender. Overall results indicated a main effect of both abuse type and gender, such that, compared to non-victims of childhood maltreatment, individuals who experienced physical abuse, physical neglect, CEA, and CEN reported significantly more interpersonal problems within their current relationship and that males generally reported more interpersonal difficulties within their current relationship than females. For both men and women, CEN was associated with submissive/non-assertive and self-sacrificing behaviors. An interaction effect for women with CEA indicated that women who experienced CEA reported greater engagement in domineering behaviors and that histories of physical abuse or CEA predicted women being distant and conflict-avoidant within their current relationship. These results suggest that, for women, being subjected to emotional abuse may lead to perceptions of intimate others as threatening or a perceived need to control a partner in order to protect self-worth. CEN-related results suggest that women who have experienced emotional neglect by caregivers may avoid sharing their feelings or needs with intimate partners. When considered in combination with the associations between emotional maltreatment and various interpersonal difficulties referenced before, these results indicate that CEA and CEN experiences likely contribute distal risk for later relational difficulties for women.

Cognitive Mediators of the Relationship between CEA History and Romantic Relationship Difficulties

As noted above, several cognitive processes have been postulated to account for the relationship between emotional maltreatment and romantic relationship difficulties. Specific hypothesized cognitive mediators of this relationship include the development of insecure attachment (Riggs & Kaminski, 2010), early maladaptive schemas (EMS,

Messman-Moore & Coates, 2007), and low self-esteem (Petric-Jackson, Ames, Betz, Katsikas, Pitman, & Lawless, 1993). Both the development of EMS and low self-esteem are theorized to stem partially from insecure attachment. Furthermore, within the current literature, insecure attachment has been shown to be a consistent mediator between CEM and a variety of negative relational outcomes.

Insecure Attachment

Attachment theory assumes that an individual's history of interpersonal experiences, including memories, beliefs, and expectations, shape how that individual will function within adult romantic relationships (Berlin & Cassidy, 1999). Given that childhood maltreatment profoundly influences developing children's understanding of the self and the relation of self to others (Liem & Boudewyn, 1999), children with emotional maltreatment histories are at risk of developing a negative understanding of self-other relationship (Riggs, 2010). Negative understandings (referred to as negative "internal working models," see below) of the self-other relationship place the child at risk for viewing the self as inept, worthless, and incapable at managing adult relationships and for viewing others as rejecting, insensitive, and uncaring. Accordingly, these beliefs about the self and others lead to increased risk for negative relationship outcomes throughout the lifespan (Dodge-Reyome, Ward, & Witkiewitz, 2010). This hypothesized risk has been continuously supported by research indicating that CEM is related to development of an insecure attachment style (Lyons-Ruth & Block, 1996; Riggs, 2010; Riggs & Jacobvitz, 2002) and that insecure attachment is linked to relational difficulties in adulthood (Caspi & Elder, 1988; Dodge Reyome, 2010; Gilbert, El-Bassel, Schilling, & Friedman, 1997; Whitfield, Anda, Dube, & Felitti, 2003).

As noted above, early messages conveyed by attachment figures, generally parents, contribute to an individual's core belief system, a system through which children view themselves and their self in relation to others (Collins, Guichard, Ford, & Feeney, 2004; Hart et al., 2002; Thomas, 2003; Thompson, Laible, & Ontai, 2003; Twaite & Rodriguez-Srednicki, 2004). Infants and children whose attachment figures respond appropriately to the child's need for love and support generally develop "secure" attachment, which is characterized by positive views of the self as worthy of love and care by others and a sense of agency to positively impact and alter interpersonal relationships.

Specific IWMs are characteristic of both secure and insecure attachment styles. Children and adults displaying secure attachment are thought to have "positive" IWMs. Securely attached adults generally report experiencing many satisfying and functional relationships. Further, these relationships are characterized by trust in oneself and others and positive perceptions that others will be supportive (Berlin & Cassidy, 1999). According to attachment theory, IWMs are carried forward and activated within adolescent and adult relationships (Berlin & Dodge, 2004), theoretically accounting for the continuity between childhood and adult attachment style (Berlin & Dodge, 2004; Riggs, Cusimano, & Benson, 2011). IWMs provide the basis for how an individual expects the other to respond to them within interpersonal contexts, guiding how the individual thinks about how supportive and trustworthy others will be. Thus, through the activation of IWMs, attachment style likely impacts relational outcomes as specific IWMs guide the individual's cognitive and behavioral responses to intimate others (Berlin & Dodge, 2004).

Theory underlying emotional maltreatment and development of insecure attachment. Emotional maltreatment perpetrated by attachment figures is thought to disrupt the development of secure attachment and lead to negative IWMs, as negative self- and other-associations are conveyed to the child from the attachment figure (Rose & Abramson, 1992). Over time, these associations are internalized and are automatically processed (Hart & Brassard, 1987). For example, children whose caregivers respond in a consistently rejecting manner are likely to develop negative IWMs of others as indifferent, thoughtless, or cruel, making it less likely that children will trust others or turn to them for help. Should a caregiver provide inconsistent messages to the child, he or she may develop a more anxious view of the self-other relationship leading to a view of the self as unworthy and engendering fears of abandonment. Generally, negative IWMs of self are thought to contribute to self-blame, overdependence on the attachment figure, limited exploration, and ineffective use of social support (Collins & Read, 1994). Thus, IWMs developed from emotional maltreatment experiences may represent a cognitive vulnerability that biases individuals to perceive their relationships and intimate others pessimistically, leading to greater emotional distress and engagement in maladaptive behaviors related to reduced relationship functioning (Collins & Read, 1994).

The two possible responses to emotional maltreatment described above represent two different forms of insecure attachment: anxious and avoidant attachment, and these two forms of insecure attachment have been empirically demonstrated to have differential relational outcomes. Individuals with avoidant attachment patterns rely on “deactivating strategies,” described as tendencies to avoid dependence on, and intimacy with, intimate others, while emphasizing personal autonomy and valuing invulnerability. These

cognitive tendencies result in behavioral patterns of distancing, lack of trust, and reduced self-disclosure (Mikulincer & Shaver, 2003). In contrast, individuals with anxious attachment tend to draw negatively biased conclusions about their partners' feelings and loyalty even when the evidence for such is ambiguous or nonexistent (Collins, 1996). Anxiously attached individuals display "hyperactivating strategies" (described as continuously seeking support and reassurance from an intimate partner; Mikulincer & Shaver, 2003) in order to cope with perceived ambiguity about the current romantic relationship. Cognitive patterns of enmeshment, overdependence, and concerns about abandonment characterize anxiously attached individuals (Mikulincer & Shaver, 2003).

Empirical evidence concerning insecure attachment and relational outcomes.

Empirical evidence supports the notion that secure attachment contributes to increased relationship quality, while insecure attachment negatively impacts relationship quality. Abundant, consistent evidence demonstrates that secure attachment patterns are associated with better marital functioning and satisfaction compared to insecure attachment patterns (Banse, 2004; Cohn, Cowan, Cowan, & Pearson, 1992; Eiden, Teti & Corns, 1995; Fuller & Fincham, 1995), with securely attached individuals reporting more positive love experiences than insecurely attached counterparts (Brennan & Shaver, 1995; Levy & Davis, 1988; Pistole, 1989). These differences have also been empirically shown within specific domains of relationship functioning. Specifically, individuals with avoidant attachment styles report greater fear of intimacy (Hazan & Shaver, 1987; Tucker & Anders, 1999), while anxiously attached individuals also reported reduced trust (Collins & Read, 1990), but also greater jealousy (Hazan & Shaver, 1987), interpersonal conflict (Kirkpatrick & Davis, 1994), and relationship ambivalence (Kirkpatrick & Davis,

1994; Tucker & Anders, 1999). Most notably, anxiously attached individuals tend to endorse the lowest overall relationship satisfaction compared to all other attachment styles (Collins & Read, 1990; Kirkpatrick & Davis, 1994; Riggs, 2010).

Empirical evidence concerning CEA, insecure attachment, and relationship functioning. To date, only two studies have explicitly examined the mediating effect of insecure attachment on the relationship between emotional maltreatment and overall relationship functioning (Riggs & Kaminski, 2010; Riggs et al., 2011). Both of the studies discussed below aimed to examine relationship functioning within a broad sense, operationalizing relationship functioning as a composite of various aspects of committed romantic relationships, including satisfaction, cohesion, expression of affection and conflict within the relationship. Additionally, these two studies examined the impact of CEA and attachment for both men and women within the context of heterosexual dating relationships.

In a sample of 285 male and female college students, Riggs and Kaminski (2010) examined the impact of a variety of hypothesized mediators on different outcomes: partner perpetrated psychological aggression, self-perpetration of psychological aggression and relationship functioning as described above. Depending on the model, hypothesized mediators included emotional maltreatment or specific parenting behaviors, avoidant attachment, anxious attachment, and depression. Most relevant, results of the hierarchical regression examining the impact of psychological abuse, insecure attachment and depression on relationship functioning, while controlling for gender, CSA, CPA, and relationship length, indicated that only male gender, emotional maltreatment, and avoidant attachment predicted lower levels of relationship functioning. Emotional

maltreatment and insecure attachment (encompassing both anxious and avoidant attachment) accounted for 8% and 17% of the variance in overall relationship satisfaction, respectively. Within this model, CEA emerged as the only predictor of anxious attachment, whereas both CEA and CEN histories predicted avoidant attachment. These findings suggest that, compared to other forms of maltreatment, emotional maltreatment may serve as the greatest predictor of insecure attachment, which may in turn, impact relationship functioning negatively.

More recently, Riggs et al. (2011) demonstrated that history of CEA and attachment style are associated with the individual's perception of poor relationship functioning within a sample of 155 undergraduate heterosexual dating couples. Utilizing multilevel modeling to examine the impact of both individual and partner attachment on relationship functioning, overall results suggested that while their own CEA experiences only impacted the individual's relationship functioning, anxious and avoidant attachment patterns impacted both the individual and partner's relationship functioning. More specifically, individuals' self-reported relationship functioning is impacted by both their own and their partner's attachment anxiety, but only the individual's attachment avoidance. Therefore, the individual's anxious and avoidant attachment, but only their partner's anxious attachment was found to mediate the relationship between CEA experiences and reduced relationship functioning, accounting for approximately 20% of the variance within the model. Specifically regarding individual effects, insecure attachment (again, encompassing both anxious and avoidant attachment) mediated the relationship between CEA and reduced reported relationship functioning. Notably, moderation analyses by gender indicated that at lower levels of CEA endorsement, men

and women demonstrated similar levels of avoidant attachment; however, at higher levels of endorsed CEA experiences, women reported significantly higher levels of avoidant attachment compared to men. Gender was not found to moderate the relationship between CEA and anxious attachment. Taken together, results support the notion that CEA experiences likely influence expectations and behaviors in later romantic relationships (Collins & Sroufe, 1999; Riggs 2010) and suggest that this relationship may be more impactful for women who have experienced higher levels of CEA.

One additional study, Carnelley, Pietromonoco, and Jaffe (1994) examined the relative contribution of attachment styles and depression in explaining the relationship between negative maternal behaviors (e.g., being controlling, fewer positive experiences) and relationship functioning (defined as overall satisfaction, quality of interactions and conflict resolution) within a sample of 204 undergraduate women (Carnelley et al., 1994). To consider alternative possibilities, the authors conducted two sets of hierarchical analyses: one set with attachment style entered second and then depression entered third and another set with depression entered second and attachment entered third. Results indicated that insecure attachment was the strongest predictor of reduced relationship satisfaction. Specifically, insecure attachment style (namely, avoidant and anxious attachment) accounted for approximately 13% of the variance in reduced relationship satisfaction (equivalent to negative maternal behaviors), while depression only accounted for an additional 4% of variance over insecure attachment. Furthermore, avoidant attachment served as a stronger predictor compared to anxious attachment. Notably, these analyses were repeated in a sample of 48 married women (25 depressed; 23 non-depressed), and results of this second study upheld findings of the previous, with insecure

attachment continuing to serve as the strongest predictor of reduced relationship functioning.

Taken together, the studies referenced above support the notion that CEM experiences engender the development of insecure attachment. Self-perceptions and perception of the self in relation to others become biased. Activation of such negative IWMs in interpersonal relationships biases the individual's perception of relational transactions, affecting the quality of the relationship overtime.

While both theory and research support the notion that insecure attachment mediates the relationship between emotional maltreatment and negative relational outcomes, it does not account for the entire relationship, suggesting that attachment is only one specific developmental link (Riggs et al., 2011). Furthermore, insecure attachment is correlated with other posited cognitive mediators (e.g., EMS, low self-esteem) of the CEM-relationship dysfunction association. Thus, it is crucial to examine additional pathways that may account for this relationship. As noted above, insecure attachment is correlated with endorsement of EMS within the context of interpersonal relationships (Gay et al., 2013; Mason, Platts, & Tyson, 2005). Current theory and previous research has indicated conceptual and empirical overlap between attachment-related IWMs (Bowlby, 1980) and interpersonal cognitive and emotional processes, including Young's (1990) EMS. Notably, in one study, when compared as mediators, endorsement of these EMS served as a stronger mediator of the relationship between CEA and intimate partner violence perpetration and victimization (Gay et al. 2013).

Early Maladaptive Schemas (EMS)

Young and colleagues (Young, 1994, 1999; Young, Klosko, & Weishaar, 2003) developed the concept of EMS as a cognitive framework enacted within both intrapersonal and interpersonal contexts. According to Young et al. (2003), EMS encompass a broad pattern of maladaptive thinking about the self and others that are developed during childhood and adolescence. These broad patterns of thinking are comprised of different memories, emotions, and thoughts. Further, EMS are either solidified or changed based on developmental experiences that are commensurate or inconsistent with earlier experiences. As noted above, EMS are considered to be maladaptive within an interpersonal context and thus, are thought to lead to interpersonal difficulties later in life (Thimm, 2013; Young, Klosko, & Weishaar, 2003).

EMS are comprised of fifteen specific schemas dispersed across five schema domains: *Disconnection/Rejection*, *Impaired Autonomy and Performance*, *Other-Directedness*, *Overvigilance and Inhibition*, and *Impaired Limits*. Briefly, the *Disconnection/Rejection* domain represents the expectation that others will not fulfill one's needs for safety, security, empathy, respect, stability and acceptance. This domain is considered to be a cognitive outcome of childhood maltreatment experiences, including CEA experiences. The *Impaired Autonomy & Performance* domain reflects expectations that one's environment and inability will interfere with successful, effective performance and functioning. The *Impaired Limits* domain refers to difficulty in setting personal boundaries, respecting others' boundaries, and maintaining commitments made to others. *Other-directedness* describes a tendency to excessively focus on the needs and wants of others, often to self-detriment of the individual. Finally, the *Overvigilance and Inhibition*

domain describes the tendency to repress feelings and impulses based on personal rules and beliefs (Young et al., 2003).

Given theory and recent empirical findings, specific EMS domains may mediate of the relationship between CEM experiences and later relationship difficulties, not only due to the overlap between some EMS and attachment-based IWMs, but because EMS domains specify particular cognitive patterns that, when enacted, may negatively impact relationship functioning. For example, thinking patterns consistent with the *Disconnection/Rejection* schema domain (i.e., expectations that others will not fulfill one's needs for safety, security, empathy, respect, stability and acceptance) may manifest in reduced trust and negative behaviors within the romantic relationship, further contributing to lower overall relationship satisfaction. Thus, understanding if, and which, EMS domains mediate the relationship between CEM and reduced relationship satisfaction will help to further explain how CEM engenders risk for specific relationship difficulties. This notion is reflected by Thimm's (2003) recent attempt to match specific interpersonal difficulties to specific schemas and schema domains within a sample of 106 psychiatric outpatients. Results indicated significant overlap between different EMS and maladaptive interpersonal styles, but also provided direct links between maladaptive interpersonal styles and specific EMS domains. For example, findings illustrated that an exploitable interpersonal style was linked to schemas within the *Disconnection/Rejection*, *Overvigilance and Inhibition*, *Impaired Limits*, and *Other-Directedness* schema domains, while a "vindictive" interpersonal style was linked to schemas within the *Impaired Autonomy*, *Impaired Limits*, and *Other-Directedness* schema domains. While not employing a community-based sample, this research does indicate that the enactment of

EMS within interpersonal relationships is related to specific maladaptive interpersonal behaviors (e.g., exploitativeness, vindictiveness), which can be presumed detrimental to romantic relationships.

Childhood emotional maltreatment and EMS. Limited, but increasing, empirical evidence has linked differential EMS endorsement to specific maltreatment experiences. As noted above, certain schema domains (e.g., *Disconnection/Rejection*) are theoretically considered to be cognitive sequelae of childhood maltreatment experiences. Specific to CEA experiences, CEA history has been shown to be predictive of increased overall schema endorsement (Dumitrescu & Rusu, 2012) as well as domain-level and specific schema endorsement, suggesting that experiencing CEA may lead to the development of both a greater number, as well as specific, maladaptive thinking patterns. Previous research has linked CEA experiences to endorsement of schemas within four of the five EMS domains: the *Disconnection/Rejection* domain (i.e., abandonment/instability, defectiveness/shame, emotional deprivation, mistrust/abuse, social isolation/alienation), *Impaired Autonomy and Performance* domain (i.e., vulnerability to harm or illness), *Other-Directedness* domain (i.e., self-sacrifice), and *Overvigilance & Inhibition* domain (i.e., emotional inhibition; Cecero, Nelson, & Gillie, 2004; Crawford & O'Dougherty-Wright, 2007; Dodge Reyome et al., 2010; Messman-Moore & Coates, 2007; O'Dougherty-Wright, Crawford, & Del Castillo, 2009).

Notably, the exact relationships between CEM and EMS endorsement varies between studies and, aside from the overall implication of the four domains noted above, there is no consistent pattern of findings across the CEM literature. For example, according to Young et al. (2003), the *Disconnection/Rejection* schema domain is the

domain conceptually linked with childhood abuse experiences; however, such endorsement has been shown to vary between studies. For example, in sample of 292 undergraduate students, Cecero et al. (2004) found that while CEA predicted the defectiveness/shame, mistrust/abuse, and emotional deprivation schemas, CEA was not predictive of the abandonment/instability schema (all of which are encapsulated within the *Disconnection/Rejection* domain). CEA also was predictive of the emotional inhibition schema (contained within the *Overvigilance & Inhibition* schema domain), and CEN was only found to predict defectiveness/shame and emotional deprivation schemas but none of the other *Disconnection/Rejection* domains (Cecero et al, 2004). Differing from the results of Cecero et al. (2004), O'Dougherty-Wright et al., (2009) found CEA to predict increased schema endorsement on the defectiveness (*Disconnection/Rejection*), vulnerability (*Impaired Autonomy*), social isolation (*Disconnection/Rejection*), and self-sacrifice (*Other-Directedness*) schemas.

EMS and relational outcomes. Given that EMS represent maladaptive models of the self and/or others, romantic relationships are likely central contexts for EMS enactment (Crawford & Wright, 2007). Several studies have attempted to assess this relationship in order to understand how various EMS might impact an individual's overall satisfaction within their relationship (Dumitrescu & Rusu, 2012), as well as reductions in self-reported intimacy (Zolfaghari, Zadeh, & Abedi, 2008) and tendency to divorce (Yoosefi, Etemadi, Bahrami, Fatehizade, & Ahmadi, 2010).

To date, only one published study has assessed the relationship between EMS endorsement and relationship satisfaction. To test the ability of EMS to predict couple satisfaction and mate value within an evolutionary psychology context, Dumitrescu and

Rusu (2012) examined which, if any, specific EMS served as potential predictors for reduced relationship satisfaction among 182 married, predominantly female, students at a Romanian university. Linear regression analyses indicated a decrease in reported satisfaction per one point increase in EMS endorsement. Further, EMS of *Disconnection/Rejection* (i.e., abandonment/instability, defectiveness/shame, emotional deprivation, social isolation/alienation), *Impaired Autonomy and Performance* (i.e., dependence and incompetence, vulnerability to harm), *Other-Directedness* (i.e., approval/recognition seeking, subjugation), and *Overvigilance and Inhibition* (i.e., negativity/pessimism) were associated with reduced satisfaction. Additionally, correlational analyses suggested that greater endorsement of any EMS, except the entitlement/grandiosity schema (*Impaired Limits Domain*), was related to lower valuation of the individual's partner. As evidenced by the impact of increased and specific EMS endorsement on reported relationship satisfaction, results of this study suggest it is important to consider an individual's EMS within the context of romantic relationships. Additional studies have demonstrated that EMS endorsement also impacts other indicators of relationship functioning, including intimacy (Zolfaghari et al., 2008) and intention to divorce (Yoosefi et al, 2010). With regard to reduced intimacy, Zolfaghari et al. (2008) found that the *Impaired Limits* domain (i.e., entitlement/grandiosity; insufficient self-control/self-discipline) served as the best predictor of reduced marital intimacy within a sample of 35 married corporate personnel. Yoosefi et al. (2010) found substantially different EMS endorsement in the comparison of 150 divorcing versus 155 non-divorcing couples. Considering EMS endorsement as an indicator of intent to divorce in a series of discriminant function analyses, results suggested that divorcing couples

were more likely to endorse mistrust/abuse schema, emotional deprivation (both within the *Disconnection-Rejection* domain), and unrelenting standards (*Overvigilance and Inhibition* domain). Individuals who reported EMS of enmeshment (*Impaired Autonomy and Performance* domain) and emotional inhibition (*Overvigilance and Inhibition* domain) were most likely to divorce. While these more specific studies are limited in their ability to separate EMS endorsement as a cause or a consequence of reduced intimacy and intent to divorce, the three studies reviewed above do indicate that EMS endorsement relates to various indicators of reduced relationship functioning and also suggest that specific EMS might relate to specific areas of relationship functioning. Additional support for this notion has been established by studies specifically examining how EMS endorsement mediates the relationship between CEA and varied relational outcomes.

Emotional maltreatment, EMS, and relational outcomes. As noted above, emerging research implicates specific EMS as mediators of the relationship between emotional maltreatment and relationship difficulties, including intimate partner violence (IPV) victimization and perpetration as the outcomes of interest. Given that CEM impacts both perception and behavior within interpersonal relationships, Messman-Moore and Coates (2007) attempted to examine the tendency for women with a history of psychological abuse to be involved in highly conflictive relationships as mediated by EMS endorsement within the *Disconnection/Rejection* schema domain, as this domain is most conceptually associated with childhood maltreatment history. Overall, psychological abuse history was positively correlated with overall EMS endorsement and levels of interpersonal conflict, such that a stronger history of psychological abuse was

associated with increased endorsement of various *Disconnection/Rejection* schemas and with greater interpersonal conflict. Results of individual hierarchical regression analyses utilizing the five schemas within the *Disconnection/Rejection* schema domain indicated three significant mediators: abuse/mistrust, abandonment, and defectiveness/shame. Specifically, abuse/mistrust and abandonment EMS fully mediated the relationship between psychological abuse and interpersonal conflict (i.e., the relationship between psychological abuse and degree of conflict no longer remaining significant), whereas the defectiveness/shame EMS only partially mediated this relationship (i.e., the relationship between psychological abuse and degree of conflict remained significant despite the significant contribution of defectiveness/shame EMS).

Additional lines of research that have supported a mediating relationship between emotional maltreatment, EMS, and relational difficulties have focused on IPV within romantic relationships. To understand how EMS might account for the relationship between CEA experiences and IPV within current romantic relationships, Crawford and O'Dougherty-Wright (2007) examined which EMS, if any, accounted for the relationship between childhood emotional maltreatment and both IPV victimization and perpetration within a sample of 301 college men and women. For the purposes of this study, IPV victimization was defined as experiencing physical, sexual, or emotional abuse perpetrated by a romantic partner, and IPV perpetration was defined as committing physical, sexual, or emotional abuse against a romantic partner. Results indicated that schemas of mistrust/abuse, emotional inhibition (both of the *Disconnection/Rejection* domain), and self-sacrifice (*Other-Directedness* domain) were full mediators of IPV victimization. Notably, different EMS (i.e., mistrust/abuse (*Disconnection/Rejection*),

emotional inhibition (*Overvigilance and Inhibition*), entitlement, and insufficient self-control (*Impaired Limits*) were associated with IPV perpetration.

Taken together, the results of these studies suggest that interpersonal expectations (e.g., a perceived need to inhibit emotional expression around others, expectations that a partner will be abusive, and a willingness to sacrifice for others, as well as a sense of entitlement), theoretically developed as a consequence of emotional maltreatment experiences, are carried forward into romantic relationships. In turn, these expectations impair the individual's ability to identify and appropriately assert their own needs and then effectively negotiate conflict (Crawford & O'Dougherty-Wright, 2007), and manifest in inappropriate and aggressive relationship behaviors. Notably, additional research has also supported the influence of EMS as a mediator of relationship difficulties over other potential mediators. Specifically, within respective samples of 396 and 409 college women, Gay and colleagues (2013) found that of the *Disconnection/Rejection*, *Other-Directedness* schema domains and insecure attachment, only the *Disconnection/Rejection* domain significantly and fully mediated the relationship between CEA history and both IPV victimization and perpetration, when comparing the mediating effects of insecure attachment styles and specific EMS domains. This study suggests that EMS endorsement, indicating interpersonal expectations and perceptions within intimate relationships, may serve as one of the greatest predictors of relationship dysfunction when compared to other childhood-related relationship variables (e.g., insecure attachment).

Reduced Self-Esteem

CEM is consistently linked with more negative self-esteem in both adolescent and adult populations (Briere & Runtz, 1990; Collins & Read, 1990; Hankin, 2005; Mullen et al., 1996, Petric-Jackson et al., 1993). For example, when compared to non-abused controls, undergraduates with a history of CEA tend to report feeling significantly less lovable and likable (Collins et al., 2006). Further, both attachment and schema theory include the notion of the self in relation to others. As noted above, the development of negative IWMs (characterized within insecure attachment and possibly manifested in EMS endorsement) place a maltreated child at risk for viewing the self as inept, worthless, and incapable at managing adult relationships (Riggs, 2010). Furthermore, research has indicated a relationship between self-esteem and insecure attachment, such that high levels of anxious attachment are negatively correlated with self-esteem (Collins et al., 2006). This relationship between reduced self-esteem and other cognitive sequelae of CEM suggests the importance of examining reduced self-esteem as a mediator of the relationship between the CEM experiences and adult relationship functioning.

Given the connection between reduced self-esteem and emotional maltreatment, and the role of self-view in attachment style and EMS endorsement, it may be that reduced self-esteem impacts reduced relationship satisfaction. For example, Swann (1983) has argued that since individuals are motivated to confirm pre-existing conceptions of the self, individuals may seek out relationship partners that reflect pre-existing self-views as a means of establishing coherence within their social environment and current romantic relationship (Swann, Rentfrow, & Guinn, 2003). According to coherence theory, individuals are motivated to confirm pre-existing self-conceptions,

seeking out positive evaluations of positively viewed aspects of the self and negative evaluations of negatively viewed aspects of the self. In this case, one's sense of self dictates whom an individual chooses to form relationships with and further guides the individual's behavior within such relationships. Accurate partner perceptions are sought out in a way to convey a personal sense of "I know myself and my partner knows me as well." Notably, Swann (1983) posited his "self-verification theory" as an explanation for why individuals remain in punitive or abusive relationships, presumably because the partner reflects the individual's negative sense of self.

Studies support the notion that being in self-verifying relationship is associated with increased self-reported commitment (Katz, Beach, & Anderson, 1996; Ritts & Stein, 1995; Swann et al, 1992); however, the robustness of this effect is limited to certain contexts. For example, research has supported that self-verification promotes commitment and satisfaction within married couples (Katz et al, 1996; Ritts & Stein, 1995; Swann et al, 1992; Swann et al., 1994), except when a partner perceives he or she is undervalued by his or her partner. Katz et al. (1996) compared self-verification theory against self-enhancement theory (the notion that individuals seek partners who support or overvalue them) in the prediction of marital quality. Three groups were identified within a sample of 165 married men and women: verified individuals (individual's perception of self and partner agreement on their value), undervalued (individual's perception that their partner undervalued them), and overvalued individuals (individual's perception that their partner overvalued them). Results indicated that self-verification and self-enhancement processes exerted independent effects on marital satisfaction, such that overvalued and verified respondents did not differ in marital adjustment, but undervalued individuals

reported reduced adjustment, satisfaction, and intimacy and also reported increased thoughts of divorce. A similar pattern emerged in a later study by Katz, Arias and Beach (2000) when aiming to test Swann's assertion that self-verification may explain why individuals remain in abusive relationships. Again, the authors tested self-verification vs. self-enhancement processes in prediction of dating outcomes within psychologically abusive relationships. Discrepancies were operationalized as the woman's level of reported psychological abuse victimization and self-reported self-esteem. Results demonstrated greater support for self-enhancement theory, such that heightened psychological abuse was associated with reduced intimacy and relationship stability. However, limited support for self-verification was found when discrepancy scores were examined. Specifically, small discrepancies between psychological abuse and self-esteem were associated with greater intimacy and relationship stability, while greater discrepancies were related to less intimacy and less stability. Based on these two studies, it appears that self-verification processes are more robust within the context of marital, rather than dating, relationships because self-verification tends to relate to different "goals" (e.g., daily functioning vs. ensuring fondness of the partner). Thus, as investment increases, people are more apt to seek self-verification (Swann et al., 1994). Taken together, there appears to be evidence for self-verification phenomena in the prediction of relational commitment and functioning. Given the risk for reduced levels of self-esteem conferred by emotional maltreatment and a desire to seek out a partner who confirms one's self-view, it is important to consider self-esteem as a mediator of the relationship between CEM and relationship satisfaction, as previous findings may not generalize to a sample of women with CEM histories.

Summary

In summary, current theoretical and empirical literature implicates multiple, associated cognitive processes as potential mediators of the relationship between CEM experiences and reduced relationship quality in adulthood. Current theory holds that the cognitive sequelae of emotional maltreatment experiences reach far beyond the initial maltreatment experiences in the form of insecure attachment, the development of EMS, and reduced self-esteem. Accordingly, these psychological sequelae of the parent-child relationship may impact the individual's perceptions and behaviors in later romantic relationships, theoretically acting in concert to diminish relationship quality.

As outlined above, substantial research supports these proposed mediators; however, the current empirical literature is not without limits, leaving the current theoretical model only partially empirically supported. First, while many studies involving these mediators have been reviewed above, these studies vary in their specific findings and in terms of the relational constructs examined. As previously noted within the EMS research, despite common patterns in the implicated schema domains, each of the studies examining EMS within the context of emotional maltreatment and relationship dysfunction reviewed above have implicated various schemas below the domain-level. Similar issues appear with regard to the findings focused on the two forms of insecure attachment (i.e., anxious and avoidant attachment), as the impact of anxious and avoidant attachment have been shown to vary across different relational outcomes. Additionally, many studies have chosen to combine anxious and avoidant attachment into an "insecure attachment" composite, which does not allow for further examination of how outcomes vary by forms of insecure attachment.

Despite idiosyncratic differences leading to gaps in the empirical literature, ongoing research supports previously articulated conceptual models (i.e., Riggs, 2010) and the hypothesized model proposed within the current study, which implicates specific forms of insecure attachment, EMS (EMS domains and specific EMS), and low self-esteem as mediators of the relationship between CEM and romantic relationship dysfunction. Taken together, it is currently known that these mediators seem to possess some explanatory power in the understanding of how CEM confers risk for later difficulties in intimate relationships, but, given separate lines of research, the exact relationships between CEM, relationship satisfaction and these potential mediators is unknown. Given that these mediators are related and likely act in concert to impact relationship functioning, this study aims to examine these mediating concepts simultaneously in order to help understand how the various cognitive sequelae of CEM function to predict relationship functioning by modeling such relationships in a more conceptually accurate and interrelated way.

Chapter 2

RATIONALE AND HYPOTHESES

Rationale

The purpose of the current study is to examine the relative and unique contributions of three types of cognitive mediators of the relationship between CEM and later romantic relationship dysfunction (i.e., insecure attachment, EMS, self-esteem). Given the interpersonal nature of such experiences and the substantial evidence linking CEM to negative interpersonal and romantic outcomes in adulthood cited previously, CEM clearly has significant negative consequences for women later in life. As reviewed previously, several forms of cognitive phenomena have been posited to mediate the relationship between emotional maltreatment and later relationship difficulties, with each of these proposed mediators being supported within their own distinct line of research. However, despite robust associations between these cognitive mediators, studies have yet to examine how these mediators function together to account for the link between CEM and later romantic relationship dysfunction. Such a gap within this literature limits current understanding of how CEM experiences confer risk for later relational difficulties, obscuring understanding of how emotional maltreatment conveys risk for romantic relationship difficulties. Furthermore, the unique contribution of each mediator within the context of others is unknown and it is unclear which of these cognitive mediators serves as the strongest mediator of this relationship.

Given the conceptual theory and empirical evidence linking CEM, relationship difficulties and the proposed mediators, this study plans to test a proposed structural model of these relationships and then compare the strength of the various, significant indirect pathways. Specific mediators under investigation are insecure attachment (i.e., avoidant attachment, anxious attachment), EMS (i.e., *Disconnection/Rejection* and *Other-Directedness*), and self-esteem.

The Hypothesized Models

The current study proposes and tests two mediation models (a partial and a full mediation model, see Figures 2 and 3) which examine the roles of the *Disconnection/Rejection* EMS domain, the *Other Directedness* schema domain, avoidant attachment, anxious attachment, and self-esteem as mediators of the relationship between CEM and reduced relationship functioning. The partial mediation model hypothesizes six pathways: one direct pathway between CEM and current romantic relationship functioning and five indirect pathways linking emotional maltreatment and reduced relationship functioning via the five mediators: *Disconnection-Rejection* schema domain, *Other-Directedness* schema domain, anxious attachment, avoidant attachment, and self-esteem. In contrast, the full mediation model maintains that the five indirect pathways noted above account for the entire relationship between CEM and current relationship functioning. Based on theory and previous research, both models hypothesize that the severity of emotional maltreatment is negatively associated with current romantic relationship functioning. Further, given the likelihood that both behavioral and cognitive mediators account for the overall relationship between emotional maltreatment and

romantic relationship functioning, it is hypothesized that the partial mediation model will provide a better fit to the data compared to the full mediation model.

With regard to the relationship between CEM and the proposed mediators, it is hypothesized that emotional maltreatment will be positively correlated with endorsement of *Disconnection-Rejection* schema domain, *Other-Directedness* schema domain, anxious attachment, and avoidant attachment, while the severity of emotional maltreatment will be negatively associated with self-esteem. That is, increased severity of reported CEM will be associated with increased endorsement of EMS and insecure attachment but reduced self-esteem. With regard to the relationships between the proposed mediators and romantic relationship functioning, it is hypothesized that endorsement of *Disconnection-Rejection* schema domain, *Other-Directedness* schema domain, anxious attachment, and avoidant attachment will be negatively associated with current romantic relationship functioning, while self-esteem will be positively correlated with relationship functioning. Accordingly, increased endorsement of EMS and insecure attachment will be associated with reduced overall relationship functioning, while low self-esteem will be associated with reduced overall relationship functioning. As noted above, it is likely that unassessed relationship behaviors related to the examined cognitive mediators also account for some portion of the relationship between CEM and reduced relationship functioning. Thus, the relationship between CEM and relationship functioning is hypothesized to remain significant even when accounting for the indirect pathways within the model, i.e., partial mediation.

Overall, it is hypothesized that while all mediators will evidence statistically significant correlations with emotional maltreatment and reduced relationship

functioning, only certain pathways will remain significant when considered simultaneously in the model. Based on theory and research, it is believed that the *Disconnection/Rejection* EMS domain will serve as the most robust mediator of the emotional maltreatment-relationship functioning relationship. The *Disconnection/Rejection* EMS domain is hypothesized to be superior to the two *Other-Directedness* EMS schemas (i.e., self sacrifice, subjugation) as, while both have been associated with CEM experiences and romantic relationship dysfunction, the *Disconnection/Rejection* EMS domain has proven to be a stronger predictor of relationship dysfunction (i.e., IPV perpetration and victimization) in women with histories of CEA (cf. Gay et al., 2013).

There is an established association between forms of insecure attachment and EMS endorsement, such that researchers have demonstrated differential schema endorsement based on attachment style (Mason et al., 2005). Further, as noted above, Gay et al. (2013) demonstrated that, when comparing anxious attachment, avoidant attachment and other EMS domains, the *Disconnection/Rejection* EMS domain was the only significant mediator of the relationship between CEA history and IPV. Drawing upon the results of these studies, it is believed that *Disconnection/Rejection* EMS domain will be superior to both of the attachment variables.

With regard to comparisons between attachment styles, it is believed that anxious attachment will serve as a stronger mediator within the model given previous empirical evidence regarding anxious attachment and more negative relationship outcomes. More specifically, while individuals endorsing greater levels of avoidant attachment report increased fear of intimacy (Hazan & Shaver, 1987; Tucker & Anders, 1999), anxious

attachment has been demonstrated as a greater predictor of reduced relationship functioning (Collins & Read, 1990; Kirkpatrick & Davis, 1994; Riggs, 2010) as well as other specific outcomes (e.g., reduced trust; Collins & Read, 1990).

With regard to indirect pathways of attachment and EMS compared to the indirect pathway involving self-esteem, it is hypothesized that the *Disconnection/Rejection* schema domain will remain a more robust predictor in comparison to both of these pathways. First, it is important to consider that self-esteem has yet to be examined within the context of self-reported CEM and romantic relationship functioning. Thus, the only conceptual and empirical evidence from which to base hypotheses stems from research related to self-verification theory (Swann et al., 1994), which has tenuous support throughout the dating and marital relationship literature. In considering how self-esteem may function with the other cognitive mediators, one's view of the self is hypothesized to account for a significant proportion of the variance of relationship functioning, but it is assumed that as with the other mediators, the *Disconnection/Rejection* EMS domain, a more established cognitive mediator representing the individual's view of the self-other relationship, will serve as a stronger predictor of relationship functioning.

Significance

As has been established above, and throughout the relevant literature, CEM confers a substantial risk for adverse outcomes in adulthood, including risk for reduced relationship functioning in adulthood. While the majority of maltreatment research has focused on outcomes of childhood physical (CPA) and sexual abuse (CSA), CEM has been described as the "core issue" underlying maltreatment experiences (Hart & Brassard, 1987, p. 161) and conceptualized as a "unifying concept of child abuse &

neglect” (Hart et al., 2002, p. 79) with studies demonstrating that CEM, particularly CEA, seems to have a greater impact on known negative outcomes when compared to the impact of CPA and CSA (Davis et al., 2001). As reviewed above, there is substantial evidence supporting CEM as a distal risk factor for interpersonal dysfunction and reduced romantic relationship functioning in adulthood (Carnelley et al., 1994; Messman Moore & Coates, 2007), and in recent literature, the more proximal cognitive mediators of EMS, insecure attachment, and self-esteem have been hypothesized to account for a portion of this relationship. It is believed that by hypothesizing and testing partial and full mediation models that simultaneously include these proposed mediators this investigation will help to clarify current conceptualizations of how CEM confers risk for reduced romantic relationship functioning.

In addition to providing information regarding the relationships between, and nature of, each of the mediators being examined, this study expands previous research by including both measures of CEN and CEA and examining the relationship of reduced self-esteem within the prediction of reduced relationship functioning. First, this study focuses on the overall experience of emotional maltreatment, rather than solely CEA. By examining CEM, broadly defined, the effects of both CEA and CEN experiences can be acknowledged and tested. As noted previously, compared to CEA, fewer studies have examined the impact of CEN or emotional maltreatment; however, research has demonstrated that CEN history does negatively impact relationship functioning (Carnelley et al., 1994). Additionally, while EMS and insecure attachment have been demonstrated to individually mediate the relationship between childhood maltreatment and later relationship difficulties, self-esteem has yet to be specifically explored as a

mediator of this relationship. Thus, should self-esteem substantially contribute to the proposed model, this would be the first study specifically implicating self-esteem as a mediator of this relationship.

In addition to the primary aim of determining how these proposed mediators account for relationship dysfunction simultaneously, three additional aims will also be addressed. One additional aim involves the comparison of all significant indirect pathways in order to understand which cognitive mediator provides the greatest amount of explanatory power within the hypothesized model. By testing these pathways against each other, this study may help researchers to understand which mediator provides the greatest explanatory power within the relationship between emotional maltreatment and relationship dysfunction. Testing this will establish a clearer understanding of the most key mediating concepts, suggesting a more parsimonious theoretical model of how CEM experiences confer risk for later romantic relationship functioning and, thus, direct future research by determining more meaningful lines of study in the prevention of later romantic relationship dysfunction and dissatisfaction.

Another aim of the current study is to help understand the differing roles of insecure attachment and EMS in the prediction of current relationship functioning. As noted previously, insecure attachment and EMS have yet to be examined concurrently within a model of CEM and relationship dysfunction. Given the conceptual and empirical overlap between these two concepts, testing the indirect pathways pertaining to these two concepts will help to provide a clearer understanding of which of these two, related concepts best account for current relationship dysfunction.

Lastly, by including measures examining both women's perception of the self-other relationship (represented by insecure attachment and EMS) as well as self-perception only (as represented by self-esteem), this study allows for better understanding of where dysfunction may lie: within one's relationship with the self or one's expectations for the other. Overall, it is hoped that such detailed exploration of the aims reviewed above will serve to generate a more nuanced understanding of the major mediating processes of later relationship dysfunction.

CHAPTER 3

METHOD

Participants

Participants were 576 female students recruited from introductory psychology classes via the research participation pool during the 2014-2015 academic year. Optional participation in the study partially fulfilled a research requirement for students in introductory psychology classes; however, there were alternatives to study participation should a student not wish to participate in any studies. Participants were recruited via the University of Georgia Psychology Department's Sona Systems website, which lists studies available for participation credit. The study was presented to participants as a study of "how childhood experiences affect romantic relationships in adulthood" and listed the study's inclusion criteria. To participate, female students needed to be 18 years of age or older and in a current romantic relationship of at least a 1 month duration. All study recruitment materials and procedures were approved by the University of Georgia IRB.

Measures by Construct

Childhood Emotional Maltreatment

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) is a 28-item retrospective measure of experiences of childhood maltreatment prior to age 18, including CSA, CPA, CEA, CEN, and CPN. Participants are asked to evaluate a series of statements assessing the frequency of parental acts on a scale of 1 (never true) to 5 (very

often true). The CTQ predominantly serves as a measure of emotional maltreatment; however, CSA and CPA scales were also scored for possible use as covariates. An example of a CEA-related statement is “People in your family said hurtful or insulting things to you,” while an example of a CEN-related statement is “There was someone in my family who helped me feel that I was important or special” (reverse-scored).

The measure’s five-factor structure has been supported and the CTQ has evidenced moderate to high internal consistency ($\alpha = .66 - .92$) and appropriate test-retest reliability ($r = .79 - .86$) over a period of four months (Bernstein et al., 2003; Scher, Stein, Asmundson, McCreary, & Forde, 2001) within both clinical and non-clinical samples of adults and adolescents. Furthermore, the convergent validity of the CTQ has been demonstrated with clinician and therapist interview ratings of childhood maltreatment (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein & Fink, 1998; Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995). For example, Bernstein and Fink (1998) found the correlation between clinician ratings of abuse and the CTQ emotional abuse subscale was .42 within a sample of substance users. Within the current study, all scales demonstrated adequate to strong internal consistency, varying by scale CEM (i.e., CEA+CEN) composite: $\alpha = .90$, CSA: $\alpha = .94$, CPA: $\alpha = .72$, CPN: $\alpha = .62$).

Adult Attachment Style

The Experiences in Close Relationships Scale (ECR-R; (Fraley, Waller, & Brennan, 2000) is a 36-item questionnaire designed to assess an individual's level of insecure attachment within two scales: anxious attachment and avoidant attachment. Participants are asked to respond to statements concerning how they generally feel in emotionally intimate relationships. Items 1-18 correspond to attachment-related anxiety,

while items 19-36 correspond to attachment-related avoidance. Participants are asked to respond to each statement by indicating how much he or she agrees or disagrees with the statement by selecting a number on a 7- point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores on the Anxiety and Avoidant subscales indicate higher levels of attachment anxiety and attachment avoidance, respectively.

The ECR-R was derived via item-response theory utilizing the majority of the questions from previously developed measures of adult attachment (Fraley et al., 2000), meaning that the ECR-R contains similar and identical items used in earlier scales, including the original Experiences in Close Relationships questionnaire (Brennan, Clark, & Shaver, 1998) and the Adult Attachment Questionnaire (Simpson, Rholes, & Nelligan, 1992). Notably, while previous scales have only accurately identified individuals with high levels of anxious and avoidant attachment, the items included in the ECR-R have been shown to provide differentiation between individuals with varying (i.e., high, moderate, and low) levels of attachment anxiety (Fraley et al., 2000). Additionally, compared to the Adult Attachment Questionnaire, the ECR-R demonstrates more exact estimates of latent attachment across the entire range (Fraley et al., 2000).

The ECR-R evidences adequate internal consistency for both scales across undergraduate samples ($\alpha = .90$; Sibley, Fischer, & Liu). Further, the two-factor structure of this measure is supported by results of both exploratory and confirmatory factor analyses, which confirmed the two orthogonal continuous attachment dimensions (Anxiety and Avoidance; Sibley et al., 2005; Sibley & Liu, 2004). ECR-R results also demonstrate high temporal stability across a 6-week time period, as indicated by appropriately equal fit, with 86% of the variance in the latent factors accounted for at

time two and test-retest correlations of approximately .90 (Sibley & Liu, 2004). Previous research has also demonstrated the anxiety and avoidant subscales of the ECR-R to have convergent validity with diary ratings of experienced anxiety and avoidance during interactions with romantic partners. Specifically, within romantic interactions, the ECR-R predicted more of the variance in avoidance, anxiety, and enjoyment in interaction compared to another measure of attachment (i.e., Relationship Questionnaire; Bartholomew & Horowitz, 1991). Supporting the discriminant validity of the ECR-R, the ECR-R also accounted for a greater proportion of the variance in romantic interactions compared to interactions with family members and friends (Sibley et al., 2005). Both the anxious attachment and avoidant attachment subscales of the measures demonstrated strong internal consistency within the current sample (anxious attachment scale: $\alpha = .93$; avoidant attachment scale: $\alpha = .94$).

Early Maladaptive Schemas

The Young Schema Questionnaire-Short Form (YSQ-SF; Young & Brown, 1994). Endorsement of the *Disconnection/Rejection* and *Other-Directedness* schema domains will be measured using the YSQ-SF. The scale items of the YSQ-SF are comprised of statements about how a participant might perceive his or her life experiences and correspond to 18 schemas, which comprise the five schema domains outlined by Young (1994). Participants rate each statement on a 6-point scale ranging from 1 (completely untrue of me) to 6 (describes me perfectly). The YSQ-SF was developed in order to address issues due to the length (i.e., completion time, consistency of answers) of the 205-item YSQ-Long Form (Young, 1998). The YSQ-SF was developed based on the results of a factor analysis conducted within a clinical sample by

Schmidt, Joiner, Young, & Telch (1995) and is comprised of the five highest loading questions for each schema.

Overall, the YSQ-SF is robust in Western clinical and community populations (Oei & Baranoff, 2007). The YSQ-SF has demonstrated adequate test-retest reliability (r 's ranging from .50 - .82) and overall internal consistency ($\alpha = .83 - .96$) in both adult and undergraduate samples (Schmidt et al., 1995). Additionally, the overall factor structure of the YSQ-SF has been tested within clinical samples and has demonstrated a sound factor structure (Baranoff, Oei, Kwon, & Cho, 2006; Hoffart, Sexton, Hedley, Want, Holthe, Haugum, & Holte, 2005; Welburn, Coristine, Dagg, Pontefract, & Jordan 2002).

Only the *Disconnection/Rejection* and *Other-Directedness* schema domain scales were utilized for the current study. In previous studies, the *Disconnection/Rejection* and *Other-Directedness* domains exhibiting good internal consistency ($\alpha = .96$ and $.85$, respectively; Schmidt et al., 1995). Within the current sample, the *Disconnection/Rejection* schema domain demonstrated strong internal consistency ($\alpha = .95$), while the *Other-Directedness* schema domain did not evidence a strong factor structure. Despite an initial alpha of $.83$, the highest intercorrelation between the two *Other-Directedness* subscales was $.30$, while within the scales the highest correlations were $.70$. Given this, a follow-up exploratory factor analysis was conducted. Results (see Results section below) indicated adequate internal consistency of the two scales that comprise the *Other-Directedness* schema scale (Subjugation: $\alpha = .83$; Self-Sacrifice: $\alpha = .87$). Thus, as described below, the measurement and structural models were modified in order to separate the *Other-Directedness* schema scale into its two component scales.

Self-Esteem

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a 10-item unidimensional measure that is considered to measure global self-worth. Participants are asked to indicate how much they agree with each statement regarding their personal perception of self-worth on a 4-point scale ranging from 0 (strongly disagree) to 3 (strongly agree). The RSES contains an equal number of positively and negatively worded items, and total scores range from 0 to 30, with scores below 15 suggesting low self-esteem.

The RSES has demonstrated excellent reliability and validity within a variety of adolescent and adult populations (Baumeister, Campbell, Krueger, & Vohs, 2003; Corcoran & Fischer, 1987). An examination of the overall factor structure of the RSES demonstrated the measure is essentially invariant across 53 nations (Schmitt & Allik, 2005). Previous studies have reported internal consistency for the RSE with α ranging from .72 to .88 (Gray-Little et al., 1997; Robins, Hendin, Trzesniewski, 2001) and split-half reliabilities of approximately $\alpha = .80$ (Schmitt & Allik, 2005). The RSES also demonstrates appropriate test-retest reliability (mean $r = .69$; Robins et al., 2001). The overall validity of the RSES has been supported through studies examining how the RSES performs with, and compares to, other measures of self-esteem, as well as other constructs thought to be related to self-esteem. For example, the RSES demonstrates strong concurrent correlations with a single-item measure of self-esteem (r 's ranging from .72-.76) across men, women, Caucasians, African Americans, Asians, and Latinos, supporting the convergent validity of the RSES. In contrast, the RSES correlates only moderately ($r = .62$) with the Texas Social Behavior Inventory (Helmreich & Stapp,

1974), a measure of social, rather than global self-esteem (Robins et al., 2001). Further, when examining domain-specific self-evaluations (e.g., intelligence, social skills, athletic ability, physical attractiveness), total score on the RSES is related, but not equivalent, to domain specific self-evaluations (r 's ranging from .10-.31; Robins et al., 2001).

Regarding the discriminant validity of the RSES, total scores are not related to demographic variables (e.g., socioeconomic status, age, and academic outcomes (e.g., SAT scores, high school and college GPA, attrition); Robins et al., 2001). Within the current study, the RSES demonstrated strong internal consistency ($\alpha = .93$).

Romantic Relationship Functioning

The Modified Interpersonal Relationship Scale (mIRS; Garthoeffner, Henry, & Robinson, 1993) is a 49-item questionnaire that aims to assess the overall quality of a current relationship, as well as six specific domains associated with overall relationship quality (trust, self-disclosure, genuineness, empathy, comfort, and communication). Participants are asked to rate their agreement with each statement about their current relationship on a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The six subscales may be individually summed and examined, or all items can be summed to obtain a total score assessing overall relationship functioning. Higher scores indicate better relationship quality. Examples of statements on the mIRS include “My partner can be counted on to do what he/she says he/she will do” (trust subscale) and “My partner really cares what happens to me” (genuineness subscale). Notably, the mIRS only differs from its predecessor (The Interpersonal Relationship Scale; Guerney, 1977) by three questions, each removed from the original trust, empathy, and communication

subscales, two due to low factor loadings with their proposed construct and a third due to concerns regarding the conceptual validity of the item (Garthoeffner et al., 1993).

All subscales of the mIRS ($\alpha = .71 - .91$; Garthoeffner et al., 1993) and the total scale score ($\alpha = .96$; Davis et al., 2001) demonstrate appropriate internal consistency. Both the original IRS (Guernsey, 1977; Sloan & L'Abate, 1985) and the mIRS (Garthoeffner et al., 1993) total score and subscales demonstrate convergent validity with related measures (Guernsey, 1977; Sloan & L'Abate, 1985; Yarborough, 1983), including the "Conflict Resolution" subscale from the Premarital Personal and Relationship Evaluation Inventory (Fournier, Olson, & Druckman, 1983). Schlein (1971) demonstrated concurrent validity of the IRS with the Premarital Communication Inventory ($r = .69$; Bienvenu, 1975), the Primary Communication Inventory ($r = .79$; Navran, 1967), and both the "self" ($r = .79$) and "other" ($r = .70$) subscales of the Relationship Scale. Further, the IRS has been utilized to establish the concurrent validity of other scales, including the Miller Social Intimacy Scale (.71; Miller & Lefcourt, 1982) and six subscales of the Sharing of Hurts Scale (r 's ranging from .62 - .77; Stevens & L'Abate, 1989). The original IRS has good test-retest reliability within a sample of 20 married couples ($r = .92$; Rappaport, 1976). Lastly, the IRS has been used to evaluate the effectiveness of relationship enhancement programs for premarital or marital couples (Gordon & Waldo, 1984; Guernsey, 1977; Jessee & Guernsey, 1981; Rappaport, 1976; Ridley, Jorgensen, Morgan, & Avery, 1982; Ross, Baker, & Guernsey, 1985; Schlein, 1971). The mIRS demonstrated strong internal consistency within the current study ($\alpha = .96$).

Procedure

As previously described, female participants were recruited from the research participation (RP) pool of The University of Georgia. Once participants chose to enroll in the study, they completed an online survey via Qualtrics survey software. Informed consent was obtained online prior to completing the questionnaires described above. Following completion to the survey, participants read debriefing information explaining the purpose of the current study.

Data Analytic Plan

Structural equation modeling was performed using MPLUS software to examine the proposed models and study hypotheses, utilizing the two-step approach to model testing (Anderson & Gerbing, 1988). This approach required initial testing of the measurement model utilizing confirmatory factor analysis (CFA) to examine model fit of the latent variables and their proposed indicators, followed by examination of the structural model. Use of this two-step process provided several benefits, such as being able to identify the amount of model misfit that is due to the measurement model and the amount that is due to the structural model.

Latent constructs and corresponding indicators. The proposed measurement model with latent variables and their indicators is depicted in Figure 1. Within the proposed model, CEM, the EMS domains of *Disconnection/Rejection* and *Other-Directedness*, anxious attachment, avoidant attachment, self-esteem, and self-reported relationship functioning served as the latent variables. Items from the CEA and CEN subscales of the CTQ were used to indicate a history of CEM. The EMS domains of *Disconnection/Rejection* and *Other-Directedness* were indicated, respectively, by the

domains' five (i.e., abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness/shame, social isolation/alienation) and two (i.e., subjugation, self-sacrifice) subscales. Anxious and avoidant attachment latent variables were indicated by each of their respective 18 items on the ECR-R. Self-esteem was indicated by the ten RSES items. Lastly, the five subscales of the mIRS (i.e., trust, self-disclosure, genuineness, empathy, comfort, communication) served as indicators of current relationship functioning.

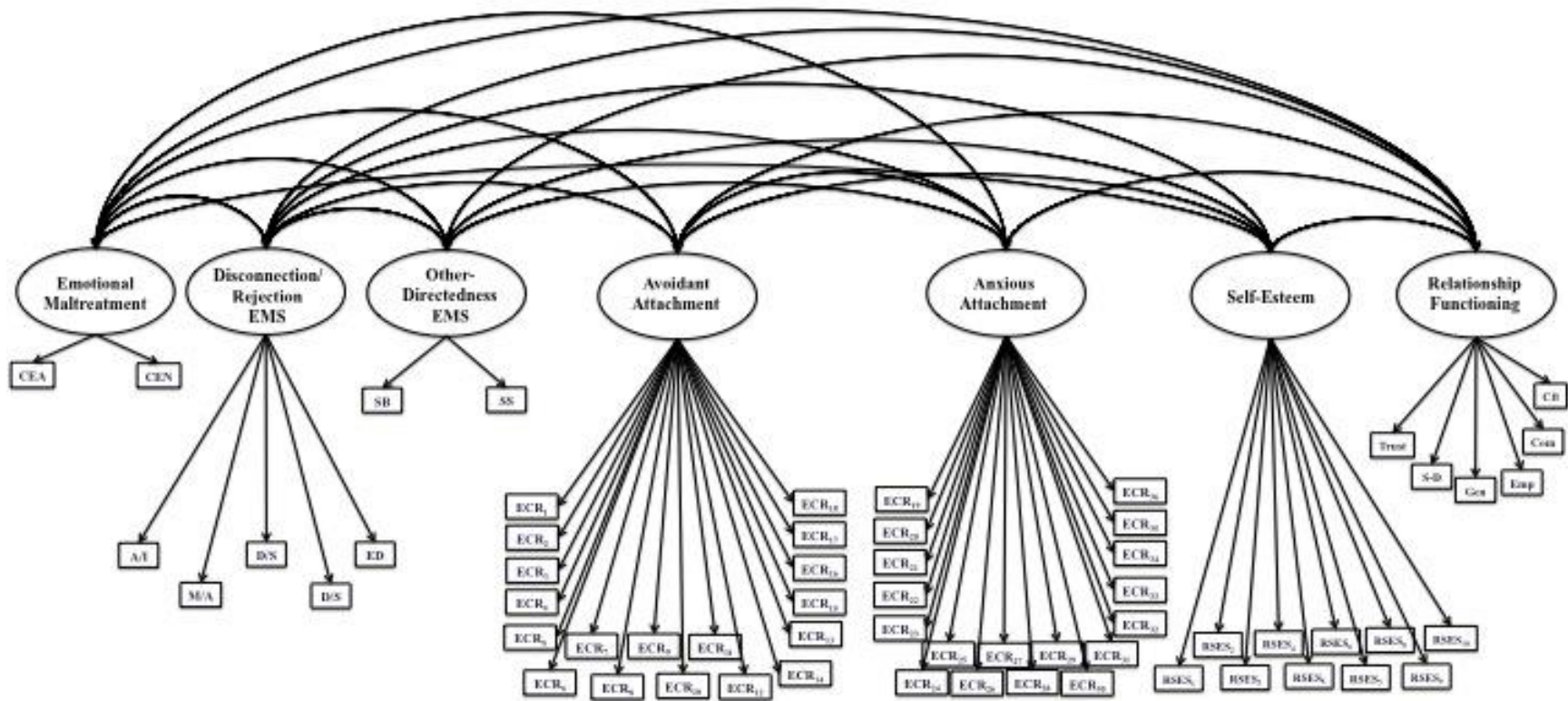


Figure 1. The proposed measurement model of the latent variables and corresponding indicators. As indicated by the curved arrows, all connecting latent variables were assumed to intercorrelate based on conceptual and empirically supported interrelations between the latent variables.

Specification of the measurement model. Confirmation of the measurement model provides support for the construct validity of each measure. To determine how well the individual items measured their respective latent variables, a measurement model that estimated all of the latent variables and their intercorrelations was tested. This allowed for the examination of both the overall fit of the measurement model and the individual factor loadings for each of the constructs of interest.

Within the measurement model, each of the proposed indicators was specified to load on only one factor. As noted throughout the introduction, many of the latent variables and their proposed indicators are related and are thus, strongly correlated; however, it can be assumed that, if the indicators are truly reflective of the latent variables they represent, indicators will correlate most highly with their respective latent variable (Kline, 2010). It was also assumed that all measurement error terms were uncorrelated. All latent factors were allowed to correlate freely within the model. With regard to the number of required indicators, standard guidelines argue for at least two indicators per latent variable (Bollen, 1989), which is established within the current model. Multiple fit indices (i.e., the χ^2 statistic, the root mean squared error of approximation (RMSEA), the standardized root mean square residual (SRMR), the Tucker-Lewis Index (TLI), and the comparative fit index (CFI)) were examined in order to assess the fit of the measurement model (Vandenberg & Lance, 2000).

The chi-square statistic represents the discrepancy between the implied covariance matrix and the observed matrix between the population-based model and the observed model. It is the only statistic that allows for testing of the null hypothesis with regard to the inferred population estimate and the observed parameter estimates within

the current sample and provides a distribution in order to do so. Once calculated, a non-significant chi-square statistic indicates the observed model provides an adequate fit to the data, while a significant chi-square is likely representative of model misspecification (Tanaka, 1993). While a significant value cannot directly identify where a model misspecification may exist, the chi-square statistic does allow the researcher to separate sample error from fit error, providing direction for the current issues regarding error within the specified model. Unfortunately, the chi-square statistic requires a large sample size to test the specified measurement model, creating a paradox for the researcher, such that a larger sample is required for sufficient power to test the model, but as sample size increases it is more likely that negligible amounts of model misfit will result in a significant chi-square statistic (Kline, 2010; Vandenberg & Lance, 2000).

Given the paradox described above, two additional absolute fit indices, the RMSEA and the SRMR, were incorporated. RMSEA is indicative of the discrepancy between the observed and implied population model with regard to the residual error left over in the model, thus, RMSEA describes how the model chi-square statistic differs from the expected value. The RMSEA is set based on its own non-normal distribution and the fit index is presented within a confidence interval. If the confidence interval is narrow, stronger support is provided for the postulated model and also allows for more stringent tests of model fit because a greater amount of support is afforded to the plausibility of the model (Hu & Bentler, 1999; Kline, 2010). RMSEA values range from 0 to 1 with smaller values suggesting a better model fit. Given this, the recommended conservative cutoff statistic involves values no greater than .06 (Hu & Bentler, 1999). Similar to the RMSEA fit index, the SRMR allows for examination of residual variances

and describes the average discrepancy between an observed correlation and the implied model correlation. It is recommended that the SRMR (with a cutoff of $< .08$) be used in combination with additional fit indices as a better test of model fit (Hu & Bentler, 1999).

Two incremental or relative fit indices were also incorporated: the TFI and the CFI. These relative fit indices compare the hypothesized model to a baseline null model (which hypothesizes zero correlations among the variables), providing model fit statistics that are free of estimation bias. Similar to the CFI, the TLI compares the hypothesized measurement model chi-square to a baseline model chi-square to determine if the hypothesized model provides a better fit. Both indices are normed within a 0 to 1 interval with recommended cutoffs of .90 or greater (Hu & Bentler, 1999). While similar, the CFI and TLI vary in specific ways, which requires the inclusion of both indices. For example, the TLI fit index represents a population-based estimate, while the CFI provides sample-based statistics. Additionally, the TLI tends to be sample size independent, meaning that their estimates generally demonstrate invariance across different sample sizes, while the CFI does not. Also, noteworthy, the TLI is a parsimony-based statistic, which favors more simplistic models over more complex models. Given these differences, assessing the differential pattern of these fit indices is helpful in understanding where issues with one's model fit may lie depending on the individual idiosyncrasies of the particular index (Kline, 2010; Tanaka, 1993; Vandenberg & Lance, 2000).

The benefit of using the two-step approach to model testing is that testing measurement model fit through confirmatory factor analysis (CFA) supports the reliability of the indicators used for each latent variable. As noted above, results of the CFA for the attachment latent variables, and the *Other-Directedness* schema domain

indicated low internal consistency when the proposed measurement model was tested. Given this, steps to re-specify and test a revised measurement model based upon exploratory factor analyses (EFA), model residuals, and modification indices was undertaken. (Anderson & Gerbing, 1988; Kline, 2010). Results regarding the testing of the proposed measurement model and the re-specified model are described in Chapter Three.

Specification of the structural model and testing of mediation hypotheses. In order to establish mediation, a saturated mediated model, representing the theoretical partial mediation model (Figure 2) was compared to the overall measurement model (Figure 1), and a nested model chi-square difference test was used to determine if this theoretical model fit as well as the measurement model. Following, as an overall test of full mediation, the full mediation model (Figure 3) and the partial mediation model were compared for model fit. The partial mediation model specifies that CEM (the exogenous latent variable) affects current relationship functioning (the outcome variable) both directly and indirectly (through the proposed mediators), whereas the full mediation model specifies the same indirect pathways as the partial mediation model, but does not specify a direct relationship between CEM and current relationship functioning.

Following confirmation of the best fitting structural model, significant mediators were determined and tests of indirect effects of significant mediating pathways were conducted (Anderson & Gerbing, 1988). Based on the criteria set forth by Baron and Kenny (1986), variables were considered significant mediators of the relationship between CEM and relationship functioning if the mediator evidenced significant path coefficients from the independent variable (CEM) to the mediator (the a path) and from

the mediator to the outcome variable (relationship functioning; the b path). Follow up comparisons of the indirect effects of significant mediators provided information about the change in chi-square between mediating pathways (Hoyle, 1995) and allowed for examination of secondary aims to establish the strongest mediator of the relationship between CEM and relationship functioning. As hypothesized above, it was believed that the EMS of *Disconnection/Rejection* would account for the greatest amount of variance in the relationship between CEM and relationship functioning.

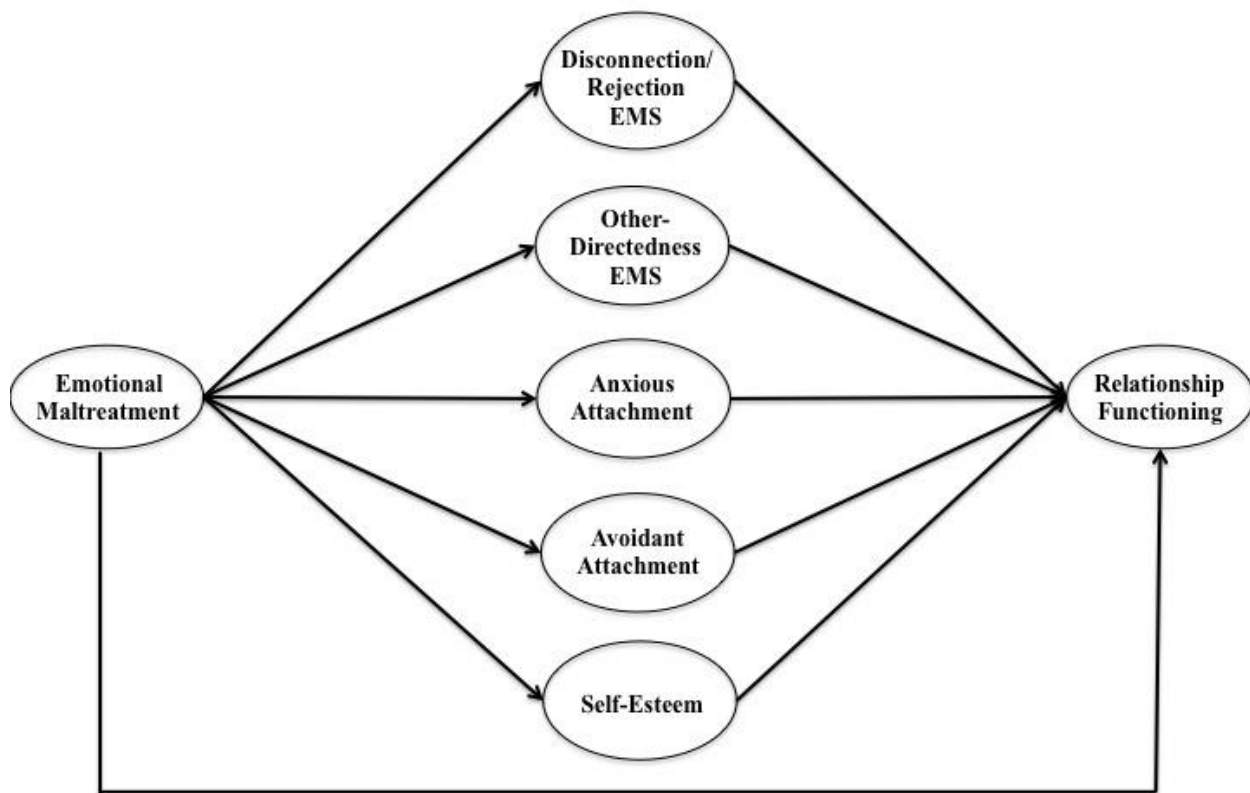


Figure 2. The proposed saturated structural model. This model examines a theoretical partial mediation of the relationship between childhood emotional maltreatment and relationship functioning.

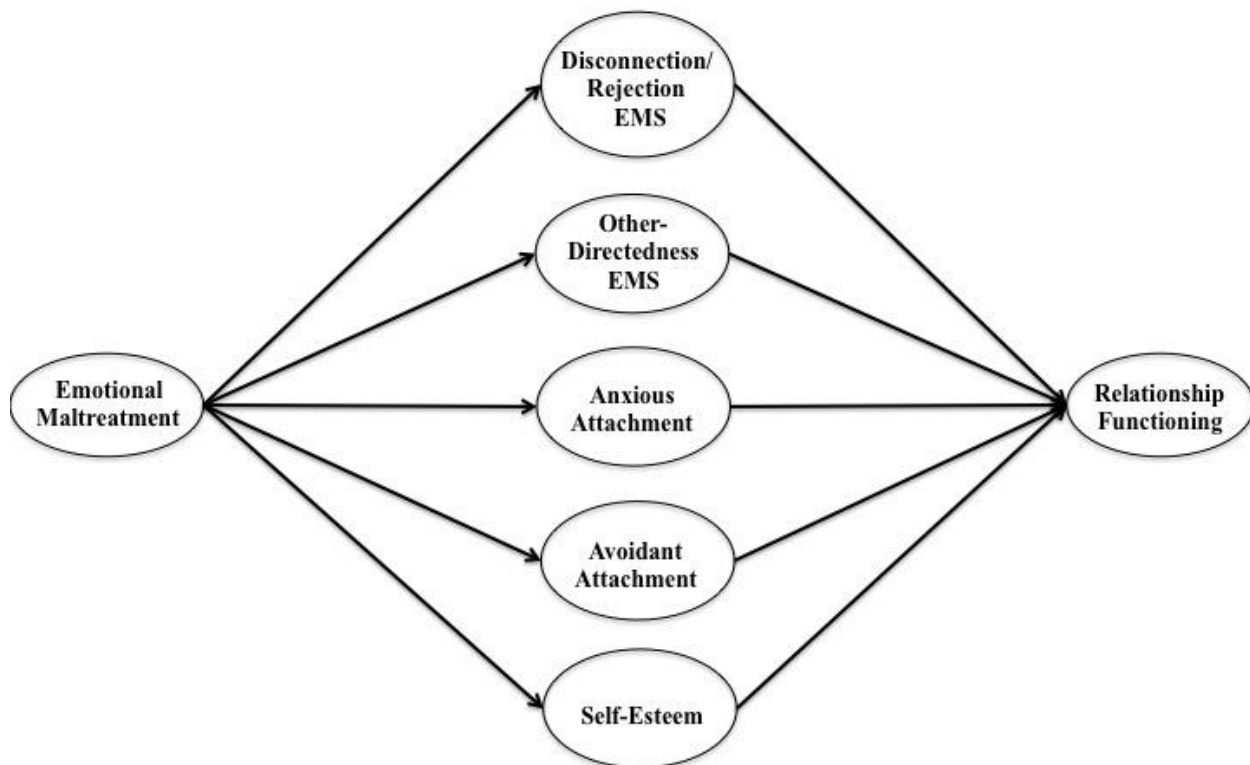


Figure 3. The proposed full mediation model. This model was compared to the partial mediation model and hypothesizes childhood emotional maltreatment has an indirect effect on relationship functioning through the proposed mediators, but no longer includes a direct relationship between childhood emotional maltreatment and relationship functioning.

Covariates. Previous empirical research indicates comorbidity amongst different forms of childhood maltreatment (cf. Hankin, 2005) and supports the notion that maltreatment experiences outside of CEM also impact the development of attachment (Hankin, 2005), EMS (Roemmele & Messman-Moore, 2011; Young et al., 2003), and self-esteem (Mullen et al., 1996), as well as reported romantic relationship functioning (Davis et al., 2001; DiLillo et al., 2007; Paradis & Boucher, 2010). Also, to ensure that effects were not due to the length of current relationship, length of current relationship was also included as a covariate. To reduce the likelihood of effects due to unexamined variables, initial path analyses were conducted to assess the effect of common correlates (i.e., childhood sexual abuse, childhood physical abuse, childhood physical neglect, length of current relationship) on the variables included within proposed structural model. In order to examine this impact, romantic relationship functioning was regressed on current relationship length, CSA, CPA, and CPN, and the three sets of cognitive mediators (i.e., attachment, self-esteem, and EMS) were regressed on CSA, CPA, and CPN. Significant relationships were included in the tested structural models.

Missing Data. Following exclusion of participants who were missing greater than 10% of their data on the key study variables ($n=118$), maximum likelihood (ML) imputation methods were used to account for any additional missing data. Maximum likelihood methods are thought to be superior to other techniques (e.g., listwise and pairwise deletion) as ML imputation is generally unbiased and robust against small to moderate violations of normality (Newman, 2009). Further, ML imputation has

demonstrated less risk of convergence failure (Enders & Bandalos, 2001) and may be applied to different forms of missing item (i.e., scale-level vs. item-level missing data; Newman, 2009).

CHAPTER 4

RESULTS

Sample Characteristics

The mean age of the 576 study participants was 19.32 years ($SD = 1.42$). The majority of participants self-identified their racial/ethnic background as Caucasian ($n = 432$; 75.0%), 56 (9.7%) Asian, 46 (8.0%) African American, 22 (3.8%) Hispanic, and 17 (3%) reported a racial/ethnic background that did not fall within the previous categories (“other”). Of the total sample of participants, approximately 352 (61.1%) and 350 (61.0%) endorsed “mild” or greater CEA and CEN histories, respectively, based on norms provided by Bernstein and Fink (1998). With regard to the range of reported CEA experiences, 71.1% ($n = 409$) reported low to minimal CEA experiences, 17.0% ($n = 98$) reported minimal to moderate CEA experiences, 6.6% ($n = 38$) reported moderate to severe CEA experiences, and 5.4% ($n = 31$) reported severe to extreme CEA experiences. With regard to CEN experiences, 76.0% ($n = 436$) reported low to minimal CEN experiences, 15.7% ($n = 90$) reported mild to moderate CEN experiences, 4.9% ($n = 28$) reported moderate to severe CEN experiences, and 3.5% ($n = 20$) reported severe to extreme CEN experiences. Participants reported experiencing other forms of childhood maltreatment in addition to CEA and CEN. On average, the majority of the sample reported low to minimal childhood sexual abuse (CSA, $M = 5.6$) and childhood physical abuse (CPA, $M = 6.5$) experiences, and low to moderate childhood physical neglect experiences (CPN, $M = 9.4$).

With regard to sexual orientation, the majority of participants ($n = 517$, 89.8%) endorsed an “exclusively heterosexual” sexual orientation, while 0.7% ($n = 4$) reported an “exclusively homosexual” sexual orientation and 9.1% ($n = 53$) reported a sexual orientation ranging between “mostly heterosexual” to “mostly homosexual” orientation. This was reflected by participants’ reports of current partner gender, with 96.9% ($n = 558$) reporting currently dating a male partner, 2.6% ($n = 15$) currently dating a female partner, and 0.5% ($n=3$) currently dating a transgender or “other” gender category. The average length of participants’ current romantic relationship was 16.02 months ($SD = 15.39$) in duration. While the measure of current relationship functioning (i.e., the mIRS) does not have empirically devised cutoffs or categories for relationship functioning, on average, participants reported high relationship functioning ($M = 198.16$, 81% of scale maximum).

Means, standard deviations, and intercorrelations for all relevant study variables are displayed in Table 1. CEM was significantly correlated with all variables of interest except anxious and avoidant attachment (i.e., Rejection Disconnection, the two Other-Directedness schemas: subjugation, self-sacrifice, and with self-esteem and relationship functioning). Current relationship functioning was significantly correlated with all variables except the self-sacrifice schema, anxious attachment, and avoidant attachment. Hypotheses regarding intercorrelations were mostly supported. CEM was significantly related to *Disconnection/Rejection*, both Other-Directedness schema domains, self-esteem, and relationship satisfaction in the expected directions. Further, the *Disconnection/Rejection* schema domain, the subjugation schema of *Other-Directedness*, and self-esteem were correlated with current relationship functioning in the expected

directions. Contrary to hypotheses, anxious and avoidant attachment were not significantly correlated with CEM, self-reported relationship functioning or any other key study variables.

Table 1
Means, Standard Deviations, Bivariate Correlations, and Internal Consistency of Study Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Childhood Sexual Abuse	5.64	2.65	<i>.94</i>											
2. Childhood Physical Abuse	6.49	2.52	.33**	<i>.72</i>										
3. Childhood Physical Neglect	5.98	2.06	.28**	.50**	<i>.62</i>									
4. Length of Relationship	16.02	15.39	-.06	-.01	-.04	<i>1.00</i>								
5. Childhood Emotional Maltreatment	15.64	6.92	.30**	.49**	.55**	-.02	<i>.90</i>							
6. Disconnection/Rejection	54.38	21.88	.34**	.34**	.33**	-.12**	.63**	<i>.95</i>						
7. Subjugation (OD)	10.32	5.05	.30**	.21**	.17**	-.09	.40**	.68**	<i>.83</i>					
8. Self-Sacrifice (OD)	17.94	4.97	.04	.04	.03	-.07	.09**	.17**	.25**	<i>.87</i>				
9. Anxious Attachment	56.98	21.13	-.04	-.02	.01	.01	.01	-.01	-.01	.00	<i>.93</i>			
10. Avoidant Attachment	42.33	17.75	-.11**	-.04	-.05	-.05	.01	-.03	.00	.04	.54**	<i>.94</i>		
11. Self-Esteem	21.31	6.17	-.21**	-.20**	-.26**	.04	-.49**	-.70**	-.59**	-.07	.01	-.01	<i>.93</i>	
12. Relationship Functioning	198.16	29.70	-.21**	-.30**	-.28**	.21**	-.41**	-.54**	-.42**	-.03	-.01	.00	.38**	<i>.96</i>

Note. N = 576. * = $p < .05$; ** = $p < .01$. Table variables reflect those latent variables tested within the final measurement and structural models. Internal consistencies (Cronbach's α) italicized along the diagonal. Length of relationship presented in months.

Assessment of Covariates

As noted above, four variables (i.e. childhood sexual abuse, childhood physical abuse, childhood physical neglect, and length of current relationship) were considered as possible covariates within the current model based on theory and prior research. In order to test the most parsimonious models, path analyses were conducted prior to testing the measurement and structural models. Given that other abuse experiences may impact the development of insecure attachment, early maladaptive schemas, self-esteem, and current relationship functioning, all proposed mediators and relationship functioning were regressed on CEM, CSA, CPA, and CPN. Current relationship length was regressed on current relationship functioning.

Standardized beta weights for the path model are displayed in Table 2. With regard to abuse history, results indicated that in addition to CEM, CSA predicted increased endorsement of the *Disconnection/Rejection* schema domain ($\beta = .35, p < .001$), avoidant attachment ($\beta = -.04, p = .01$), and self-esteem ($\beta = -.02, p = .02$), while both CSA ($\beta = .08, p < .001$) and CPN ($\beta = -.05, p = .02$) predicted endorsement of the *Other-Directedness* subjugation schema. With regard to current relationship functioning, CPA ($\beta = -.25, p = .01$) and current relationship length ($\beta = .06, p < .001$) were predictive of current relationship functioning. Based on these results, CSA, CPN, CPA, and current relationship length were included in the structural models where relevant.

Table 2. Standardized Beta Weights for the Path Analysis to Determine Covariates

Predictor Variables	Dependent Variables						
	Rejection/ Disconnection	Subjugation (OD)	Self- Sacrifice (OD)	Anxious Attachment	Avoidant Attachment	Self Esteem	Current Relationship Functioning
CSA	.35**	.08**	.01	-.02	-.04*	-.02*	.08
CPA	.04	-.002	.002	-.01	-.01	.02	-.25**
CPN	-.16	-.05*	.002	.01	-.03	.01	-.15
Relationship Length	--	--	--	--	--	--	.07**

Note. Row variables affect column variables. * $p < .05$; ** $p < .01$. CSA = childhood sexual abuse, CPA = childhood physical abuse, CPN = childhood physical neglect.

Structural Equation Modeling

As described above, the current study utilized a two-step approach to model testing (Anderson & Gerbing, 1988). First, the measurement model was estimated to ensure the appropriate measurement of key study variables. Following necessary revisions to the measurement model (described below), the two proposed structural models with added covariates were tested utilizing maximum likelihood estimation in MPlus, version 7.2. As described previously, criteria for acceptable model fit were a root mean squared error of approximation (RMSEA) no greater than .06, a standardized root mean square residual (SRMR) with a cutoff of .08 or less, a Tucker-Lewis Index (TLI) and comparative fit index (CFI) greater than or equal to .90. The chi-square (χ^2) difference test was used to compare models. All model fit statistics for the measurement and structural models are displayed in Table 3.

Table 3. Model Fit Indices

Model	df	χ^2	AIC	BIC	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$
Measurement Model 1	2116	5970.92	129063.80	130061.30	.84	.83	.06	.05	
Measurement Model 2	2051	5750.88	125858.20	126842.70	.84	.84	.06	.05	
Structural Model - Partial Mediation	2304	6167.61	138040.60	139134.00	.84	.83	.05	.05	
Structural Model - Full Mediation	2305	6172.13	138043.20	139132.20	.84	.83	.05	.05	4.52*

Note. * $p < .05$. $N = 576$.

Measurement Model. As noted above and indicated in Table 1, the indicators for all latent variables, except the Other Directedness schema domain, evidenced appropriate to strong internal consistency, and the proposed measurement model (Figure 1) resulted in good model fit ($\chi^2 = 5970.92$, $df = 2116$, CFI = .84, TLI = .84, RMSEA = .06, SRMR = .05). Factor loadings for the first measurement model are summarized in Table 4.

When examining factor loadings for the proposed measurement model, approximately five manifest indicators for the *Other-Directedness* schema domain evidenced strong factor loadings on the latent construct, while the other five evidenced lower factor loadings (Table 4). Given that on the YSQ-SF, *Other-Directedness* is indicated by two separate schemas, subjugation and self-sacrifice, an exploratory factor analysis utilizing maximum likelihood estimation and oblique rotations indicated a two-factor solution was best, with the first five indicators loading strongly onto the subjugation schema and the second five loading strongly on the self-sacrifice schema (see Table 5). These two factors were moderately correlated ($r = .30$), supporting the notion of two related, but distinct, factors.

Examination of modification indices for the proposed measurement model indicated that removing the emotional deprivation schema (ED), as a manifest indicator of the *Disconnection/Rejection* schema domain would decrease the proposed measurement model's χ^2 statistic by approximately 107.98. Given the possibility for substantial model improvement by removing emotional deprivation as an indicator, correlations between manifest indicators were examined. Notably, the ED schema evidenced strong correlations with both of the manifest indicators of CEM: CEA ($r = .59$) and CEN ($r = .68$). Examination of the ED schema items on the YSQ-SF and the CEA

and CEN items on the CTQ suggested a substantial amount of conceptual overlap between these items, particularly for CEN and ED items. ED items on the YSQ-SF focus on experiences in the childhood rearing environment rather than current thinking patterns. For example, CEN-related items on the CTQ include agreement or disagreement with the statement, “There was someone in my family who helped me feel that I was important or special, while one of five ED schema items assesses agreement or disagreement with the statement. “For much of my life, I haven't felt that I am special to someone.” Given this overlap, removal of ED schema items as indicators of the *Disconnection/Rejection* schema domain was hypothesized to reduce multicollinearity within the proposed measurement model.

Based on examination of the model fit, modification indices, and the results of the exploratory factor analysis with the *Other-Directedness* schema domain items, a second measurement model was tested in an attempt to improve measurement model fit. In this second measurement model, the *Other-Directedness* schema domain was split into its two constituent schemas indicated by their items on the YSQ-SF, and the ED schema items were removed as indicators of *Disconnection/Rejection* (Figure 4). Factor loadings for this second measurement model are summarized in Table 5.

Results indicated this new measurement model also provided a good fit to the data ($\chi^2 = 5750.88$, $df = 2051$, CFI = .84, TLI = .84, RMSEA = .06, SRMR = .05). When comparing the Akaike information criterion (AIC) and Bayesian information criterion (BIC) of the two measurement models, changes to the proposed measurement resulted in reduced AIC and BIC values, as well as improved CFI and TLI indices from the first to

the second model (see Table 3). Given this improved fit, this second measurement model was retained and utilized in subsequent analyses.

Table 4. Measurement Model 1 Factor Loadings

	CEM		Disconnection/ Rejection		Other Directedness		Anxious Attachment		Avoidant Attachment		Self Esteem		Relationship Functioning
CEA	.83	AB	.71	OD1	.68	ECR1	.77	ECR19	.73	RSES1	.75	TRUST	.82
CEN	.87	MA	.68	OD2	.83	ECR2	.82	ECR20	.64	RSES2	.75	SELF DISCLOSURE	.81
		ED	.72	OD3	.72	ECR3	.81	ECR21	.66	RSES3	.76	GENEROSITY	.93
		DS	.82	OD4	.71	ECR4	.75	ECR23	.74	RSES4	.70	COMFORT	.67
		SI	.71	OD5	.83	ECR5	.69	ECR24	.72	RSES5	.79	COMM	.61
				OD6	.30	ECR6	.74	ECR25	.66	RSES6	.82		
				OD7	.14	ECR7	.71	ECR26	.76	RSES7	.82		
				OD8	.36	ECR8	.75	ECR27	.66	RSES8	.65		
				OD9	.19	ECR9	.65	ECR28	.80	RSES9	.74		
				OD10	.31	ECR10	.57	ECR29	.80	RSES10	.78		
						ECR11	.58	ECR30	.81				
						ECR12	.61	ECR31	.77				
						ECR13	.60	ECR32	.62				
						ECR14	.49	ECR33	.65				
						ECR15	.60	ECR34	.74				
						ECR16	.61	ECR35	.66				
						ECR17	.59	ECR36	.67				
						ECR18	.47						

Note. All factor loadings were significant at $p < .01$. CEM = Childhood Emotional Maltreatment, CEA = Childhood Emotional Abuse, CEN = Childhood Emotional Neglect, AB = Abandonment schemas, MA= Mistrust/Abuse schemas, ED= Emotional Deprivation schemas, DS = Defectiveness/Shame schemas, SI = Social Isolation schemas, OD1- OD10 = Other Directedness items, ECR1 – ECR36 = Experiences in Close Relationships items, RSES1 – RSES 10 = Rosenberg Self-esteem Scale Items

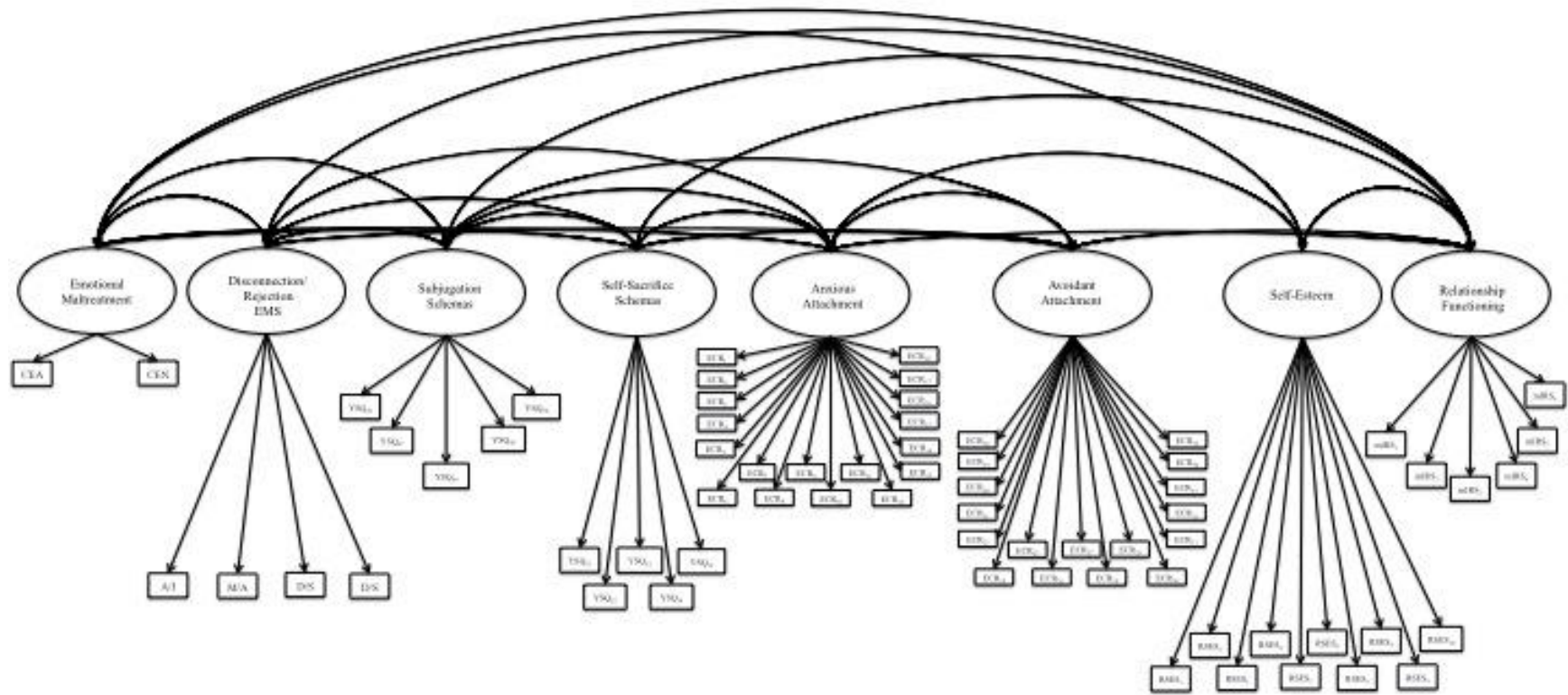


Figure 4. Revised measurement model. Within this model, emotional deprivation (ED) schemas removed as an indicator of *Disconnection/Rejection* and the *Other-Directedness* domain split into the two *Other-Directedness* schemas: Subjugation, Self-sacrifice.

Table 5. Measurement Model 2 Factor Loadings

CEM		Disconnection/ Rejection		Subjugation		Self-Sacrifice		Anxious Attachment		Avoidant Attachment		Self Esteem		Relationship Functioning	
CEA	.84	AB	.73	OD1	.69	OD6	.60	ECR1	.77	ECR19	.73	RSES1	.75	TRUST	.82
CEN	.86	MA	.69	OD2	.83	OD7	.70	ECR2	.82	ECR20	.64	RSES2	.75	SELF DISCLOSURE	.81
		DS	.84	OD3	.72	OD8	.84	ECR3	.81	ECR21	.66	RSES3	.76	GENEROSITY	.93
		SI	.72	OD4	.71	OD9	.55	ECR4	.75	ECR23	.74	RSES4	.70	COMFORT	.67
				OD5	.83	OD10	.84	ECR5	.69	ECR24	.72	RSES5	.79	COMMUNICATION	.61
								ECR6	.74	ECR25	.66	RSES6	.82		
								ECR7	.70	ECR26	.76	RSES7	.82		
								ECR8	.75	ECR27	.66	RSES8	.65		
								ECR9	.65	ECR28	.80	RSES9	.74		
								ECR10	.57	ECR29	.80	RSES10	.78		
								ECR11	.58	ECR30	.81				
								ECR12	.61	ECR31	.77				
								ECR13	.60	ECR32	.62				
								ECR14	.49	ECR33	.65				
								ECR15	.60	ECR34	.74				
								ECR16	.61	ECR35	.66				
								ECR17	.59	ECR36	.67				
								ECR18	.47						

Note. All factor loadings are significant at $p < .01$. CEM = Childhood Emotional Maltreatment, CEA = Childhood Emotional Abuse, CEN = Childhood Emotional Neglect, AB = Abandonment schemas, MA= Mistrust/Abuse schemas, ED= Emotional Deprivation schemas, DS = Defectiveness/Shame schemas, SI = Social Isolation schemas, OD1- OD5 = Subjugation items within the *Other-Directedness* schema domain items, OD6- OD10 = Self-Sacrifice items within the *Other-Directedness* schema domain items, ECR1 – ECR36 = Experiences in Close Relationships items, RSES1 – RSES 10 = Rosenberg Self-esteem Scale Items

Structural Models.

Structural Model 1: Partial Mediation Model. The first structural model analyzed was a revised structural model (Figure 5). Based on changes made to improve the fit of the measurement model in the previous analyses, the *Other-Directedness* schema domain was split into two latent variables representing the two *Other-Directedness* schemas: self-sacrifice and subjugation. Thus, this model depicts the hypothesized relationships between CEM, the *Disconnection/Rejection* schema domain, self-sacrifice schema, subjugation schema, anxious attachment, avoidant attachment, self-esteem, and current relationship functioning, with one direct and six indirect pathways linking CEM and current relationship functioning. In order to control for additional, relevant variables, this revised structural model included pathways from covariates to affected latent variables based on the results of the path analysis described above. Additional pathways included those from CSA to *Disconnection/Rejection* schema domain, subjugation schema, avoidant attachment, and self-esteem; CPA to current relationship functioning; CPN to subjugation schema; and relationship length to current relationship functioning.

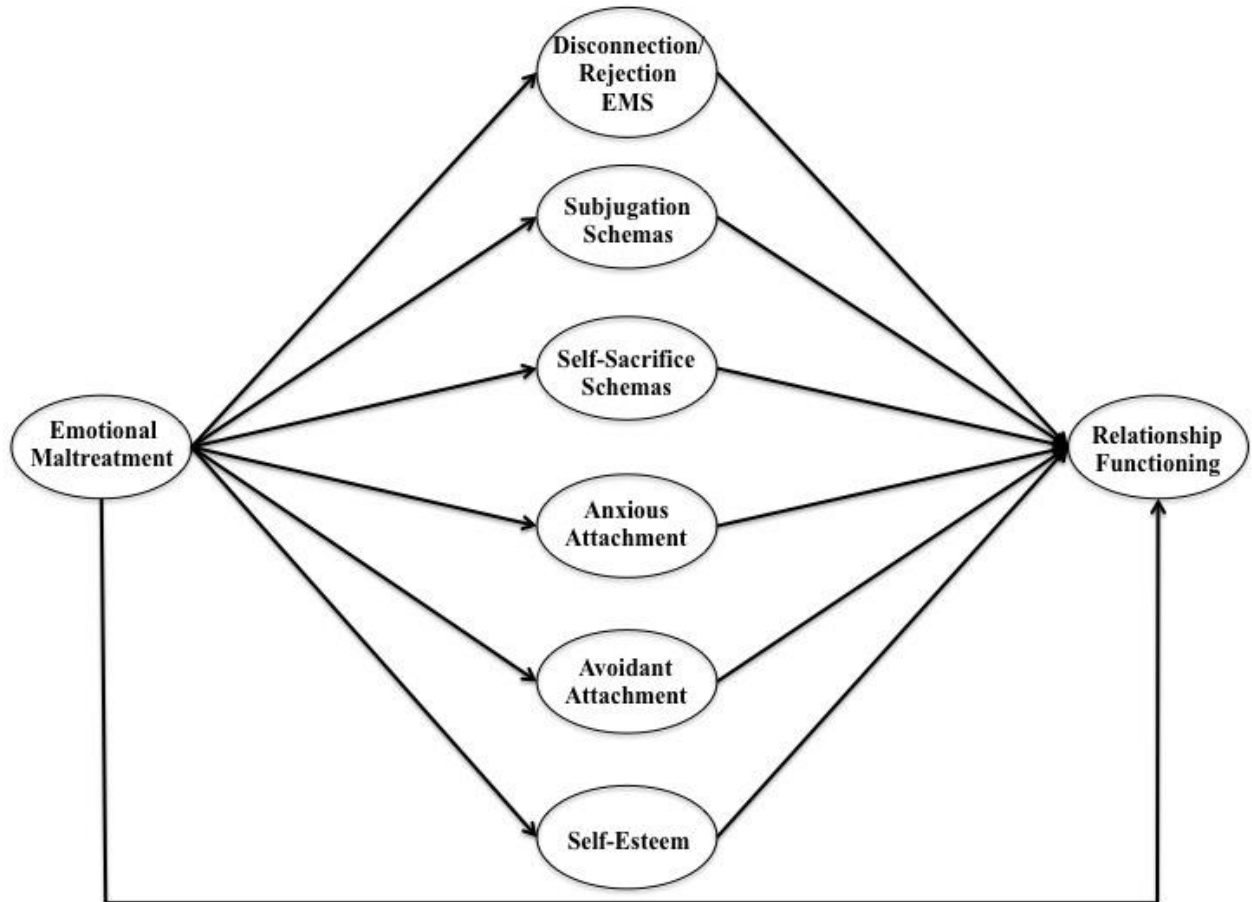


Figure 5. Revised Structural Model 1. This is the revised structural model examining a theoretical partial mediation of the relationship between childhood emotional maltreatment and relationship functioning. Based on results of measurement model testing, the *Other-Directedness* schema domain was split into the two *Other-Directedness* schemas: subjugation schema and self-sacrifice schema.

The standardized beta weights for the revised partial mediation model are displayed in Table 6, and the full model with estimated pathways is depicted in Figure 6. Results indicated that this model provided a good fit to the data ($\chi^2 = 6167.61$, $df = 2304$, CFI = .84, TLI = .83, RMSEA = .05, SRMR = .05). As hypothesized, CEM significantly predicted current relationship functioning ($\beta = -.15$, $p < .05$) and four of the proposed mediators: *Disconnection/Rejection* ($\beta = .61$, $p < .01$), subjugation ($\beta = .44$, $p < .01$), self-sacrifice ($\beta = .12$, $p < .05$), and self-esteem ($\beta = -.53$, $p < .01$). Contrary to hypotheses, CEM did not predict anxious or avoidant attachment, nor was relationship functioning associated with either form of insecure attachment. Partially supporting study hypotheses regarding the indirect effects between CEM and current relationship functioning, the *Disconnection/Rejection* schema domain ($\beta = -.44$, $p < .01$) and self-sacrifice schemas ($\beta = .10$, $p < .05$) significantly predicted current relationship functioning. As hypothesized, the direct path from CEM to current relationship functioning remained significant, even when accounting for the indirect effects of CEM on current relationship functioning through the *Disconnection/Rejection* schema domain and self-sacrifice schemas.

Table 6. Standardized Beta Weights

Predictor Variable	Dependent Variables						Indirect Effects	
	Disconnection/ Rejection	Subjugation	Self- Sacrifice	Anxious Attachment	Avoidant Attachment	Self Esteem		Relationship Functioning
CSA	.18**	.19**			-.09*	-.05		
CPA							-.10*	
CPN		-.07						
Relationship Length							.16**	
CEM	.61**	.44**	.12*	.01	.04	-.53**	-.15**	
Disconnection/ Rejection							-.44**	-.91 _a **
Subjugation							-.13	-.20 _{a,b}
Self-Sacrifice							.10*	.04 _{b,c}
Anxious Attachment							-.01	.00 _{b,c}
Avoidant Attachment							-.01	.00 _{b,c}
Self Esteem							-.09	.17 _c

Note. Row variables affect column variables. * $p < .05$; ** $p < .01$. CSA = childhood sexual abuse; CPA = childhood physical abuse; CPN childhood physical neglect; CEM = childhood emotional maltreatment. Indirect Effect denotes the effect of CEM on Relationship Functioning through one of the six mediators; indirect values with different subscript values are significantly different from one another at $p < .05$ as determined by Wald tests.

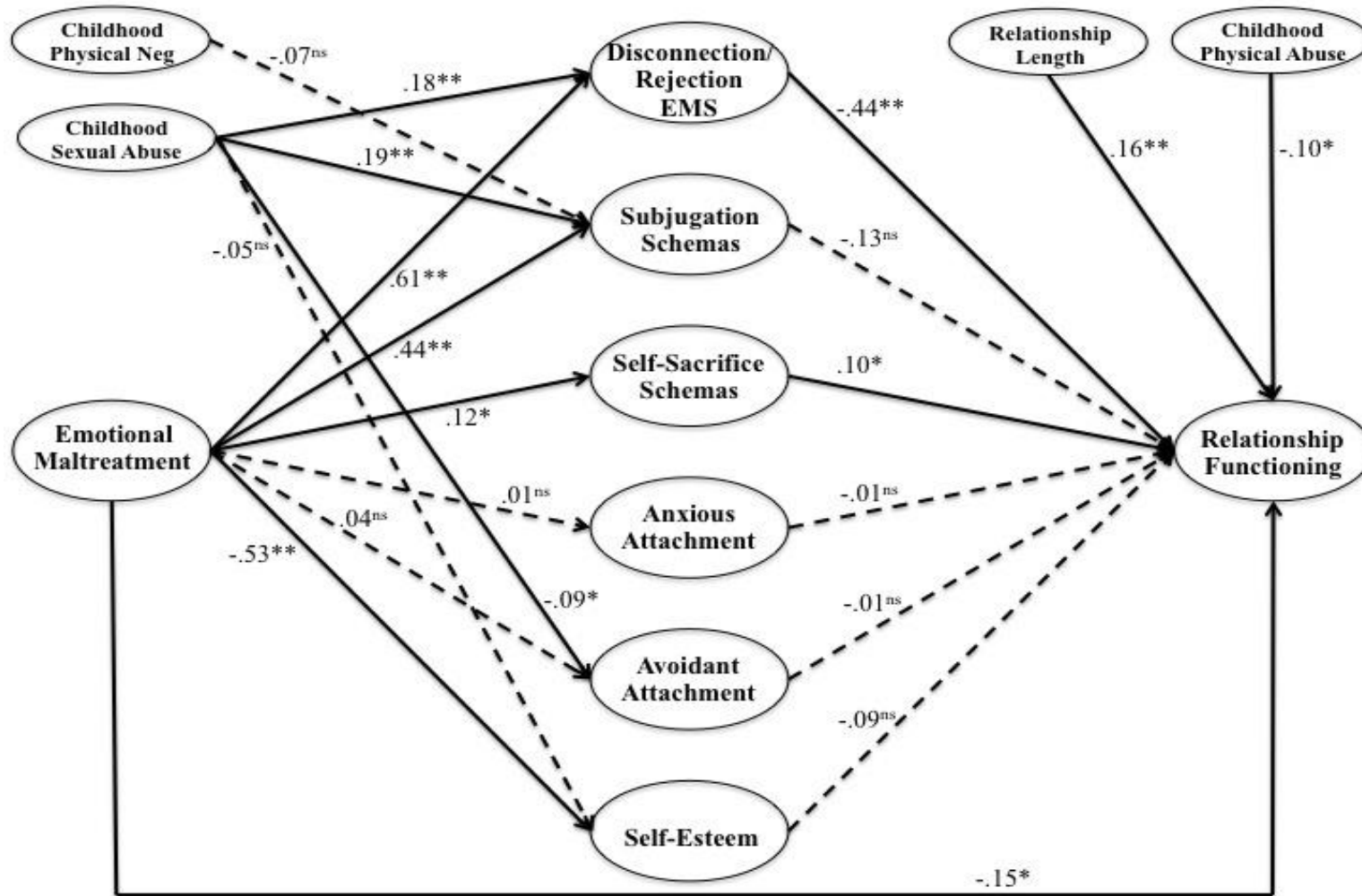


Figure 6. Revised Structural Model 1: Partial Mediation Model. Standardized regression weights are presented for the direct and indirect paths. Note. * $p < .05$; ** $p < .01$.

Structural Model 2: Full Mediation Model. Structural Model 2 is depicted in Figure 7. This second model is identical to Structural Model 1, except the direct pathway from CEM to current relationship functioning was deleted in order to test for full mediation via the six indirect pathways (i.e., *Disconnection/Rejection*, subjugation schema, self-sacrifice schema, anxious attachment, avoidant attachment, self-esteem). The standardized beta weights for structural model 2 remained the same for the majority of the variables.

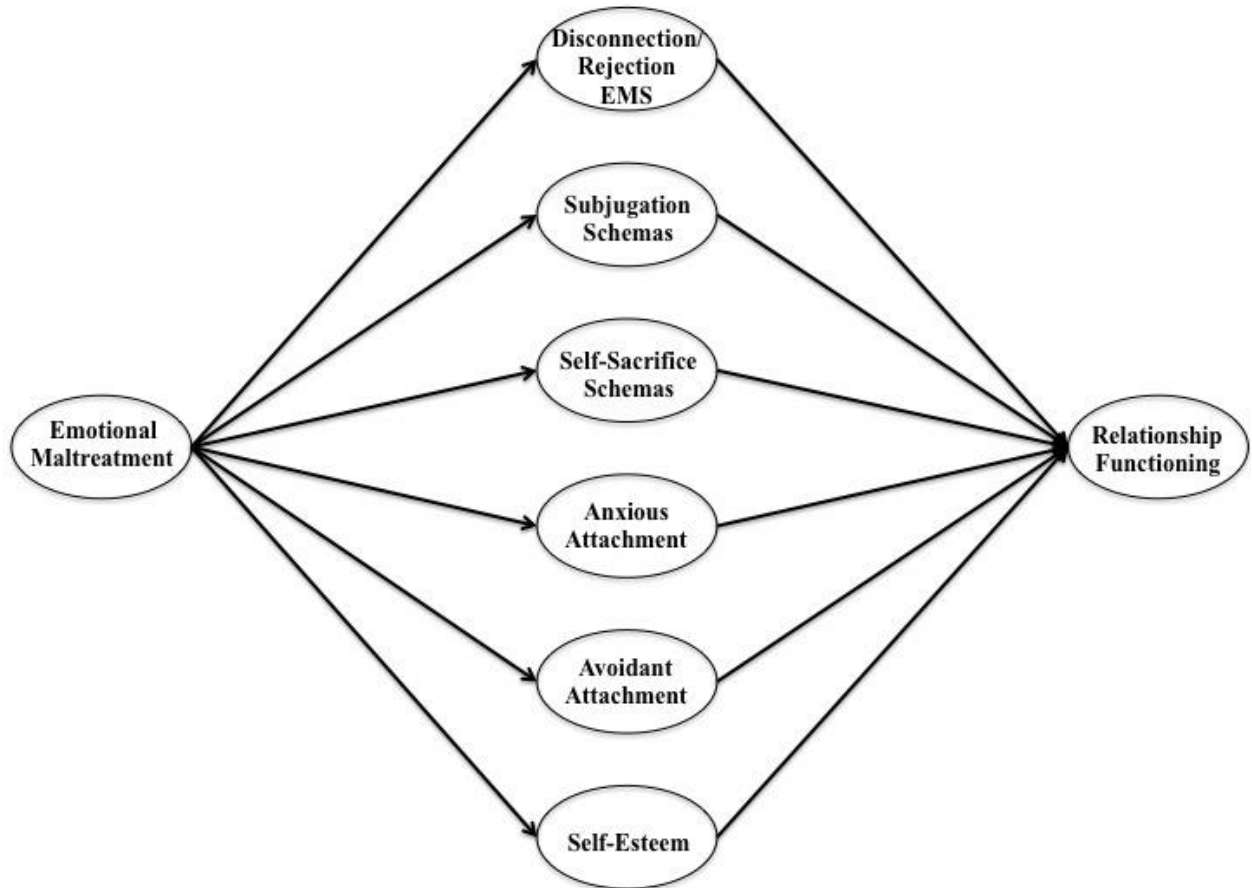


Figure 7. Revised Structural Model 2. This model represents the full mediation of the relationship between CEM and current relationship functioning. Structural Model 2 includes all pathways from Structural Model 1, except the direct pathway between CEM and current relationship functioning.

Results indicated that the full mediation model also provided adequate fit to the data ($\chi^2 = 6172.13$, $df = 2305$, CFI = .84, TLI = .83, RMSEA = .05, SRMR = .05). Within this model, CEM significantly predicted current relationship functioning ($\beta = -.15$, $p < .05$) and four of the proposed mediators: *Disconnection/Rejection* ($\beta = .61$, $p < .01$), subjugation ($\beta = .44$, $p < .01$), self-sacrifice ($\beta = .12$, $p < .05$), self-esteem ($\beta = -.53$, $p < .01$). Contrary to hypotheses, CEM did not predict anxious or avoidant attachment, nor was relationship functioning associated with either form of insecure attachment. Partially supporting study hypotheses regarding the indirect effects between CEM and current relationship functioning, the *Disconnection/Rejection* schema domain ($\beta = -.44$, $p < .01$) and self-sacrifice schema ($\beta = .10$, $p < .05$) significantly predicted current relationship functioning. Figure 8 depicts the full mediation model with estimated pathways.

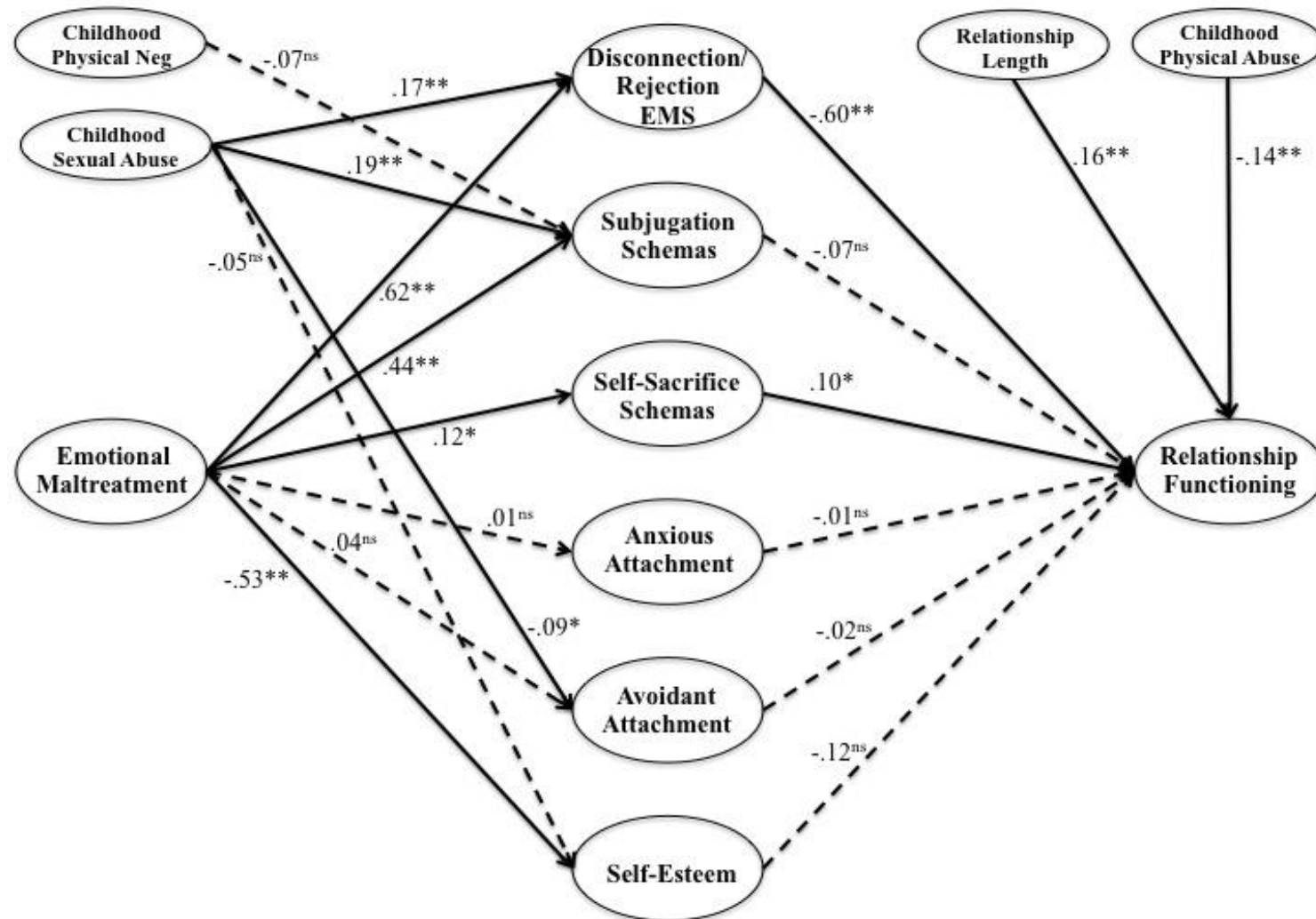


Figure 8. Structural Model 2: Full Mediation Model with Beta Weights. Standardized regression weights are presented for the indirect paths. Note. $*p < .05$; $**p < .01$.

Comparison of Structural Model 1 and Structural Model 2. When compared for model fit to the partial mediation model using the χ^2 difference test (see Table 3), results indicated that this full mediation model was not equivalent to the partial mediation model depicted in Structural Model 1 ($\Delta\chi^2 = 4.52$, $df = 1$, $p < .05$). Given the significant χ^2 difference value, it appears that the direct path from CEM to current relationship functioning significantly contributes to model fit, supporting the hypothesis that the partial mediation model provides a better fit to the data.

Comparison of Indirect Effects in Structural Model 1 (Partial Mediation Model). Comparisons of all indirect pathways are listed in Table 6. In order to address a secondary aim of establishing which significant mediator demonstrated the greatest explanatory power, the indirect pathways for *Disconnection/Rejection* and self-sacrifice schemas were compared utilizing Wald tests, as *Disconnection/Rejection* schema domains and self-sacrifice schemas were both significantly predicted by CEM and, in turn, predicted relationship functioning. Results of this comparison indicated that the *Disconnection/Rejection* indirect pathway accounted for a greater proportion of variance in the relationship between CEM and current relationship functioning. When considering all indirect pathway comparisons, it is notable that the indirect pathway involving subjugation schemas was not significantly different from the *Disconnection/Rejection* schema domain or self-sacrifice schemas, but did not significantly mediate the relationship between CEM and relationship functioning.

CHAPTER 5

DISCUSSION

The present study examined the roles of three cognitively-based mediators: early maladaptive schemas, insecure attachment, and self-esteem, in accounting for the relationship between CEM and romantic relationship functioning in a sample of undergraduate women. Despite previous theory and research highlighting the ways in which these mediators are related to the experience of emotional maltreatment in childhood and adolescence, to adult relationship functioning, and to each other, no prior study has examined how these mediators function simultaneously in predicting later relationship dysfunction from childhood maltreatment experiences. Given this limitation to the existing CEM literature, the results of this preliminary study integrate several distinct lines and expand upon contemporary understanding of how CEM confers risk for later romantic dysfunction.

Effects of Childhood Emotional Maltreatment on Current Relationship Functioning

Current findings are consistent with previous literature indicating that retrospective self-reports of CEM are linked to lower quality of romantic relationships (DiLillo et al., 2007; Perry et al., 2007). Current findings reinforce the notion that CEM experiences are associated with negative cognitive effects (i.e., EMS (Gay et al., 2013; O'Dougherty-Wright et al., 2009; Young et al., 2003); low self-esteem (Briere & Runtz, 1990; Hankin, 2005; Mullen et al., 1996)), which convey risk for reduced relationship functioning in adulthood. Given that CEM demonstrated a greater number of associations

to examine negative outcomes than any other forms of abuse, and, overall, these effects led to reduced relationship functioning, the current study supports previous assertions that emotional maltreatment may serve as the most potent form of childhood maltreatment (Hart et al., 1996). Further, the methodology and findings of this study constitute an advance over previous studies, as the effects of CEM on romantic relationship functioning remained evident and substantial, despite controlling for other forms of abuse. Taken together, overall results of this study support continued consideration of CEM as an important contributor to adult relational outcomes.

Indirect Effects of EMS on the Relationship Between CEM and Relationship Functioning

The hypothesis that the relationship of CEM to romantic relationship function would be partially mediated by cognitive variables was supported by current analyses. While previous literature has supported the notion that overall endorsement of EMS predicts reduced relationship satisfaction (Dumitrescu & Rusu, 2012; Yoosefi et al., 2010; Zolfaghari et al., 2008), research demonstrating the effect of specific EMS domains and schemas clarifies thinking patterns detrimental to relationship functioning. Within the retained partial mediation model, two of the three EMS variables (i.e., *Disconnection/Rejection* schema domain; self-sacrifice schema) were found to be significant, partial mediators of the CEM-relationship functioning relationship. These effects manifested in opposite effects: CEM was positively correlated with the modified *Disconnection/Rejection* schema domain and *Other-Directedness* self-sacrifice schema, while the modified *Disconnection/Rejection* schema domain was associated with reduced relationship functioning, self-sacrifice schemas were associated with positive relationship

functioning. Follow-up comparison of indirect pathways indicated that *Disconnection/Rejection* accounted for the greatest amount of variance in the relationship between CEM and current relationship functioning.

Consistent with hypotheses, there was a strong, positive association between CEM severity and *Disconnection/Rejection* schema endorsement, as well as strong, negative association between *Disconnection/Rejection* schema endorsement and reduced relationship functioning. Endorsement of the *Disconnection/Rejection* schema domain reflects the general notion that one's "needs for stability, safety, nurturance, love, and belonging will not be met" (Young et al., 2003, p. 13). As demonstrated in previous studies, endorsement of *Disconnection/Rejection* schema domains is related to increased interpersonal conflict (Gay et al., 2013; Messman-Moore & Coates, 2007). The partial mediating role of *Disconnection/Rejection* in the relationship between CEM experiences and reduced relationship functioning in adulthood is logical as schema-related cognitions may lead to relationship interfering behaviors. For example, given expectations that emotional needs will not be met, an individual may hesitate against and avoid being emotionally intimate with partners, or in contrast, may cling to the partner in order to gain emotional support or reassurance. While exact behavioral patterns are not within the purview of the current study, cognitive patterns likely precipitate and interact with detrimental behaviors, reducing overall relationship functioning.

As hypothesized, CEM was associated with increased endorsement of the two *Other-Directedness* schemas; however, only self-sacrifice schemas retained significance in predicting current relationship functioning. Furthermore, the finding that the self-sacrifice schema was positively associated with current relationship functioning was

unanticipated. Additionally, while subjugation evidenced a strong relationship to CEM experiences, the pathway from subjugation to relationship functioning was non-significant. As discussed below, interpretations of the outcomes related to these two mediators should be considered in both conceptual and methodological terms.

With regard to the positive relationship between CEM severity and self-sacrifice schemas, *Other-Directedness* schemas are thought to develop from interactions with parents or caregivers who place their emotional needs above those of their children's emotional needs (Young et al., 2003). Previous research has demonstrated an association between CEM and engagement in submissive/non-assertive and self-sacrificing (Paradis & Boucher, 2010). Current findings linking CEM and self-sacrificing schemas lend further support for this association. Self-sacrificing schemas reflect an emphasis on meeting the needs of others at the expense of the individual's own needs and may be enacted for a variety of reasons (e.g., to prevent others' discomfort, avoid guilt, increase self-esteem). Given that EMS are considered dysfunctional, it seems surprising that endorsement of self-sacrifice schemas would predict stronger relationship functioning, as self-sacrifice schemas, like all other EMS, are considered maladaptive in interpersonal functioning. Over time, increased ongoing engagement in self-sacrificing schemas and behaviors are thought to lead to a sense that one's needs are not being adequately met and to resentment of the romantic partner.

An alternative understanding of this relationship may be reflected when considering the lack of significant findings with the other *Other-Directedness* schema, subjugation, within the context of the current sample. First, given that subjugation and self-sacrifice are conceptually and statistically related, it may be that subjugation

represents a more maladaptive form of sacrifice within relationships. According to Young et al. (2003), self-sacrifice schemas are thought to involve an excessive focus on voluntarily meeting the needs of others. In comparison, subjugation involves excessive neglect of one's own preferences, desires, and emotions because one feels coerced. Subjugation schemas may represent a more maladaptive form of "coerced" sacrifice, rather than voluntary pro-social sacrifice. Taken with the methodological considerations noted below, it seems understandable that self-sacrifice may serve as a significant mediator positively affecting relationship functioning, while subjugation is significantly related to CEM experiences, but not a significant mediator of CEM and relationship functioning within the current sample.

Methodological considerations may also help explicate the positive effect of self-sacrifice schemas on relationships. Given that the current sample included a majority of dating partners who reported stronger overall relationship functioning, it seems logical that having a self-sacrificial mentality over the course of a dating relationship may increase relationship functioning and positive perceptions of one's role in the relationship. As Young and colleagues (2003) explain, as excessive self-sacrifice-related cognitive and behavioral patterns continue over time, particularly as life demands increase, perceptions may shift, leaving the partner less satisfied and appreciated within the relationship. Thus, current results may reflect a sample-specific context (i.e., high functioning individuals in dating relationships for a shorter length of time in relationship with reduced extra-relationship demands) in which increased self-sacrifice schemas are beneficial for the relationship, but overtime, such interpersonal cognitive and emotional patterns may become detrimental and negatively impact the relationship.

An additional methodological explanation for the current findings regarding the partial mediating role of self-sacrifice schemas may relate to the self-report nature of the current study. For example, if a participant values self-sacrificial thoughts and engages in self-sacrificial behaviors, she may be more inclined to report increased relationship functioning because of her investment in the relationship as a means of resolving cognitive dissonance. The six areas that comprise relationship functioning within the current study include: trust, self-disclosure, genuineness, empathy, comfort, and communication. If sacrificial thinking and behavior in relationships is valued by the individual and seen as benefitting the relationship, an individual may be more likely report increases within these areas (e.g., trust, comfort, genuineness), generating the positive effect of self-sacrificial behavior shown within the current structural model. While the two above explanations for the self-sacrifice schemas may seem to doubt the possible positive effects, this positive effect of self-sacrifice schemas seen within the current results may be legitimate.

Unlike self-sacrifice schemas, subjugation schemas did not significantly mediate the relationship between CEM and relationship functioning. The pathway from CEM to subjugation schema endorsement was significant; however, the pathway from subjugation schema endorsement to relationship functioning was not. Following conventional standards of mediation (Baron & Kenny, 1986; James & Brett, 1984), subjugation does not meet criteria as a mediator within the current model, while the *Disconnection/Rejection* schema domain and self-sacrifice schemas do meet such criteria. This non-significant subjugation finding is puzzling given that the path coefficients involving subjugation are of a similar strength to those evidenced with self-sacrifice

schemas and the indirect effect of subjugation was not significantly different from the indirect effects of the two significant mediators, with the magnitude of the indirect effect of subjugation falling between the indirect effects of *Disconnection/Rejection* and self-sacrifice schemas.

There are several possibilities as to why subjugation schemas did not serve as significant mediators. First, it may be that subjugation was not statistically related to relationship functioning within the current sample, particularly given that the relationships within the current samples are shorter-term dating relationships. Second, the effect of other mediators within the model may be reduced due to the strong effect of the *Disconnection/Rejection* schema domain within the model. As noted previously, one set of *Disconnection/Rejection* indicators (i.e., emotional deprivation) was removed from the measurement model as modification indices and examination of the correlations between CEA and CEN and emotional deprivation were extremely strong ($r = .59$; $r = .68$, respectively). Further, even with emotional deprivation removed as an indicator, the *Disconnection/Rejection* schema domain was still highly correlated with the predictor ($r = .30$) and outcome variable ($r = -.54$), accounting for a substantial amount of the indirect effects within the current model. Given the robust effect of *Disconnection/Rejection*, and the number of proposed mediators, within the model, it may be that less robust mediators, such as subjugation, were unable to account for a significant proportion of variance remaining. Lastly, while subjugation evidenced path coefficients of a similar magnitude of those with self-sacrifice, the subjugation schemas may have had a greater standard error compared to the standard error within self-sacrifice predictors. If this is the case,

then unreliability due to measurement error may have attenuated the effects of subjugation within the model.

Related to issues of significant mediation and indirect effects, self-sacrifice met criteria as a partial mediator of the relationship between CEM and relationship functioning (Baron & Kenny, 1986; James & Brett, 1984), but the indirect effect of self-sacrifice was not statistically significant. According to MacKinnon (2008), this issue is likely due to a lack of power to detect small effects within the current sample. In regard to full mediation with one mediator, MacKinnon's (2008) suggested sample size for a small indirect effect ranges from 509 to over 20,000 depending on method used to determine the indirect effect. When such a small effect is considered within a complex model containing five additional mediators, the likelihood of finding a statistically significant small indirect effect decreases substantially.

In consideration of above discussion, results do support the continued examination of the effect of *Other-Directedness* schemas on relationship functioning. Prior to this study, previous studies have either examined the effects of only one or all five EMS domains on interpersonal functioning. In such cases, the exclusion of all but one schema creates a limited understanding of how EMS impact relational functioning, or the incorporation of all EMS suggest a haphazard, atheoretical approach that is potentially rife with spurious correlations and effects. In light of the notion that self-sacrifice and subjugation may function differently over the course of relationships, future studies should focus on the longitudinal effects of self-reported *Other-Directedness* schema endorsement on relationship functioning and satisfaction within relationships at

different stages and in combination with other, theoretically appropriate schema domains (i.e., *Disconnection/Rejection*).

Indirect Effect of Attachment on the Relationship Between CEM and Relationship Functioning

While primary hypotheses of partial mediation and the mediating role of EMS (especially, the *Disconnection/Rejection* schema domain) were supported in the current study, attachment-related predictions were not. Based on current theory and previous research linking CEA to endorsement of insecure attachment, it was hypothesized that CEM would be positively related to endorsement of insecure forms of attachment (i.e., anxious attachment, avoidant attachment) and that endorsement of insecure forms of attachment would relate to reduced relationship functioning (Collins & Read, 1990; Gay et al., 2013; Hazan & Shaver, 1987; Riggs, 2010; Riggs & Kaminski, 2011; Tucker & Anders, 1999). Within the current study, the two forms of insecure attachment were unrelated to any other study variables, aside from a self-reported CSA history. This lack of findings, particularly the non-significant association between CEM and insecure attachment, is inconsistent with the majority of research within this area. In retrospect, these null findings may be due to one, or to a combination of the several factors described below.

First, the non-significant effects may be reflected in the nature of the constructs examined. While previous studies utilizing college women as participants have linked CEA experiences and insecure attachment in adulthood (Gay et al., 2013; Riggs & Kaminski, 2011), the majority of studies linking CEM and attachment have focused on CEA or “psychological abuse.” In contrast, there is little information regarding the

association between CEN and the development of anxious or avoidant attachment in adulthood. Given the dearth of research examining CEN as a separate predictor of insecure attachment, it is unclear if the association between CEA and insecure attachment was weakened by combining these two variables. Additionally, a recent meta-analysis (Baer & Martinez, 2006) indicated that there is substantial heterogeneity amongst effect sizes across previous study samples (theoretically related to differences in abuse severity) examining the link between childhood abuse and insecure attachment. Further, abuse experience evidenced a greater risk (approximately 7%) of the development of insecure attachment than neglect experiences (no increased risk), supporting the above assertion that CEN may have a different association with insecure attachment than CEA. To investigate whether this might be the case in the present study, relevant data analyses were conducted post hoc. Specifically, CEA and CEN variables from the CTQ were separated within the current data set and each variable was then correlated with the two attachment variables. The four resulting correlations coefficients were all extremely small (.01-.03) and not significantly different.

Sample characteristics may have also impacted the current study findings linking CEM to anxious and avoidant attachment. Recalling the mean levels of reported CEA, CEN, forms of insecure attachment, and relationship functioning, the current study sample reports relatively low CEM severity, evidences relatively equivalent levels of anxious and avoidant attachment (respective means of 56.98, 42.33) and reports fairly high functioning dating relationships on the mIRS outcome scale. According to Fraley et al. (2000), equivalence on anxious and avoidance subscales on the ECR-R are suggested of secure, rather than insecure attachment. Thus, despite self-reported low to moderate

levels of childhood abuse experiences, the majority of the sample reported fairly low levels of insecure attachment and, instead, was more likely securely attached, a variable not estimated in the current model. Given the sample's relatively secure attachment, expected associations between these three variables of interest may have been reduced.

Lastly, the instrument used to measure attachment, the ECR-R, may have impacted outcomes. Despite strong internal consistency within the current sample, the measure may not be operating in a valid manner or may be tapping a different construct than other attachment measures, such as The Relationship Styles Questionnaire (RSQ; Griffin & Batholomew, 1994), used in the Gay et al. (2013) study. Furthermore, no studies to date have assessed the relationships between insecure attachment on the ECR-R and childhood maltreatment or relationship functioning. Given convergent validity with other measures of attachment (Fraley et al., 2000), it is likely that the ECR-R would evidence the same relationships with childhood maltreatment and adult relationship functioning seen with other attachment measures. However, given the paucity of literature examining CEM and relationship functioning with attachment as measured by the ECR-R, a definitive conclusion cannot be drawn regarding the measure's ability to accurately estimate previously established relationships amongst key study variables.

Indirect Effect of Self-Esteem on the Relationship between CEM and Relationship Functioning

Self-esteem was included in the model to examine the possible impact of CEM experiences on relationship functioning in adulthood. Within the retained model, self-esteem evidenced a significant relationship to CEM experiences, but was only weakly and non-significantly related to relationship functioning. Upon examining the zero-order

correlations (see Table 1), moderate correlations between CEM and self-esteem and self-esteem and relationship functioning suggest that self-esteem is impacted by CEM and self-esteem is related to how individuals report on the current functionality of their relationships. However, in the context of variables examining the self-other relationship (i.e., EMS), self-esteem does not evidence a significant mediating role. Further, given a strong relationship between CEM and EMS included within the retained model, it may be that while a mediating effect could exist, the effect of *Disconnection/Rejection* and self-sacrifice schemas overwhelms whatever impact self-esteem may have had.

Secondary Aims

Three secondary aims were also of interest. One secondary aim involved the comparison of the indirect effects. Allowing for determination of the most robust mediator of the relationship between CEM and current relationship functioning. Follow-up analyses of the indirect effects of the proposed mediating pathways (i.e., *Disconnection/Rejection*, self-sacrifice) indicated the *Disconnection/Rejection* schema domain accounted for the greatest indirect effects from CEM history and current relationship functioning. While the strength of such relationships may vary by sample, such information may inform future research about and interventions related to the cognitive sequelae of CEM (see below).

An additional aim involved examining the effects of undergraduate women's perception of the self-other relationship (represented by insecure attachment and EMS) and self-perception only (represented by self-esteem). As supported by results of the current study, CEM history is related to disruptions in both self-perception and perception of the self-other relationship; however, it was unclear which form of

perception might be more impactful on certain outcomes, such as relationship functioning. The present results suggest that perception of the self-other relationship, specifically broad thinking patterns about others in intimate relationships, impacts self-reported relationship functioning to a greater extent than does perception of self-worth in general.

As previous research suggests, insecure attachment and EMS are distinct concepts with conceptual overlap (Gay et al., 2013; Mason et al., 2005; Young et al., 2003), thus, another secondary aim involved the comparison between the effects of insecure attachment and EMS within the proposed model. Based on previous theory and research, it was assumed that specific EMS would serve as a stronger predictor of current relationship functioning. Unfortunately, given the non-significant association between anxious and avoidant attachment to key study variables (i.e. CEM, current relationship functioning, EMS), it is not possible to draw any conclusions comparing the mediating roles of EMS and insecure attachment.

Limitations

Limitations of the current study should be noted. First, this study utilized a sample of mostly European American, heterosexual college women in a current dating relationship, which may have limited findings and may decrease the generalizability of study results to other samples. Further, participants reported fairly low levels of CEM and strong romantic relationship functioning, suggesting this is a fairly high functioning sample with little relationship distress, meaning that based on the sample alone, results may be attenuated. This, combined with exclusionary criteria excluding women who are not in a current romantic relationship, and the possibility that women in a dysfunctional

relationship may have not chosen to participate, suggests that results regarding other variable relationships may have been attenuated or non-significant. Given this, the results of the current study may not generalize to clinical populations, men, or more ethnically diverse samples. Follow-up studies utilizing other samples (e.g., individuals with stronger maltreatment histories, distressed couples, women who have recently ended a relationship, married individuals) may help to further clarify how cognitive factors impact relationship functioning following a history of childhood maltreatment.

Exclusive reliance on self-report measures may have also impacted study findings. Study participation required participants to recall, and report on, emotionally distressing distal experiences, as well as report current behaviors and thoughts within their own current relationship. Such survey methodology is open to both recall and response biases. For example, participants may have not recalled information about childhood events accurately or could have minimized childhood maltreatment experiences. Additionally, participant reports of current relationship functioning may have been inflated, either by an inflated overall perception of the relationship or concurrent satisfaction with the current relationship. Future studies may wish to utilize behavioral observations of how women interact with their partner and/or collateral reports of relationship functioning completed by the romantic partner in order to fully assess relationship functioning.

The current study utilizes cross-sectional data to predict relationships amongst variables occurring within a temporal pattern. Even though, by definition, CEM occurred in the past (prior to the age of 18), the temporal relations amongst CEM and the development of attachment, EMS, and self-esteem are unclear, as these related variables

may develop before, after, or simultaneously. While the current results based in structural equation modeling may suggest causality, definitive conclusions regarding the relationship amongst these variables over the lifespan cannot be demonstrated without longitudinal study designs.

Lastly, as is evident in the discussion of the effects of EMS on relationship functioning within the current model, it is important to consider how the overall complexity of the current model may have impacted study findings. While this study aimed to examine a comprehensive model of cognitively-based mediators of the relationship between CEM and relationship functioning, while controlling for established correlates of these key variables, the complexity of the current model lead to reduced power to detect the small indirect effects generally seen within this area of study. Additionally, substantial correlations between some of the key variables (CEM, *Disconnection/Rejection*, relationship functioning) in the context of reduced power could have further attenuated the effects of other mediators within the model (e.g., subjugation). The issue of model size and model complexity is important when utilizing SEM techniques to model complex relationships between distal predictors (e.g., childhood maltreatment) and adult outcomes, as more parsimonious models are statistically favored over more complex models (Hoyle, 1995). Future studies may benefit from initially reducing the complexity of such a model, and instead, gradually building in significant mediators. Such an approach would maintain the spirit of simultaneously examining conceptually related mediators, without overwhelming current statistical modeling capabilities.

Contributions and Future Directions

Despite limitations, the present study contributes to current literature on adult outcomes following CEM in a variety of ways. First, this is one of only a few studies (i.e., DiLillo et al., 2007; Perry et al., 2007) to directly link self-reported CEM maltreatment experiences to reduced relationship quality in adulthood and the first to examine specific relations amongst CEM (i.e., both CEA and CEN rather than only CEA) and current relationship functioning. This study serves as the first to concurrently examine several theoretically and empirically supported cognitive mediators of the relationship between CEM and relationship functioning.

One methodological advance involves the examination of the effect of emotional abuse and neglect experiences as a singular concept and within the context of other maltreatment experiences. There is a particular lack of research on the adult outcomes associated with CEN, since the majority of studies on CEM examine only CEA. Given likely comorbidity, examining CEM as a whole concept provides the potential benefit of examining these experiences together and separately. Future studies should utilize statistical modeling techniques that allow for model flexibility, and thus, assess the respective impacts of CEA and CEN as well. As noted previously, the impact of CEM has been relatively understudied to date compared to other forms of abuse, despite research indicating increased incidence of CEM and more detrimental effects compared to other forms of childhood maltreatment (Davis et al., 2001). By demonstrating the strong impact of CEM experiences while also accounting for the effects of other childhood maltreatment experiences, the current study supports continued examination of CEM experiences as predictors of negative outcomes in adulthood. Furthermore, the

strong relationships evidenced in the current results, despite potentially limited generalizability, provide support and suggest that future studies within a more distressed population could render even stronger support for the relationships established between CEM, EMS, and relationship functioning.

Substantial gaps exist within the current literature and research regarding CEM-related outcomes in adulthood to identify how related psychological concepts intermingle to predict later outcomes. This study addresses such a gap by examining conceptually related mediators, and results supported the mediating role of EMS, particularly the effect of the *Disconnection/Rejection* schemas, in the prediction of reduced romantic relationship functioning. Self-sacrifice schemas were also found to mediate the relationship between CEM and increased relationship functioning, although it was unexpected that such schemas would contribute positively to relationship functioning. While framed from a deficit approach, the positive effects of self-sacrificial beliefs on reported relationship functioning is novel and noteworthy as no previous studies have supported self-sacrifice schemas as a mediator of this relationship, suggesting that while maladaptive in some contexts, self-sacrificial values may also benefit relationships under certain circumstances.

While the current study represents a preliminary examination of how CEM experiences impact cognition within romantic relationships, and additional longitudinal examinations of these constructs within clinical samples are needed, results suggest implications for therapeutic treatment. Specifically, schema therapy (Young et al., 2003) may provide one avenue for psychotherapy for women with interpersonal and romantic relationship difficulties following CEM experiences. While a great deal of research prior

to any clinical trial would be required to examine such implications, the overall results of this study provide promise for continued research focused on understanding and mitigating the cognitive sequelae of childhood emotional maltreatment experiences.

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