PSYCHOLOGICAL MALTREATMENT AND ADULT ATTACHMENT: THE
PROTECTIVE ROLE OF THE SIBLING RELATIONSHIP

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A positive sibling relationship may protect individuals against poor developmental outcomes associated with psychological maltreatment. The current study assessed the moderating role of a positive sibling relationship in childhood and adulthood on associations between early psychological maltreatment and adult attachment anxiety and avoidance. College students \((N = 270)\) completed self-report measures of psychological maltreatment, sibling relationship quality, and adult attachment. Psychological maltreatment in childhood was associated with an increase in attachment anxiety and avoidance, while a positive sibling relationship was related to a decrease in levels of attachment anxiety and avoidance. As predicted, a positive childhood sibling relationship mitigated the negative effects of psychological neglect in childhood on attachment. Similarly, a positive sibling relationship decreased the levels of attachment anxiety associated with isolation in childhood.
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CHAPTER I

INTRODUCTION

Although the signs are not as physically obvious and thus more difficult to detect than other forms of maltreatment, the impact of psychological maltreatment can be detrimental to many domains of functioning, particularly developmental and psychological outcomes of children (Egeland, 2009). Children who experience trauma, abuse, or neglect are at an increased risk for internalizing and externalizing behaviors (Moylan et al., 2009). Represented by emotional abuse and emotional neglect, psychological maltreatment is the most commonly occurring form of maltreatment or trauma (Crawford & Wright, 2007; Glaser, 2002). While most often considered in combination with other forms of maltreatment, there is much research to support that psychological maltreatment makes substantial and unique contributions to negative outcomes in children unless an intervention, or other protective resources are available (Egeland, 2009; Riggs & Kaminski, 2010). In fact, emotional abuse is found to be more salient in the development of depression than other, more tangible, forms of abuse (Powers, Ressler, & Bradley, 2009).

Psychological maltreatment by a caregiver is characterized by patterns of harmful interactions between the caregiver and the child (Glaser, 2002). It is important, however, to differentiate between types of psychological maltreatment because they may promote different outcomes in children. Emotional abuse is characterized by behaviors that seek to reject and/or isolate (Hart & Brassard, 1990). This encompasses a wide spectrum of caregiver behavior, such as confinement; verbal hostility; taunting; belittling; intimidation; degradation; promotion of destructive, unsuitable behavior; as well as threats of physical injury or destructive acts (Brassard & Donovan, 2006; Caples & Barrera, 2006; Cole et al., 2007; Egeland, 2009). Emotional
neglect is defined as interactions or the lack of interactions with parents who are emotionally and psychologically unavailable, detached, disinterested, avoidant, or unresponsive to both emotional and physical needs and desires (Egeland, 2009; Hart & Brassard, 1990).

In an analysis of 69 clinical and non-clinical studies, Baker and Maiorino (2010) found that between 15% and 33% of adults report experiencing some type of childhood psychological maltreatment, with 15.4% of the community samples reporting severe emotional abuse and 13.1% reporting severe emotional neglect. Long-term consequences of childhood maltreatment by parents include vulnerability to additional trauma exposure in later relationships and increased anxiety, depression, posttraumatic stress, shame, and physical symptoms (Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Wright, Crawford, & Castillo, 2009). In the most severe cases of emotional neglect, schemas of shame and vulnerability can lead to dissociation (Wright et al., 2009).

These data document the potential for negative developmental outcomes for victims of psychological maltreatment and support the worthiness of attention to psychological maltreatment research. While there are many risk factors within cultures and families for all children, there are many protective factors at work as well. Risk factors within the family might include other traumatic experiences, divorce, death, or loss (Cicchetti & Valentino, 2006; Luthar, Cicchetti & Becker, 2000). A secure attachment in childhood (Alink, Cicchetti, Kim, & Rogosch, 2009; Dekleyen & Greenberg, 2008; Edwards, Eiden, & Leonard, 2006); positive relationship experiences; helpful and effective, accommodating schools; as well as connections with supportive and competent others compete with risk factors and might be considered protective factors (Cicchetti & Valentino, 2006; Luthar et al., 2000). Cicchetti and Valentino (2006) theorize that the interaction of negative and protective factors is a balancing act specific
to individual experience, either increasing or decreasing the likelihood of a negative or positive outcome across the lifespan. For example, brothers and sisters often draw one another close and serve as important sources of support during negative life events (Dunn & Creps, 1996; Gass, Jenkins, & Dunn, 2007; Hines, Kantor, & Holt, 2006). In fact, affectionate sibling relationships can buffer the effects of negative life experience on internalizing behaviors (Gass et al., 2007). This study will investigate the role of the sibling relationship in outcomes of childhood psychological maltreatment by caregivers through the lens of attachment theory. Individuals who experience psychological maltreatment but have a positive sibling relationship are expected to demonstrate greater attachment security as adults.

Attachment

The concept of the secure base is a key feature in attachment research and theory. Ainsworth and Bell (1970) describe the attachment relationship as an intangible tie that exists between two individuals and endures over a significant span of time. At birth, an infant begins behavioral strategies that result in a caregiver meeting basic needs. These behavioral strategies originate with crying and evolve into other communication methods as time progresses and development occurs. Crying not only communicates immediate physical needs of hunger or discomfort but also brings the caregiver into physical proximity. While at first, the infant has direct needs that any caregiver can fulfill, as development occurs, the infant begins to focus attachment behavior (e.g., separation anxiety, proximity-seeking) toward specific caregivers (Ainsworth, 1989; Bowlby, 1988). Based on the responsiveness of the primary caregiver, an internal working model of attachment relationships begins to form (Ainsworth, 1989). Using the attachment figure as a model, the child learns to regulate emotional reactions by developing emotional and behavioral patterns in which to operate (Siegel, 1999). When the responsiveness
of the caregiver is sensitive and consistent, the infant forms expectations that their needs are regularly met; the internal working model is secure and the child feels loved and valued (Bowlby, 1982). If needs are met inconsistently or dismissed by caregivers, feelings of love and self-worth do not develop, creating an insecure internal working model of abandonment or rejection (Bowlby, 1982).

Ainsworth and Bell (1970) developed a method of evaluating infant attachment behavior and categorizing attachment into patterns. Using the Strange Situation, Ainsworth, Blehar, Waters, and Wall (1978) identified three distinct patterns of infant behavior: secure, avoidant, and resistant (also referred to as ambivalent). Main and Solomon (1986) later identified a small group of infants who displayed odd behaviors (e.g., not recognizing the caregiver or approaching the caregiver by walking backwards) that led to the addition of a fourth category known as disorganized attachment.

Securely attached children view their attachment figure as loving, responsive and sensitive (Cassidy, 2001). Due to the responsiveness of the caregiver, secure children develop positive internal working models and a healthy capacity for close relationships (Swanson & Mallinckrodt, 2001). Cook (2000) reported that when a person feels comfortable relying on one family member, an internal working model of security develops and is applied to other relationships both within and outside of the family. Securely attached children experience confidence in their abilities and determination to explore and enjoy autonomy while maintaining a secure base to rely on in times of need (Cassidy, 2001). Also characteristic of secure attachment is the ability to trust in others and experience positive beliefs about others’ intentions (Mikulincer, Shaver, Sapir-Lavid, & Avihou-Kanza, 2009).
In contrast, insecure children experience non-optimal parenting that places them at risk for negative outcomes. Insecurely-avoidant children have internal working models based on rejection by their attachment figure (Main & Solomon, 1986), causing them to minimize emotions and avoid others. For example, in the Strange Situation, an avoidant infant is not visibly distressed at the caregiver’s absence and does not seek out the caregiver upon reunion. Although the infant appears to be calmly at play during separation and the caregiver’s return, research consistently finds that internal stress, measured by heart rate, is quite elevated (Cassidy, 2001).

A caregiver’s conflicting or inconsistent behaviors and attitudes foster an insecure-ambivalent internal working model that contributes to uncertainty, anger, and a need to maintain a constant connection with the attachment figure due to doubt that the caregiver will respond. The child appears quite preoccupied with the caregiver, even during times of safe exploration. Cassidy (2001) theorized that the caregiver is only sometimes responsive to the child, dependent on the caregiver’s physical or emotional capacity at the time. Consequently, the child engages in hypervigilant behaviors, behaviors that seek to maintain a relationship by close proximity or exaggerated attachment behaviors (Cassidy, 2001). For example, in the Strange Situation, as the caregiver leaves the room, the infant becomes extremely upset, but when the caregiver returns and contact is made, the infant becomes almost immediately resistant to the caregiver’s soothing efforts (Goldberg, 2000). The infant demonstrates anger and frustration towards the caregiver, likely because when the attachment figure draws the infant close, the infant associates this closeness with the loss that occurs when the infant is eventually rejected again. Because of this anxiety, ambivalently attached children frequently experience heightened distress (Cassidy, 2001).
In high-risk samples, it is common that children will develop a disorganized attachment style (Hesse & Main, 2006; Main & Hesse, 1990). Main and Hesse (1990) theorized that frightening caregiving behavior creates an approach-avoidance paradox for children. While attempting to flee the source of their fear they are simultaneously compelled to seek comfort and safety from the very source of alarm that they are escaping. This process creates a disorganized behavioral pattern or cycle characterized by incoherence and lack of organized strategy for obtaining comfort (Cassidy, 2001; Goldberg, 2000). Lyons-Ruth, Melnick, Bronfman, Sherry, and Llanas (2004) identified two common parenting styles among mothers of disorganized infants. “Hostile” parenting consists of frightening, negative and intrusive behaviors and can be considered emotional abuse. Hostile parenting components both provoke and refuse attachment behaviors, creating an inconsistent push-pull relationship. “Helpless” parenting is characterized by withdrawal, fearfulness, and inhibition and can be considered emotional neglect.

It is important to note that attachment was constructed as a continuum between secure and insecure from its very beginnings in order to describe many individuals whose experiences fall somewhere between “good” and “bad” (Bretherton & Munholland, 2008). Moreover, while patterns beginning in infancy create the basis for the attachment system, attachment organization is not fixed or predetermined but rather is malleable over time, open to environmental influence and experiences of the individual (Allen, 2008).

Once a child learns to verbally communicate, internal working models are based on the quality of interaction between parent and child as well as how emotion is expressed and how relationships are discussed. These working models can change when life experiences contradict the experience in infancy. In other words, early sensitive care that results in a secure infant attachment may not endure to adolescence and adulthood if sensitive care practices are not
maintained throughout adolescence (Thompson, 2008). For instance, if parents of a securely attached child have typically treated the child with sensitivity and responsiveness but begin to withdraw and become emotionally unavailable or if a new caregiver who threatens and creates mistrust is introduced, the child’s internal working model may begin to reflect defensiveness (Bowlby, 1973, 1988). Likewise, if from infancy to childhood, parents of an insecurely attached child change a non-optimal parenting style to consistent sensitivity, the internal working model of the child may shift toward security. However, it is much more difficult to change an insecure internal working model of attachment to a secure internal working model of attachment than to change a secure internal working model of attachment to an insecure internal working model (Bowlby, 1973, 1988; Thompson, 2006). In families with no significant adversity that maintain a consistent pattern of parenting over time, moderate continuity of attachment, whether secure or insecure, is expected (Thompson, 2008; Weinfield, Sroufe, Egeland, & Carlson, 2008).

In many families, multiple caregivers are present for a child. These caregivers are typically another parent, a grandparent, an older sibling, or paid childcare provider. Although generally not as significant as the parent-child relationship in the majority of American culture, a network of caregivers in a child’s life can contribute to general social competence across the lifespan (Howes, 1999). Multiple attachments are commonly arranged into a hierarchy, with a primary attachment figure, regardless of attachment style who is preferred and sought during the child’s times of distress (La Guardia, Ryan, Couchman, & Deci, 2000; Zeifman & Hazan, 2008). However, when the primary caregiver is not readily accessible or is dismissing or rejecting, the child may seek comfort from secondary attachment figures (Doherty & Feeney, 2004; Kobak, Rosenthal, Zajac, & Madsen, 2007).
When multiple caregivers are present, each attachment bond is a unique relationship based on specific interactions with the particular caregiver (Doherty & Feeney, 2004; Grossman, Grossmann, Winter, & Zimmermann, 2002). Colin (1996) suggested that the intensity of secondary attachments in relation to primary attachment are based on four criteria: 1) time that the infant spends in each caregiver’s care, 2) the quality of care received, 3) each caregiver’s emotional investment in the child, as well as in care-giving tasks, and 4) social cues given by the family and hired caregivers as to what roles each caregiver will assume. While attachment relationships remain separate and independent in their relation to development, the integration of experiences in relationships influences the internal working model of the child (Howes, 1999).

Attachment orientations formed in childhood will likely influence attachment patterns and behaviors far into adulthood (Cobb & Davila, 2008; Fraley, 2002). However, even in adulthood, the internal working model developed in childhood can adapt and change in response to new interpersonal relationships or additional stressors. A shift from an insecure attachment to a secure attachment is referred to as earned-security (Obegi, 2008; Thompson, 2008; Weinfield et al., 2008). In the majority of cases, achievement of earned-security is based on developing a secure relationship with another individual: a romantic partner, sibling, friend or therapist (Obegi, 2008; Pearson, Cohn, Cowan, & Cowan, 1994). In adulthood, reciprocity of attachment creates a mutually shared bond in which one individual receives security from a partner while reciprocally acting as a source of security for the partner. Commonly in older adolescents and in adulthood, an individual will experience secure peer or romantic attachment following this model of reciprocity (Zeifman & Hazan, 2008). However, these attachments can take up to two years to become a significant model of security. Over the course of many years, romantic
attachments, whether secure or insecure, begin to supersede attachment to parents and become the primary attachment bond (Zeifman & Hazan, 2008).

**Adult attachment.** There are two bodies of research in adult attachment. While their research foci and methodology differ, both literatures describe attachment classifications that correspond to the infant attachment classifications (Riggs et al., 2007). The first body of research emerged in the subdiscipline of developmental psychology and focuses on the adult’s mental representations of early childhood interactions with parents (Main & Goldwyn, 1985). Using the Adult Attachment Interview (AAI; Main & Goldwyn, 1985), attachment states of mind are assigned based on narrative quality, and one’s abilities to adhere to reality and communicate in a balanced, coherent manner. AAI classifications of secure/autonomous, dismissing, preoccupied, and unresolved/disorganized are analogous to the infant attachment categories of secure, avoidant, ambivalent and disorganized, respectively (Main & Goldwyn, 1985).

In contrast, research in social/personality psychology has focused on adult romantic attachment as assessed by self-report of conscious memories and views of romantic relationships. This line of research describes adult attachment along two dimensions of avoidance and anxiety in relationships with others (Fraley & Waller, 1998) based on the idea that exploring or entering a relationship exposes an individual to possibilities of disappointment, betrayal, resentment, guilt feelings and fear of abandonment. For insecurely attached adults, this vulnerability can lead to conflicting emotions of distrust and need (Cassidy, 2001).

Attachment anxiety reflects the degree to which individuals worry about the availability or adequacy of a partner based on a negative view of themselves (Brennan, Clark, & Shaver, 1998; Mikulincer et al., 2009). The anxiously attached adult may rely too heavily on a romantic relationship bond and might be limited in self-exploration because of extreme fragility and
controlling, demanding behaviors that define the relationship (Cassidy, 2001; Feeney, 2008). Characterized by resentment and conflict, relationships of individuals with high levels of attachment anxiety can be maladaptive because neither member is allowed to be independent or to accept adaptive roles of growth in the relationship. In conflict situations, anxiously attached adults may experience an abundance of distress and hurt as well as low interpersonal competence that can be exacerbated by their inability to forgive (Cassidy, 2001; Feeney, 2008).

Attachment avoidance reflects the degree to which individuals minimize emotions and distrust the actions of a partner, or in general, the actions of others. This occurs even when the partner may be acting in the best interest of the individual while trying to remain independent in the relationship (Brennan et al., 1998; Mikulincer et al., 2009). Adults with high attachment avoidance may experience vulnerability and distrust in relationships. These individuals may experience low levels of commitment and closeness to their partners. Their identity in relationships can be marked by a lack of reciprocal support, dismissal of emotions, inflexibility, difficulties in general reciprocity, and an inability to forgive (Feeney, 2008; Riggs, 2010; Riggs & Kaminski, 2010).

Although some researchers argue in favor of using only the dimensional model (Fraley & Spieker, 2003), much of the adult attachment literature uses a four-category model: secure, dismissing, preoccupied, and fearful. These categories provide a useful foundation for exploration of adult attachment representations that pertain to internal-working models of self and others, as well as dimensions of anxiety and avoidance (Bartholomew, 1990; Brennan et al., 1998; Fraley & Waller, 1998). The four categories of adult attachment representations are summarized in the subsequent paragraphs.
Characteristic of secure adult attachment is the ability to respect and validate the point of view of others (Seigel, 1999). Brennan and colleagues (1998) found that securely attached adults have low levels of anxiety and avoidance in relationships, maintaining a positive view of self and a positive view of others. When secure individuals begin relationships, their expectations tend to be positive, anticipating that others will accept them with flaws, as a complete person. Cassidy (2001) states that these positive expectations contribute to a greater capacity for intimacy in relationships. Secure adults are likely to perceive their relationships with confidence, regardless of slight fluctuations in the relationship over time (Duemmler & Kobak, 2001).

According to Bartholomew (1990), characteristics of an avoidant child are very similar to those of a dismissing adult who holds a positive view of self and a negative view of others. Dismissing adults experience high levels of avoidance with low levels of anxiety in relationships, and demonstrate coping mechanisms of detachment, denial, perfectionism and withdrawal. In regards to relationships, dismissing adults can control, minimize or superficially idealize close relationships (Brennan et al., 1998; Riggs, 2010).

Characteristics of an ambivalently attached child are similar to that of an adult with a preoccupied attachment style, marked by a negative view of self and a positive view of others. With high levels of anxiety and low levels of avoidance, preoccupied individuals can engage in hyperactivating strategies of pursuit or disengagement that seek to increase involvement with a partner. Hyperactivating behaviors may include behaviors that demonstrate exaggerated anxiety, self-doubt and extreme need for closeness (Brennan et al., 1998; Lyons-Ruth et al., 2004; Main, 1990). A common thread throughout interpersonal relationships of preoccupied adults will be based on two questions, “am I loved enough?” and “will I be abandoned?” (Seigel, 1999).
While the previously discussed adult attachment categories incorporate at least one positive view of self or others, fearful attachment style incorporates both a negative view of self and a negative view of others. Comparable to disorganized child attachment, fearful adult attachment is associated with experiences of abuse and trauma, primarily those experiences which are unresolved (Riggs et al., 2007). High levels of both anxiety and avoidance are present in fearful adult attachment, leading to contradictory coping styles of fear of abandonment but also withdrawal (Brennan et al., 1998; Simpson & Rholes, 2002).

Attachment and maltreatment. Cassidy (2001) contends that intimacy in the attachment bond is composed of four primary elements: the ability to seek care, the ability to give care, the ability to feel comfortable with an autonomous self, and the ability to negotiate. When these elements are disrupted, true intimacy in an attachment bond is weakened. Traditionally, secure attachment to a caregiver has been understood as a protective factor against the effects of abuse (Alink et al., 2009; Dekleyen & Greenberg, 2008). Maltreatment by an attachment figure, however, can be the most pervasive form of trauma because of direct messages of inadequacy and failure (Allen, 2001; Bacon & Richardson, 2001; Gibb, Alloy, Abramson, & Marx, 2003, Spertus et al., 2003). While disorganized infant attachment can be related to other factors, it is consistently associated with abuse and maltreatment by a primary caregiver (Crittenden & Ainsworth, 1989; Liotti, 1999; Pearlman & Courtois, 2005; van IJzendoorn, 1995). While a caregiver is supposed to be a predictable source of comfort and care, an abusive caregiver is unpredictable and frightening; the child is forced to seek comfort from the caregiver while remaining fearful. Because attachment behavior is an organized cycle of voluntary exploration and proximity seeking, in maltreating situations this cycle is broken because the child is
attempting to flee from the very person with whom they desire proximity (van IJzendoorn, 1995).

The primary consequences of psychological maltreatment in regard to attachment are deficits in both emotional regulation and internal working models (O’Hagan, 2006; Riggs, 2010). Because infants rely heavily on cues of comfort and regulation from parents, if the parent does not demonstrate these cues, or demonstrates conflicting cues, adequate strategies for emotional regulation are not learned. As children develop more complexity of emotion over time, skills to emotionally regulate are relied on to insure emotional growth (Riggs, 2010). Due to deficits in emotional regulation and the limited ability to accurately recognize emotional or social cues, those who experience chronic psychological maltreatment by a primary caregiver often operate at emotional extremes (Crawford & Wright, 2007, O’Hagan, 2006). Negative internal working models develop, such that the individual feels unworthy (Dodge Reyome, Ward, & Witkiewitz, 2010) and may question the intentions of others, possibly perceiving others to be harsh, unreliable and rejecting (Liem & Boudewyn, 1999; Riggs, 2010).

The experience of emotional dysregulation when trauma is present as well as disruption in the attachment process is actually traumatic in itself to the child (Allen, 2001). Using the Strange Situation in a longitudinal study, Egeland, Sroufe, and Erickson (1983) found that at 12 months, 43% of the 19 emotionally neglected participants were anxiously attached. Alarmingly, by 18 months of age, all of these 19 children were anxiously attached. Over time, these children were characterized by anger, self-harming behavior, noncompliance, little positive affect and other internalizing elements of stress. In addition, a study of sixth graders revealed that children who were emotionally abused or neglected in the first six years of life were less emotionally healthy, not as accepted by their classmates, and were considered socially withdrawn compared
to sixth graders who have not experienced high levels of emotional abuse or emotional neglect (Shaffer, Yates, & Egeland, 2009). Not only are children who suffer emotional abuse thought to have a limited ability to express emotion, but they are also thought to experience few but predominantly negative emotions, and may have difficulty understanding emotions expressed by others (O’Hagan, 2006).

It is important to note that in many cases, the primary attachment figure is not necessarily the maltreating caregiver and may even be the direct victim of maltreatment. Although the fear and anxiety of the child may not be directed towards the primary caregiver, the residual damage of witnessing maltreatment between caregivers is still quite detrimental to the child’s attachment system. Children who are mistreated or who witness maltreatment between caregivers are at risk for exposure to another paradox in attachment relationships: the caregiver who at one time protects and cares for the child also comforts and cares for the frightening or unavailable caregiver (Cassidy, 2001). Not only is the child faced with conflicting associations of the primary caregiver, but the caregiver projects certain emotions based on shame and guilt into the caregiver-child relationship. An inability of the caregiver to see themselves as protective or loving within the family causes the caregiver to have difficulty reflecting feelings of safety to their children (Almqvist & Broberg, 2003; Buchbinder & Eisikovits, 2003). It is common for these primary caregivers to withdraw from caregiver-child relationships and in response to this emotional neglect, the child might either become defensive or withdraw from the frightened primary caregiver (Liotti, 2000). The child then struggles to feel safe and experiences lower levels of confidence, self-esteem and self-efficacy (Buchbinder & Eisikovits, 2003).

Paradoxically, these behaviors and feelings portrayed by the primary caregiver cause an increase in attachment behaviors by the child, cyclically eliciting feelings of more guilt and
shame from the primary caregiver. This cycle contributes to hypervigilance that exemplifies anxious and disorganized attachment in infancy and fearful attachment in adulthood, each based on a negative internal working model of self. Emotional abandonment or neglect and intrusiveness or emotional abuse by the parent contribute to a negative view of self, the perception of the individual that he or she is viewed negatively by others, and at times learned helplessness (Cole et al., 2007; Wright et al., 2009). Individuals experiencing a negative view of self share high anxiety about the possibility of rejection from others because of feelings of unworthiness, vulnerability, and shame resulting in sacrificing of needs, depression, dissociation and other significant risk factors of psychopathology (Almqvist & Broberg, 2003; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999; Weems, Berman, Silverman, & Rodriguez, 2002).

The Sibling Relationship

For many individuals, sibling relationships are foundational early relationships, as well as the longest spanning relationships that a person may have (Walker, Allen, & Connidis, 2005). There is a great possibility of a deep emotional connection between siblings because sibling history can be founded at early developmental stages and is mutually shared within the family across the lifespan (Dunn, 1988; Silverstone, 2006). Unlike most childhood peer relationships, the sibling relationship, whether well adjusted or maladaptive, is enduring and often lifelong. There is candidness to the sibling relationship, largely due to the uninhibited nature of the relationship and the amount of time that siblings may spend together. In fact, most siblings spend more time together than they spend with anyone else, even their mother and father (Dunn, 2002; Kosonen, 1999). Dunn (2002) described the sibling bond as a relationship characterized by ambivalence because while these characteristics (i.e., longevity and candidness) are relatively
constant across most sibling relationships, there is great variability in the degree to which siblings get along with one another.

From a family systems perspective, the positive sibling subsystem contributes to the overall functioning of family dynamics and to healthy individual development and adjustment (Yeh & Lempers, 2004). In adolescence, a shift occurs from exclusive closeness with parents to close relationships with those outside of the parent-child relationship. Research indicates that adolescents rank a relationship with their closest sibling as functionally more important than a relationship with their parents on the following attributes: companionship, intimacy and nurturance (Lempers & Clark-Lempers, 1992). Brothers and sisters actually serve as quality resources for one another to develop social skills, with notable improvement in sibling bonds commonly occurring around the age of eleven or twelve (Buist, Dekovic, Meeus, & van Aken, 2002; Pike, Coldwell, & Dunn, 2005).

Based on teaching and play interactions in children, Howe and Recchia (2006) concluded that a significant function of the sibling relationship is complementary and reciprocal interactions. Brothers and sisters in warm, positive relationships use interactions with their siblings to develop social skills and cooperative interactions with others (Davies, 2002; Dunn, 1999; Noller, 2005). Siblings experiencing a close or warm relationship with one another have significantly less adjustment problems in school and increased levels of adaptation to social situations (Modry-Mandell, Gamble, & Taylor, 2007). Once acquired, social skills and cooperative interactions “spillover” as siblings utilize what they have learned to interact in the world (Pike et al., 2005). At the core of these skills are varying levels of mutual trust, self-disclosure and understanding, as well as abilities to guide and support and to request guidance and support from others (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001). If these
abilities are well developed and high in quality, they contribute to the adaptive development of prosocial behavior, emotional regulation, and cooperativeness; all are indications of a secure attachment (Mikulincer & Shaver, 2007; Noller, 2005; Volling, 2003). For those siblings who do not have positive relationships, prosocial skills are less likely to develop, and the relationship elements of mutual trust and understanding, guidance and support are lacking, possibly leading to other adjustment problems later in life (Dunn, 1999; Fraley & Davis, 1997; Howe et al., 2001).

Although the sibling relationship is potentially one of the longest lasting relationships of the human experience, existing research heavily focuses only on the relationships of siblings in childhood (Walker et al., 2005). Dunn (2002) highlighted the need for sibling research post-adolescence, both immediate and over the course of the lifespan because the sibling relationship changes and develops over time. Traditionally, research on adult siblings has targeted elderly adults in later life (e.g. Allen, Blieszner, & Roberto, 2004; Dunn, 2002; Schulman, 2007; van Volkom, 2006) but, because of individual life experiences, siblings in emerging adulthood undergo changes in social systems, familial relationships and support systems that are worthy of, and contributory to, research (Freeman, 1992).

The primary distinction between sibling relationships in childhood and adulthood is that relationships with siblings in adulthood are less obligatory and more voluntary. In adult sibling relationships, the degree to which the relationship is maintained and fostered is the primary responsibility of the siblings (Allan, 1977; Stafford, 2005). Riggio (2001) explored the distinction between childhood and adulthood sibling relationships, finding that in divorced families, if the divorce occurs while the siblings are children, the siblings are more likely to have positive feelings toward one another; whereas if parents divorce when siblings are in later
childhood or adulthood siblings are likely to report more negative feelings toward one another (Riggio, 2001). This difference in findings is most likely due to a greater amount of exposure to conflict or content in the parental relationship if the siblings are older in age. Additionally, the obligatory nature of the child sibling relationship close proximity and frequent interaction might explain why more negative feelings towards siblings were reported when their parents divorced while the children were in later childhood or adulthood (Allan, 1977; Riggio, 2001; Stafford, 2005).

Myers and Bryant (2008) described eleven behaviors that brothers and sisters participate in to demonstrate commitment or attitude toward their sibling relationship: tangible or physical support, emotional support, informational support, esteem support, network support, talk, shared activities, verbal expressions, nonverbal expressions, protection and intimate play. These domains remain stable throughout the life cycle, but the way they are expressed changes with age and life circumstance (Myers & Bryant, 2008). When living within the structure of the family unit, many relational forces influence the sibling bond and are reflected in childhood experience of cognitions, affect and behavior in regard to the sibling relationship. The adult sibling relationship is largely based on these childhood experiences, but once outside the home, the experiences of youth are only one factor in the relationship between adult siblings (Riggio, 2000). Other factors influencing sibling relationship quality in adulthood include: responsibility expectations, physical proximity, voluntary facilitation of closeness, and emotional closeness (Martin, Anderson, & Rocca, 2005; Stafford, 2005).

Riggio’s (2001) research implies that there is a substantial possibility of change in the sibling relationship between childhood and adulthood. However, conflicting research states that sibling attitudes are relatively stable through the lifespan. For example, Stanley (2007) found
that adults who currently reported positive attitudes towards siblings also retrospectively reported positive attitudes towards siblings in childhood. Likewise, adults reporting current negative attitudes towards siblings also retrospectively reported negative attitudes towards siblings in childhood.

Natural transformations in the sibling relationship also occur as siblings age and experience various life events independently, such as leaving home, partnering, parenting, and then mutually caring for and perhaps grieving parents (Freeman, 1992). Siblings may act as a safety net during these transformations as well as in familial relationships, developmental and social contexts, especially as the aging process begins (Eriksen & Gerstel, 2001). In fact, among elderly adults, mental health is more strongly correlated with a positive sibling relationship than with a positive parental relationship (Bassuk, Mickelson, Bissell, & Perloff, 2002). Based on these findings, it is logical to conclude that the sibling relationship is valued across the lifespan and can influence individual functioning (Riggio, 2000).

**Siblings as protective factors.** In sibling relationships, life experiences are often shared. Hines and colleagues (2006) found that sibling reports of any type of neglect within the family are highly correlated, supporting the idea of shared sibling history. In cases of domestic violence, the family experiences disharmony (Sanders, 2004). Classic systems-based and social learning theories suggest that when disharmony is present in a family, the sibling relationship models the disharmony and is characterized by aggression and conflict (Bandura, 1977; Bronfenbrenner, 1979). However, when a family does not follow this trajectory and family disharmony does not overflow into sibling relationships, siblings can become a support system and help buffer one another from the effects of abuse, both physical and emotional (Sanders, 2004). In a study of siblings ages 8 to 17, Gass and colleagues (2007) found that sibling
relationships, especially when affectionate, moderate the relationship between stressful life experiences and internalizing behavior. This effect occurs regardless of the quality of mother-child relationship. Research refers to this moderation effect as a protective factor, especially in regard to a relationship with an older sibling (Gass et al., 2007). Jenkins and Smith (1990) proposed that when interparental conflict is high, positive sibling relationships could be especially protective. Their findings confirmed that in a home with high marital conflict, children are at an increased risk for negative behavior and negative emotional expression; however, a positive relationship quality between siblings moderated this effect.

If siblings play a protective role in homes of high marital conflict, it is plausible that a sibling relationship might also buffer the effects of psychological maltreatment. Perceived family support as well as the perceived support of a friend in adulthood has been documented to buffer the effect of neglect on depression (Powers et al., 2009). Siblings could serve as a buffering mechanism based on research findings that adolescents report relying on siblings more than even close friends in order to cope with and confide about problems within the family (Cicirelli, 1995). Noller (2005) described reliance on siblings as a compensation of closeness, occurring especially within a conflicted family. In severely conflicted families, it is common for older siblings to strive to buffer the younger sibling from the effects of family conflict. In a longitudinal study of siblings, age 18 months (younger sibling) to 13 years (older sibling), Dunn and Creps (1996) found that when negative life events occurred, the brothers and sisters drew each other closer and showed each other support. Ainsworth and Bell’s (1970) Strange Situation was modified to incorporate a child and an infant sibling in the interactions with the stranger. When the parent left the room, 56% of older children became positioned between the stranger and the infant sibling. Sometimes the older children positioned themselves and other times the
infant moved to a location in which the older child was between the infant and the stranger (Stewart, 1983). In this scenario, there are two possible dynamics, one in which the older sibling takes initiative as protector and another in which the younger sibling relies on the older as a protector.

Gass and colleagues (2007) found that children who are raised in a conflicted home but use their sibling as a source of comfort have fewer problems coping both inside and outside the home. When sibling conflict is low, social competence in relating to peers is high and girls in close sibling relationships experience fewer depressive symptoms (Kim, McHale, Crouter, & Osgood, 2007). When using a sibling as a source of support, comfort is given and received, benefiting both children in the development of skills and everyday coping (Dunn, 2002).

Sibling relationship and attachment. Based on a social learning theoretical perspective, the relationship between brothers and sisters is modeled after the observed relationship between parents and the relationship between the parent and child (Bandura, 1977). In this perspective, siblings in conflicted families will most likely have a conflicted relationship with one another as they implement learned relationship skills. However, from an attachment perspective, it is likely that children in conflicted families will seek out a secure base in the most reliable family member, often a brother or sister (Furman & Buhrmester, 1985). When a stressor occurs, a child seeks proximity or aid from the primary caregiver but if the caregiver is not available or does not respond, the stress either intensifies or is alleviated by a person who functions as a secondary attachment figure. Attachment to a secondary figure is also likely to occur when the attachment figure is sometimes available but frequently unreliable (Ainsworth, 1989; Mikulincer & Shaver, 2007). In the most unfortunate cases of absent parents, siblings can become primary caregivers and, subsequently, likely attachment figures or even primary attachment figures (Ainsworth,
In a study of risk and resilience in alcoholic families that reported high levels of depressive symptomatology, unhealthy family functioning, and punitive parenting practices, the absence of a sibling contributed to unhealthy family functioning. Sibling attachments actually fostered resilience and served as important a role as the relationship between mother and child (Kittmer, 2005).

In childhood, adolescence, and especially adulthood, siblings may serve as attachment figures along with romantic partners, teachers and friends (Davies, 2002; Mikulincer & Shaver, 2007). Canarick (2006) discovered that when adult participants reported an insecure attachment to their parents, a significant percentage reported secure attachment to a sibling. Siblings not only meet all components of an attachment figure but also because of the dynamic of the sibling relationship, can be considered lifelong attachment figures (Trinke & Bartholomew, 1997; Walker et al., 2005).

Individuals who have experienced severe harm or trauma in childhood will likely engage in relationships with others of similar backgrounds, bonding over a shared history. These individuals likely share the same relationship deficits and in turn, reciprocate attachment behaviors that were never exercised with a primary attachment figure, strengthening their relationship with one another (Basham & Miehls, 2004; Dunn, 1988; Johnson, 2002; Silverstone, 2006). In a study of internal processes of attachment, Cook (2000) found that siblings can reciprocate attachment security cultivated by an inter-relationship positive feedback loop, which can modify the internal working model of attachment and foster security.

Doherty and Feeney (2004) reported that some sibling relationships (22% of adult participants) meet the criteria for primary attachment while Trinke and Bartholomew (1997) found 58% of a sample of young adults identified at least one sibling as an attachment figure. A
secure attachment to a sibling in adolescence can contribute to social development and to a healthy overall adjustment (Yeh & Lempers, 2004). Security lies in the knowledge that if an obstacle is encountered, the attachment figure can and should be relied on for guidance, help and relief, or at least support (Mikulincer & Shaver, 2007). Children with a secure bond learn to utilize their siblings as they develop, fluctuating between relying on their sibling as a support system and exploring independently as they transition into adulthood (Yeh & Lempers, 2004). Eventually, the very understanding that an attachment figure will be available when needed alleviates distress and can replace it with positive feelings and comfort (Mikulincer & Shaver, 2007). When primed by stimuli that elicit feelings of security, insecurely attached individuals more accurately feel the emotions related to their psychological pain (Cassidy, Shaver, Mikulincer, & Lavy, 2009). For example, when primed with securely-based stimuli, participants scoring high in attachment avoidance were able to confront and process their psychological pain, allowing them to proceed on the path to healing. Participants scoring high in attachment anxiety were able to downshift their distress regarding psychological pain when primed with secure stimuli. This allowed the participants to accurately process the impact of painful events rather than exaggerate emotions as a defense mechanism. Drawing on the research, it is possible that in high conflict families where siblings serve as attachment figures, the security elicited from a sibling relationship aids in healing and confrontation of the pain of maltreatment (Cassidy et al., 2009).

**The Current Study**

Research consistently shows that those exposed to childhood psychological maltreatment report a lack of emotional exploration and emotional experience (Spertus et al., 2003). Early psychological maltreatment is highly associated with a negative view of self and a negative view
of others, manifested in feelings of guilt, shame, unworthiness, hypervigilance, mistrust, and lack of forgiveness in relationships (Almqvist & Broberg, 2003; Cole et al., 2007; Feeney, 2008; Riggs, 2010; Riggs & Kaminski, 2010; van IJzendoorn et al., 1999). Because these relationship strategies can be maladaptive and self-defeating, there is a need for research that focuses on protective mechanisms that may prevent these negative outcomes.

Bacon (2001) suggested that in many cases, attachment security in mistreated populations could be fostered by the presence of a protective parent. If this finding were also true of other attachment figures outside the parental realm, the additive properties of multiple protective relationships could increase positive outcomes for those suffering psychological maltreatment. Siblings are utilized as confidants, friends, and supportive figures as well as attachment figures, especially in time of conflict (Cicirelli, 1995; Furman & Buhrmester, 1985; Noller, 2005). Positive sibling relationships can compensate for low parental support and are associated with low levels of loneliness and depression as well as high levels of self-esteem and confidence (Milevsky, 2005). Thus, the sibling bond, created through shared experience, can create a buffer or protective factor, between siblings and negative life events, adding to resilience and fostering positive development of the attachment system (Basham & Miehls, 2004; Cook, 2000; Dunn, 1988; Hines et al., 2006; Johnson, 2002; Noller, 2005; Silverstone, 2006). The current study tested the effect of psychological maltreatment on adult attachment, and examined the sibling relationship as a protective factor.

Significant direct associations were expected between higher levels of attachment anxiety or avoidance and a) increasing childhood psychological maltreatment (hostile rejection, isolation, neglect), as well as b) negative/poor sibling relationship quality in childhood and adulthood. In addition it was predicted that a positive sibling relationship would moderate the effects of
psychological maltreatment by a parent on attachment *avoidance* in two ways: a) in situations of early psychological maltreatment by a parent, a positive sibling relationship in *childhood*, measured retrospectively, will predict lower levels of attachment avoidance and b) in situations of early psychological maltreatment by a parent, a positive sibling relationship in *adulthood* will predict lower levels of attachment avoidance.

Finally, it was predicted that a positive sibling relationship would moderate the effects of psychological maltreatment by a parent on attachment *anxiety* in two ways: a) in circumstances of early psychological maltreatment, a positive sibling relationship in *childhood*, measured retrospectively, will predict lower levels of attachment anxiety and b) in circumstances of early psychological maltreatment, by a parent a positive sibling relationship in *adulthood* will predict lower levels of attachment anxiety.
CHAPTER II

METHOD

Participants

Data was collected from 292 undergraduate students at the University of North Texas. After eliminating 15 participants who did not complete the necessary measures, six participants whose questionnaire packets were faulty and one participant who did not meet criteria, 270 participants remained in the sample. Of the 270 participants, 73.3% were female and 26.7% were male. The mean age of the entire sample was 20.5 years old ($SD = 3.9$) with 53.7% Caucasian, 16.7% African-American, 16.7% Hispanic, 5.2% Asian, and 7.7% indicating another ethnicity. Over half (52%) indicated a relationship status of single, 44% were in a serious romantic relationship, and 4% percent of the sample was married. The median income of the participant’s family of origin was $60,000 to $79,999 while the mean number of siblings in a family was 2.2, $SD = 1.4$. Eighty-three percent of the sample endorsed at least one item measuring the impact of psychological maltreatment by a primary caregiver in childhood, however, the mean of psychological maltreatment reported was in the low range, $M = 13.5, SD = 19.1$. Additional demographic data collected from a demographic form (see Appendix C) is reported in Table 1.

Procedure

Students who lived in the same home as a primary caregiver and who had at least one sibling were recruited through flyers and an online system which offers an opportunity for undergraduate students to participate in research studies and receive extra credit in their courses (see Appendix A). Upon arrival at the testing site (University of North Texas, Terrill Hall), participants were greeted and informed consent was obtained (see Appendix B). Data collection
sessions were held in the fall semester of 2010. Twelve sessions were held to collect data from about 24 participants at a time. After providing informed consent, the participants were asked to complete one of two counterbalanced questionnaire packets. Once the participant completed the packet of questionnaires, they received extra credit for one hour of participation in a research study. Data were entered and checked for accuracy. Missing values on questionnaires made up less than five percent of the sample and were therefore assigned a substitute value (i.e., the mean of the individuals’ responses to the respective measure).

Measurement Approaches

*Psychological Maltreatment Inventory.* The Psychological Maltreatment Inventory (PMI; Engels & Moisan, 1994) is a 25-item self-report questionnaire that measures retrospective accounts of psychological maltreatment before age 16. Participants were asked to complete two questionnaires, choosing a primary caregiver for each questionnaire and responding in regard to the specific caregiver. Participants were asked to identify their relationship to the chosen caregivers. In the sample, 83.3% indicated a mother as their primary caregiver, 14.8% indicated a father as their primary caregiver and 1.8% indicated another figure such as a grandparent or guardian. The PMI is composed of three scales: Hostile Rejection, Isolation and Neglect. There are six items that relate to Hostile Rejection (e.g. “[your caregiver] compared you unfavorably with others.”) Seven items comprise the Isolation scale (e.g. “[your caregiver] encouraged you to withdraw from opportunities for social contact.”) There are 12 items that assess Neglect (e.g. “[your caregiver] interacted with you only when necessary”) (Engels & Moisan, 1994).

Participants respond based on a six-point Likert scale of: (0) *this did not happen to me*, (1) *this had no effect on me*, (2) *a little negative effect on me*, (3) *moderate negative effect on me*, (4) *very negative effect on me*, or (5) *extreme negative effect on me*. Possible scores range from 0
to 125, with higher scores corresponding to increases in negative reactions to psychological maltreatment by parents. Test-retest reliability coefficients for the three scales range from .75 to .78. A reliability coefficient of .81 was reported for the total PMI. Convergent validity was established through comparison with the Parental Acceptance and Rejection Questionnaire (PARQ; Rohner, Saavedra, & Granum, 1978), a measure of individual’s reported level of parental warmth (Engels & Moisan, 1994). With the sample used for the current study, the mean score of the measure was 13.5 ($SD = 19.1$), with mean scores for the female group of 14.1 ($SD = 19.92$) and for the male group of 9.93 ($SD = 16.04$). These results are comparable to another study of 262 undergraduate students with mean scores for the female group of 19.0 ($SD = 20.3$) and for the male group, $M = 11.9$ ($SD = 14.4$) (Harper & Arias, 2004). Internal consistency reliabilities for the three scales were strong, ranging from $\alpha = .88$ to .92.

In addition to the original PMI, the Frequency of Psychological Maltreatment (FxPMI) scale was created as a separate measure utilizing the same items as the PMI but a different four-point Likert scale: (0) this did not happen to me, (1) this rarely happened to me, (2) this sometimes happened to me, or (3) this frequently happened to me. Possible scores on the FxPMI ranged from 0 to 75. In the current sample, the mean score of the measure was 9.4 ($SD = 11.8$), and internal consistency reliabilities for the three scales ranged from $\alpha = .81$ to .89. The FxPMI mean scores and standard deviations indicate similar results to the PMI, based on differences in the range of possible scores. The FxPMI had strong convergent validity with the PMI, $r = .93$, $p < .001$.

**Lifespan Sibling Relationship Scale.** The Lifespan Sibling Relationship Scale (LSRS; Riggio, 2000) is a 48-item self-report questionnaire that measures retrospective and present perceptions of the sibling relationship. Individuals are instructed to choose one sibling who had
the greatest impact on their lives and respond to all items in regard to the chosen sibling. The LSRS was counterbalanced for order effects. Half of the questionnaire packets began with retrospective items regarding the sibling relationship while the other half of the questionnaire packets began with items regarding the current perceptions of their sibling relationship.

The LSRS yields two total scales and six subscales, each measured by eight items. Three of these subscales comprise the Childhood Sibling Relationship Scale (Child LSRS) measured by: child affect (CA), child cognitions (CC), and child behavior (CB). The other three subscales comprise the Adult Sibling Relationship Scale (Adult LSRS) measured by: adult affect (AA), adult cognitions (AC), and adult behavior (AB). The affect subscales, CA and AA, focus on the emotions toward the sibling as a child and the sibling as an adult. Affect sample items respectively include: “I was frequently angry at my sibling when we were children” and “My sibling’s feelings are very important to me.” The cognition subscales, CC and AC, measure beliefs about the sibling in childhood and adulthood. Sample items of the cognitive subscales include: “My sibling knew everything about me when we were children” and “My sibling and I have a lot in common.” The behavior subscales, CB and AB, measure the behavior and the positivity of behavioral interactions between siblings in childhood and adulthood. Sample items of these subscales include: “My sibling and I often helped each other as children” and “I believe I am very important to my sibling” (Riggio, 2000).

Respondents choose the statement that best describes the relationship with their sibling using a five-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. Possible scores for each the Adult LSRS and Child LSRS range from 24 to 120, with higher scores indicating a positive relationship. The LSRS has proven to be exceptionally
consistent with a coefficient alpha of .96 for the total LSRS. Test-retest correlations were reported at .91 for the total LSRS (Riggio, 2000).

With the sample used for the current study, the total mean score of the Adult LSRS was 90.75 ($SD = 20.1$) while the total mean score of the Child LSRS was 84.44 ($SD = 19.7$). The means of the current sample are slightly higher, though still consistent with published norms in a study of 711 young adults of similar age, with means reported at 85.3 for the Adult LSRS and 79.5 for the Child LSRS (Riggio, 2000). Internal consistency reliabilities for the two total scales were $\alpha = .95$ and .96, with internal consistency reliabilities of the six subscales ranging from $\alpha = .86$ and .92.

**Experiences in Close Relationships.** Brennan and colleagues’ (1998) Experiences in Close Relationships (ECR) scale is a measure of adult attachment. Based on responses to 36 items, two scales represent feelings and attitudes in romantic relationships. There are 18 items assessing attachment anxiety (e.g., “I worry a fair amount about losing my partner”) and 18 items assessing attachment avoidance (e.g., “I try to avoid getting too close to my partner). Responses to these items are based on a seven point Likert scale, ranging from *strongly disagree* to *strongly agree*. However, a five point Likert scale was utilized for the current study, with possible responses ranging from *disagree strongly* to *agree strongly*. After summing items and averaging, each scale has a possible score range of 1 to 5. Therefore, a score of 1 or 2 might indicate low levels of attachment avoidance or anxiety while a score of four or five indicates higher levels of attachment avoidance or anxiety.

The ECR can also be used to classify respondents into one of four attachment categories. Individuals who score low in both avoidance and anxiety are classified as secure. Individuals with high scores of avoidance and low scores of anxiety are classified as dismissing, while
individuals with scores high in anxiety and low in avoidance are classified as preoccupied. Individuals whose scores are high in both avoidance and anxiety are classified as fearful. For the purposes of the current study, the ECR was utilized as a continuous measure that captures the dimensional model of attachment representations of avoidance and anxiety (Fraley & Waller, 1998).

Fraley, Waller, and Brennan (2000) analyzed the functioning and reliability of current adult attachment self-report questionnaires including the ECR scale and three others. The ECR was described as the most reliable of the self-report attachment measures, reporting alpha ranging from .90 to .95, having the best psychometric properties of the four. The sample used for the current study produced a mean score of 2.28 (SD = .77) on the Avoidance scale and 2.89 (SD = .84) on the Anxiety scale. ECR mean scores were not compared to normative data because of the difference in Likert scales. Both scales yielded excellent internal consistency reliabilities at α = .93 and .94.
CHAPTER III
RESULTS

The current study investigated the relationship between childhood psychological maltreatment and adult attachment by examining the role of sibling relationships as a moderator. Preliminary analyses were conducted to test whether the data met the assumptions of normality, linearity, and homoscedasticity. Assumptions of linearity and homoscedasticity were met. Although tests for normality indicated a statistically significant skew, transformation procedures did not significantly transform the data to normal distribution. In reports of psychological maltreatment, this deviation from normality is expected in the current sample, and might be considered a degree of underreporting (Hardt & Rutter, 2004; Wright et al., 2009). Means, standard deviations and intercorrelations among scales of interest appear in Table 2. Significant correlations emerged between attachment dimensions and all PMI and LSRS scales, with two exceptions: attachment anxiety was not significantly correlated with PMI Isolation or Frequency of Isolation (see Table 2). Further analyses were conducted to test for demographic differences. A one-way ANOVA revealed a significant relationship between Attachment Avoidance and ethnicity, $F(3, 266) = 3.26, p = .022$. However, Tukey post hoc tests did not demonstrate any significant difference between ethnicities.

A correlation analysis was conducted to examine the relationships between attachment dimensions, all PMI scales and both LSRS scales. As predicted, significant correlations between both LSRS scales and attachment dimensions suggest that positive child and adult sibling relationships are associated with lower levels of Attachment Avoidance and Anxiety. However, significant correlations between all PMI scales and LSRS scales indicated that increases in all psychological maltreatment scales were correlated with less positive sibling relationships in both
childhood and adulthood (see Table 2). Correlational findings suggest that positive sibling relationships are related to more secure attachment representations in adulthood, however, when psychological maltreatment by a caregiver occurs in childhood, individuals may experience increased difficulty in their sibling relationships.

All predictor and moderator variables were standardized before computing the interaction terms and proceeding with the primary analyses (Frazier, Tix, & Barron, 2004). Eight parallel hierarchical regressions were conducted to test whether sibling relationship acted as a moderator for the association between childhood psychological maltreatment and adult attachment representations. For each predictor and moderator variable in the model, a two-way interaction term was created by multiplying the individual psychological maltreatment scale by the LSRS scale (either Child or Adult LSRS) pertaining to the model. In Step 1, four of the hierarchical regressions utilized the three PMI scales: Hostile Rejection, Isolation, and Neglect. The other four regressions used the three Frequency of Psychological Maltreatment scales in Step 1: Frequency of Hostile Rejection, Frequency of Isolation, & Frequency of Neglect. Step 2 of each model was composed of one of the sibling relationship scales, either the Child LSRS or Adult LSRS. Step 3 of each model entered the three two-way interaction terms of the Psychological Maltreatment scales and the respective LSRS scale. The dependent variable was either ECR attachment avoidance or attachment anxiety.

Hypothesis 1: Attachment Avoidance

*Child sibling relationship.* To test the first hypothesis that a positive sibling relationship will buffer the effect of psychological maltreatment on attachment avoidance, a set of four hierarchical regressions were run. Model 1A tested the main effects of the three psychological maltreatment scales (PMI) and Child LSRS, as well as the three interaction terms between those
variables to predict attachment avoidance (see Table 3). Step 1 (PMI scales) accounted for a significant amount of variance in Attachment Avoidance, $R^2 = .04$, $F(3, 266) = 3.43$, $p = .018$. However, none of the PMI scales individually was a significant predictor of attachment avoidance. Step 2 of the regression indicated that the addition of Child LSRS significantly increased the amount of variance accounted for in Attachment Avoidance, $\Delta R^2 = .02$, $p = .011$. The Child LSRS contributed significantly to the model, $\beta = -.16$, $t = -2.55$, $p = .011$, predicting lower levels of attachment avoidance in the presence of a more positive child sibling relationship. Step 3 of the regression included the interaction terms of the three PMI scales and the Child LSRS, significantly increasing the variance in attachment avoidance that the model accounted for, $\Delta R^2 = .03$, $p = .021$. In the full model, Isolation contributed significantly and positively, $\beta = .21$, $t = 2.59$, $p = .010$, while the Child LSRS contributed significantly and negatively to the model, $\beta = -.16$, $t = -2.72$, $p = .007$. Therefore, increased greater perceived impact of isolation practices by a caregiver in childhood predicted an increase in attachment avoidance, while positive levels of the child sibling relationship contributed to a decrease of attachment avoidance. The interaction of Neglect and Child LSRS contributed significantly and negatively to the variance in attachment avoidance $\beta = -.19$, $t = -2.08$, $p = .039$. As depicted in Figure 1, as psychological neglect increased, the effect of child sibling relationship quality increased, such that in the context of high levels of neglect, a positive sibling relationship as associated with much lower levels of attachment avoidance whereas a negative sibling relationship was associated with higher levels of attachment avoidance. At low levels of psychological neglect, sibling relationship quality appeared to have minimal effect on attachment avoidance, but in the opposite direction (see Figure 1). The full regression Model 1A accounted for 9.4% of variance, $F(7, 269) = 3.90$, $p < .001$. 
The PMI was modified to measure the frequency of psychologically mistreating practices by a primary caregiver in childhood. In Model 1B, the three Frequency of Psychological Maltreatment scales (Frequency of PMI) were utilized in a similar format as the PMI in the first regression to predict attachment avoidance (see Table 4). Results were similar to the findings for Model 1A. Step 1 of the regression, (i.e., the Frequency of PMI scales) accounted for a significant amount of variance in attachment avoidance, \( R^2 = .04, F(3, 266) = 3.92, p = .009. \) However, none of the three Frequency of PMI scales contributed uniquely to the model. Adding the Child LSRS in Step 2 significantly increased the amount of variance accounted for by the model, \( \Delta R^2 = .02, p = .016. \) Child LSRS uniquely contributed to the model, \( \beta = -.15, t = -2.42, p = .016, \) with decreased levels of Attachment Avoidance associated with increased positivity of the child sibling relationship. In Step 3 of the model, the addition of the three interaction terms accounted for significantly more variance, \( \Delta R^2 = .03, p = .024. \) In the final, full model, the Frequency of Isolation scale uniquely contributed to the model, \( \beta = .15 t = 1.99, p = .048, \) as well as the Child LSRS, \( \beta = -.15, t = -2.45, p = .015. \) While increased occurrences of isolation practices by a caregiver in childhood predicted increased levels of attachment avoidance, an increase in the child sibling relationship predicted lower levels of attachment avoidance. The interaction of Frequency of Neglect and Child LSRS uniquely predicted Attachment Avoidance, \( \beta = .22, t = -2.44, p = .015. \) Like Regression 1, when high frequencies of psychologically neglecting behaviors by a caregiver were present in childhood, a more positive child sibling relationship was associated with lower levels of attachment avoidance, while a more negative child sibling relationship was associated with significantly higher levels of attachment avoidance. The full regression Model 1B accounted for 10% of the variance, \( F(7, 262) = 3.98, p < .001. \)
In order to test the second portion of the first hypothesis, a hierarchical regression was run utilizing the three PMI scales and sibling relationship scores of the Adult LSRS as well as the interactions between the PMI and LSRS variables to predict attachment avoidance (Model 1C) (see Table 5). Step 1 of the regression with the PMI scales accounted for a significant portion of variance in attachment avoidance, $R^2 = .04$, $F(3, 266) = 3.43, p = .018$. However, none of the PMI scales uniquely contributed to the model. With the addition of Step 2, Adult LSRS significantly increased the amount of variance explained in attachment avoidance, $\Delta R^2 = .03, p = .003$. Adult LSRS significantly contributed to the model, ($\beta = -.18, t = -2.98, p = .003$), indicating that a decrease in attachment avoidance was associated with more positive levels of the adult sibling relationship. Step 3 of the model, including the interaction terms of the three PMI scales and the Adult LSRS, significantly increased the variance in attachment avoidance that the model accounted for, $\Delta R^2 = .03, p = .031$. In the final full model, Adult LSRS was the only significant contributor to the model, functioning in a similar manner as the results of Step 2, $\beta = -.18, t = -3.03, p = .003$. The full regression Model 1C accounted for 10% of variance, $F(7, 262) = 4.14, p < .001$.

In the Model 1D, an additional hierarchical regression tested the effects of the three Frequency of PMI scales and sibling relationship scores on the Adult LSRS, as well as the three interaction terms between these variables to predict attachment avoidance (see Table 6). Step 1 Frequency of PMI scales accounted for a significant amount of variance in attachment avoidance, $R^2 = .04$, $F(3, 266) = 3.92, p = .009$. However, once again, none of the three individual scales of the Frequency of PMI contributed uniquely to the model. The addition of the Adult LSRS in Step 2 significantly increased the amount of variance accounted for by the model, $\Delta R^2 = .03, p = .007$. The Adult LSRS uniquely contributed to the model, with positive
levels of the adult sibling relationship predicting lower levels of attachment avoidance, $\beta = -.17$, $t = -2.72$, $p = .007$. There was no significant increase in the amount of variance accounted for in Step 3 by adding the three interaction terms into the model, $\Delta R^2 = .02$, $p = .161$. The full regression Model 1D accounted for 8.7% of variance, $F(7, 262) = 3.55$, $p = .001$.

Hypothesis 2: Attachment Anxiety

*Child sibling relationship.* To test the second hypothesis, that a positive sibling relationship will buffer the effect of psychological maltreatment on attachment anxiety, another set of four additional hierarchical regressions were run (see Tables 7, 8, 9, and 10). Model 2A used hierarchical regression to test the main effects of the three PMI scales and Child LSRS scores, as well as the three interaction terms between those variables to predict attachment anxiety (see Table 7). Step 1 of the hierarchical regression indicated that the block of PMI scales accounted for a significant amount of attachment anxiety, $R^2 = .05$, $F(3, 266) = 4.65$, $p = .003$, with greater perceived impact of hostile rejection by a caregiver uniquely contributing to a significant increase in attachment anxiety, $\beta = .20$, $t = -2.10$, $p = .037$. Including Child LSRS and the interaction terms in Steps 2 and 3 did not significantly increase the amount of variance accounted for, $\Delta R^2 = .01$, $p = .054$, and $\Delta R^2 = .02$, $p = .096$, respectively. The interaction term of isolation and Child LSRS uniquely contributed to the model, $\beta = -.19$, $t = -2.34$, $p = .020$. In the context of higher isolation practices by a caregiver in childhood, a positive childhood sibling relationship reduced the amount of adult attachment anxiety reported by an individual. When isolation practices were low or absent, however, a positive sibling relationship was associated with slightly higher levels of attachment anxiety relative to more negative sibling relationships (see Figure 2). The full regression Model 2A accounted for 8.5% of variance, $F(3, 262) = 3.50$, $p = .001$.
The Frequency of PMI scales were utilized in a similar format as the PMI scales to predict attachment anxiety. In Model 2B, a hierarchical regression tested the main effects of the three Frequency of PMI scales and Child LSRS scores, as well as the three interaction terms between those variables to predict attachment anxiety (see Table 8). Step 1 of the model with the Frequency of PMI scales accounted for a significant portion of variance in attachment anxiety, $R^2 = .05, F(3, 266) = 4.48, p = .004$. Frequency of hostile rejection contributed uniquely to the model, $\beta = .20, t = 2.16, p = .032$, with increased childhood experiences of hostile rejection practices by a caregiver predicting higher levels of attachment anxiety. Adding the Child LSRS in Step 2 significantly increased the amount of variance accounted for by the model, $\Delta R^2 = .02, p = .044$. Frequency of hostile rejection remained a significant contribution to the model, $\beta = .20, t = 2.12, p = .035$, while Child LSRS also uniquely contributed to the model, $\beta = -.12, t = -2.03, p = .044$. Results indicate that a more positive child sibling relationship contributes to decreased levels of attachment anxiety. The addition of the three interaction terms in Step 3 did not significantly increase the variance accounted for by the model, $\Delta R^2 = .03, p = .068$. However, the interaction of frequency of isolation and Child LSRS significantly and uniquely contributed to the model, $\beta = -.19, t = -2.44, p = .015$. As in the regression utilizing the PMI, the frequency of isolation experiences by a caregiver combined with a positive sibling relationship reduced the amount of adult attachment anxiety reported by an individual. The full regression Model 2B accounted for 8.8% of variance, $F(7, 269) = 3.603, p = .001$.

**Adult sibling relationship.** Model 2C tested the main effects of the three psychological maltreatment scales and Adult LSRS scores, as well as the three interaction terms between those variables to predict attachment anxiety (see Table 9). Step 1 of the hierarchical regression indicated that the block of PMI scales accounted for significant amounts of variance in
attachment anxiety, $R^2 = .05$, $F(3, 266) = 4.65$, $p = .003$, with hostile rejection contributing uniquely to the model, $\beta = .20$, $t = -2.10$, $p = .037$. That is, greater perceived impact of hostile rejection in childhood contributed to an increase in attachment anxiety. Step 2 added the Adult LSRS into the model and significantly increased the amount of variance accounted for by the model, $\Delta R^2 = .02$, $p = .010$. Positive levels of Adult LSRS contributed significantly to decreased attachment anxiety, $\beta = -.16$, $t = -2.59$, $p = .010$. With the addition of Adult LSRS to the model, hostile rejection was no longer significant, $\beta = -.17$, $t = -1.77$, $p = .078$. Including the three interaction terms in Step 3 of the model did not significantly increase the amount of variance accounted for, $\Delta R^2 = .02$, $p = .254$. However, in this last step, hostile rejection reemerged as a unique predictor to the model, $\beta = .24$, $t = 2.36$, $p = .019$, and isolation became a significant negative predictor of attachment anxiety, $\beta = -.17$, $t = -2.04$, $p = .042$. Adult LSRS also was a significant contributor, $\beta = -.17$, $t = -2.76$, $p = .006$, in the full regression Model 2C, which accounted for 8.8% of variance, $F(7, 262) = 3.59$, $p = .001$.

Model 2D tested the main effects of the three Frequency of PMI and Adult LSRS scores, as well as the three interaction terms between those variables to predict attachment anxiety (see Table 10). In Step 1, the Frequency of PMI scales accounted for a significant amount of variance in attachment anxiety, $R^2 = .05$, $F(3, 266) = 4.48$, $p = .004$. Frequency of hostile rejection contributed uniquely to the model ($\beta = .20$, $t = 2.16$, $p = .032$), predicting higher levels of attachment anxiety with increases in the amount of experiences of hostility and rejection practices by a caregiver in childhood. Adding the Adult LSRS in Step 2 significantly increased the amount of variance accounted for by the model, $\Delta R^2 = .03$, $p = .007$, but the contribution of frequency of hostile rejection dropped to a non-significant trend, $\beta = .18$, $t = -1.91$, $p = .058$, while increased positivity in Adult LSRS significantly predicted lower levels of attachment anxiety.
anxiety, \( \beta = -1.17, t = -2.73, p = .007 \). In Step 3, adding the three interaction terms did not significantly increase the variance accounted for by the model, \( \Delta R^2 = .02, p = .140 \). Increased frequency of hostile rejection once again uniquely predicted higher levels of attachment anxiety, \( \beta = .22, t = 2.32, p = .021 \), while increased frequency of isolation uniquely predicted lower levels of attachment anxiety, \( \beta = -0.20, t = -2.64, p = .009 \). In addition, increased positivity in the Adult LSRS uniquely contributed to decreased levels of attachment anxiety, \( \beta = -1.17, t = -2.85, p = .005 \). The full regression Model 2D accounted for 9.3% of variance, \( F(7, 262) = 3.85, p = .001 \).

**Exploratory Analyses**

Four hierarchical regressions were run to identify possible relationships between the three psychological maltreatment variables and specific aspects of the sibling relationship as assessed by the LSRS subscales. Subscales that were not significantly correlated with the dependent variable were excluded from the regression models. The psychological maltreatment scales of the PMI (Hostile Rejection, Isolation, and Neglect) and the sibling relationship scales of the Child and Adult LSRS (LSRS Affect, LSRS Behavior, LSRS Cognitions), as well as interaction terms between PMI scales and LSRS subscales were utilized to predict attachment avoidance and anxiety.

The first exploratory hierarchical regression included a) Step 1: Hostile Rejection, Isolation, Neglect; b) Step 2: Child LSRS Affect, Child LSRS Behavior, Child LSRS Cognition; and c) Step 3: the nine interaction terms of these scales to predict Attachment Avoidance. The full regression model accounted for a significant amount of variance, \( R^2 = .12, F(15, 254) = 2.28, p = .005 \). However, none of the predictors contributed uniquely and significantly to the model.

The second exploratory hierarchical regression included a) Step 1: Hostile Rejection, Isolation, Neglect; b) Step 2: Adult LSRS Affect, Adult LSRS Behavior, Adult LSRS
Cognitions; and c) Step 3: the nine interaction terms of these scales to predict Attachment Avoidance. The full regression model accounted for a significant amount of variance, $R^2 = .16$, $F(15, 254) = 3.21, p < .001$. However, none of the predictors made unique and significant contributions to the model.

The third exploratory hierarchical regression included a) Step 1: Hostile Rejection, Neglect; b) Step 2: Child LSRS Affect, Child LSRS Cognition; and c) Step 3: the four interaction terms of these scales to predict ECR Anxiety. The full regression model accounted for a significant amount of variance, $R^2 = .08$, $F(8, 261) = 2.94, p = .004$. However, none of the predictors contributed uniquely and significantly to the model.

The fourth hierarchical regression included a) Step 1: Hostile Rejection, Neglect; b) Step 2: Adult LSRS Affect, Adult LSRS Behavior, Adult LSRS Cognitions; and c) Step 3: the six interaction terms of these scales to predict Attachment Anxiety. The full regression accounted for a significant amount of variance in the model, $R^2 = .10$, $F(11, 258) = 2.50, p = .005$. One predictor, Adult LSRS Affect contributed uniquely to the model, $\beta = -.25, t = -2.37, p = .019$, with increased affect in an adult sibling relationship predicting lower levels of attachment anxiety.
CHAPTER IV
DISCUSSION

Consistent with expectations, a positive sibling relationship was directly correlated with decreased levels of attachment anxiety and avoidance. Similarly, with only one exception (i.e., isolation and attachment anxiety), significant correlations also emerged between forms of psychological maltreatment and increased levels of attachment anxiety and avoidance. However, regression analyses produced only partial support for the direct and moderation hypotheses of the current study. First, regression findings regarding direct associations are discussed, followed by moderation results.

Psychological Maltreatment and Adult Attachment Representations

Results of regression models were mixed. Consistent with theoretical expectations and previous research (Cole et al., 2007; Lyons-Ruth et al., 2004; Liotti, 2000; Riggs, 2010; Wright et al., 2009), as a group, experiences and perceptions regarding the impact of psychological maltreatment were associated with both attachment avoidance and attachment anxiety. However, individually the unique contributions of the three forms of psychological maltreatment varied considerably.

The attachment literature suggests that a caregiver’s attempt to isolate a child might be intrusive and over-controlling and could lead to increased attachment anxiety (Ainsworth, 1989; Cassidy, 2001; Seigel, 1999). However, current findings indicate that isolation practices by a caregiver contribute to increased levels of attachment avoidance, but decreased levels of attachment anxiety. The negative association between isolation and attachment anxiety was unexpected, because PMI Isolation items represent caregiving behaviors likely to undermine self-image and the development of social skills. Given this contradictory finding, results should
be interpreted with caution. While not hypothesized, results in regards to attachment avoidance are more easily explained by social learning theory. Specifically, the influence of a caregiver who socially isolates their child might contribute to the child’s distrust of others by modeling distrust or disengagement from others. A child who distrusts others does not readily engage with peers, creating a dynamic in which peers may socially reject the child, only confirming the child’s distrust of others in a self-perpetuating cycle that persists overtime and results in adult attachment avoidance (Bartholomew, 1990; Lyons-Ruth et al., 2004).

Additionally, although the literature generally links attachment avoidance to rejecting behaviors by parents (Ainsworth, 1989; Cassidy, 2001; Seigel, 1999), hostile rejection in this study was related to attachment anxiety. The items on this PMI scale appear to more closely resemble preoccupied anger, which is associated with anxious attachment. Thus a caregiver who verbally threatens, ridicules, or interacts with the child in a hostile way might contribute to a child’s negative view of self, as well as an increase in fear of verbal attack or abandonment by a caregiver (Brennan et al., 1998; Lyons-Ruth et al., 2004; Main, 1990).

Contrary to the other PMI scales, emotional Neglect by a caregiver was not found to uniquely contribute to adult attachment representations. A similar result was found in a prospective study of adolescent functioning and childhood psychological maltreatment (Shaffer et al., 2009). Whereas, emotional abuse significantly predicted increased levels of both aggression and social withdrawal, which in turn significantly predicted decreased levels of adolescent competence, emotional Neglect did not significantly predict aggression or social withdrawal (Shaffer et al., 2009). Shaffer and colleagues (2009) commented that few children in their study reported experiencing both emotional abuse and emotional neglect. They argued that the mechanisms at work behind each of these maltreatment types represent different parenting
and relational processes, and therefore likely predict differing outcomes. Lyons-Ruth and colleagues (2004) suggested that differences in the outcomes of emotional abuse and emotional neglect in childhood could be explained by the hostile-helpless parenting model. While hostile and helpless parenting can co-occur in the same caregiver, these mechanisms of parenting provoke differing responses and have differing impacts on the child. Further research is needed to explore the unique outcomes of emotional neglect. Based on Shaffer and colleagues’ (2009) findings and the findings of the current study, future research might partition emotional neglect into separate constructs that differentiate the processes of certain types, areas, or mechanisms of neglect. Specifying the effects of emotional neglect with the greatest accuracy possible will guide research to address the precise needs of the individual.

Current findings extend the literature by utilizing a measurement of three types of psychological maltreatment, which allowed the contributions of specific types of psychological maltreatment to adult attachment representations to be identified (Jellen, McCarroll, & Thayer, 2001). Evidence emerged that two of the three PMI constructs were associated with adult attachment strategies. On the other hand, given results demonstrating a significant contribution as a group, but no unique contributions for individual types of psychological maltreatment, it can be argued that the cumulative effect of all three forms of psychological maltreatment is necessary, such that a unitary, combined construct of psychological maltreatment has the most salient impact on attachment representations in emerging adulthood. However, given the low levels of psychological maltreatment in this sample, it is possible that more severe maltreatment in any one of the 3 forms could produce an observable effect.

Interestingly, certain forms of psychological maltreatment made unique contributions to the model only with the addition of the sibling relationship and interaction variables. This trend
occurred in two models. First, isolation practices became significant with the addition of the child sibling relationship and the interaction variables to predict attachment avoidance. Second, both hostile rejection and isolation practices became significant with the addition of the adult sibling relationship and the interaction variables to predict attachment anxiety. Although not a pure suppression variable because the sibling relationship was significantly correlated with all forms of psychological maltreatment, the sibling relationship likely suppressed some variance in the model that was not accounted for by types of psychological maltreatment. That is, characteristics of the sibling relationship, while related to adult attachment representations, might be unrelated to the experiences of psychological maltreatment by a caregiver in childhood (Krus & Wilkinson, 1986).

The current study utilized both the original PMI as well as a modified version. The original PMI measures the respondents’ perception of the impact of psychologically mistreating practices by their primary caregiver, while the Frequency of Psychological Maltreatment instrument asked respondents to indicate the presence, or frequency of psychologically mistreating practices by their primary caregiver. Whereas frequency measures simple event occurrence, measuring the respondent’s perception of the impact of psychological maltreatment practices in childhood captures the way in which the respondent interprets the events of psychological maltreatment, the meaning of psychological maltreatment to the respondent. Rather than measuring the presence of psychologically mistreating events, measuring the impact of psychological maltreatment represents how traumatic the experience is to the individual (Allen, 2001). The results of the current study indicate a strong relationship between both methods of measuring psychological maltreatment. Future research could explore the
relationship between methods of measuring psychological maltreatment, as well as identify the most valuable measurement for research.

Moderation Findings

The hypotheses for the current study were postulated based upon attachment theory, which predicts that a child in a home of maltreatment might turn to the nearest secure base for comfort, support, and a healthy relationship. Social learning theory, an alternate developmental theory, proposes quite the opposite of attachment theory, suggesting that the caregiver models behaviors and relationships to the child (Bandura, 1977). Therefore, in a home of conflict and maltreatment, the child learns to engage in behaviors of hostility, rejection, isolation, control, and neglect towards others, including siblings. Previous research supports both theories of the sibling relationship (Bandura, 1977; Cook, 2000; Dunn & Creps, 1996; Gass et al., 2007; Jenkins & Smith, 1990; Sanders, 2004). Likewise in the current study the negative correlations between psychological maltreatment and sibling relationships in both adulthood and childhood provide some support for the social learning model of sibling relationships, but the moderation models of the child sibling relationship support the attachment framework of sibling relationships.

As predicted, the general findings of the current study indicate that the childhood sibling relationship might serve as a moderator for the effects of psychological maltreatment on attachment representations of avoidance and anxiety in adulthood. Interactions between psychological neglect and the sibling relationship in childhood support the first major hypothesis that a positive sibling relationship will buffer the child from the negative effects of childhood psychological maltreatment practices on attachment avoidance. Although psychological neglect was positively correlated with attachment avoidance, when respondents recalled a positive sibling relationship and the presence of high psychological neglect, they reported lower levels of
attachment avoidance as an adult relative to those who recalled high psychological neglect but a negative sibling relationship. Additionally, the relationship between social isolation practices by a caregiver and the childhood sibling relationship support the second hypothesis that a positive childhood sibling relationship will buffer the child from the negative effects of psychological maltreatment practices on attachment anxiety. Therefore, in the presence of high social isolation practices, participants with a positive childhood sibling relationship reported lower levels of attachment anxiety than those with a negative sibling relationship.

Exploratory analyses suggest that positive affect which an individual shares with a sibling in adulthood predicts lower levels of attachment anxiety in adulthood. Therefore, positive affect shared with a sibling in adulthood is an important feature of the adult sibling relationship related to positive internal models of the self. The correlational nature of the data makes it impossible to determine the direction of this association but further exploration of this finding may contribute to a more comprehensive understanding of specific features of a sibling bond (e.g., affect, behaviors, cognitions), as well as how these features interact with an individual’s experiences to influence outcomes in childhood and adulthood.

One explanation for the tendency of a sibling relationship to follow an attachment framework or a social learning theory model might lie in the nature of psychological maltreatment by a parent within a family. Possibly the most important finding of the current study is the types of psychological maltreatment that were buffered by the child sibling relationship. Emotional neglect and social isolation may involve loneliness, limited interaction with peer groups, limited acknowledgment by the caregiver, and restricted empathy and attunement by the caregiver. In family environments that characterized by features, siblings are likely relied on for peer interaction, comfort, and support. So when a primary caregiver isolates
or emotionally neglects a child, the sibling is pulled closer as a possible secure secondary attachment figure. But the sibling relationship did not moderate the effect of hostile rejection.

In a home of hostile parenting, it is possible that sibling relationships learn to engage in hostile interactions, possibly creating a tendency towards a negative sibling relationship and support for the social learning model of sibling relationships. Differential parental treatment, which can lead to feelings of jealousy or envy between siblings and negative models of self and others (Rauer & Volling, 2007) also may explain negative sibling relationships when psychological maltreatment by a caregiver is present in childhood. Future research might incorporate reports from at least one other sibling in the home and compare perceptions of the sibling relationship quality as well as experiences in childhood by the caregiver in order to further study social learning and attachment models of sibling relationships.

An important finding of the study was that when the sibling relationship served as a significant buffer against the effects of childhood psychological maltreatment, the relevant sibling relationship was in childhood. This trend supports previous findings that a shared history and shared experience are a foundation for the sibling bond in childhood. Living in the same home or experiencing similar interactions with a caregiver may facilitate an ability to relate to, empathize, and understand one another’s experiences (Riggio, 2001). It is also possible that in a home in which psychological maltreatment occurs, the nature of the sibling relationship in childhood adapts as a protective factor to address specific emotional needs of the child and counteract the experiences of psychological maltreatment.

The adult sibling relationship may be expressed in different ways, such as sharing more familial responsibility in caring for older members of the family, voluntarily fostering closeness in the relationship, verbal communication, self-disclosure, and trust (Martin et al., 2005; Myers
& Bryant, 2008; Stafford, 2005). As a child becomes an adult, experiences among siblings typically become more and more diverse, therefore decreasing a sense of shared experiences (Freeman, 1992; Riggio, 2000; Riggio, 2001). Riggio (2001) describes the adult sibling relationship as changing when the siblings no longer live in the same home and thus lack the mandatory interactions and communication that occur from living together (Allan, 1977; Stafford 2005). Additionally, because participants answered items regarding their adult sibling relationship after age 16, the average participant answered items regarding a four-year adult relationship with a sibling. A sample of older individuals might better capture the function of the adult sibling relationship, and produce different findings.

Limitations

The exclusive use of self-reports creates the possibility of reporting bias and common method variance. Limited reporting of psychological maltreatment produced a negative skew and might have restricted findings of significance between psychological maltreatment and adult attachment representations. This negative skew was expected and is considered common in college populations (Wright et al., 2009). On the other hand, the hypotheses of the current study relied upon respondents’ recollection of experiences of psychological maltreatment practices, from their primary caregivers and there is a tendency for individuals to underreport psychological maltreatment on retrospective measures of maltreatment, particularly in undergraduate samples (Hardt & Rutter, 2004; Wright et al., 2009). While the percentage of respondents who endorsed at least one item on the measure of psychological maltreatment is considered high, the mean score of experiences of psychological maltreatment is considered low (Wright et al., 2009). Utilizing a sensitive measure of psychological maltreatment (i.e., a continuous measure comprised of many items) enabled findings of a broad range of
psychologically maltreating behaviors by a caregiver, but underreporting was still possible. Employing other corroborating self-report measures (e.g., Parental Bonding Instrument; Parker, Tupling, and Brown, 1979, Childhood Trauma Questionnaire; Bernstein et al., 2003, Parental Acceptance and Rejection Questionnaire; Rohner et al., 1978) or alternate modalities, such as interviews (e.g., AAI or structured diagnostic interviews) might counteract the effect of underreporting. Furthermore, a longitudinal design would better address questions of causality than cross-sectional retrospective reports.

Another limitation is the instruction for respondents to answer the items in reference to their primary caregiver. It is possible that psychological maltreatment occurred by a secondary caregiver, so the effects of psychological maltreatment may still be present in the sample, but unaccounted for by our measurement. Further research could implement measures of psychological maltreatment by a secondary caregiver to comprehensively capture the childhood experience of psychological maltreatment.

The use of a college sample, particularly a sample of individuals who lived with their primary caregiver until at least the age of 16, limits the generalizability of the study. Future researchers could replicate the study in a diverse community sample with greater variability in age, gender, ethnicity, number of siblings in a family, family structure, familial stressors, and socio-economic status. Additionally, research with a sample of psychologically mistreated individuals might better reflect the hypothesized associations.

The most serious limitation to the current study is the accidental change in the Likert scale range on the ECR. A limited range of responses to items possibly limited the breadth of attachment representations captured by the current study and might contribute to a lack of full support of the effect of the adult sibling relationship, as well as limited findings of unique
relationships between specific types of psychological maltreatment and adult attachment representations. A wider spectrum of attachment representations might have increased the variability of attachment representations as well as the ability for an individual to respond with more specificity regarding their experiences in romantic relationships. Should this study be conducted again, it is recommended that the traditional seven-point Likert scale be used.

Conclusion

The current study supports existing research findings regarding association of psychological maltreatment and sibling relationships in childhood with adult attachment representations. The current study suggests that when children experience psychological maltreatment from a caregiver, the sibling relationship can be strained, yet fostering the sibling bond as a protective factor might aide in the development of greater security in adult attachment representations. Additional factors (e.g., peer relationships, social skills, a therapeutic relationship) (Bartholomew, 1990; Obegi, 2008) that can possibly serve as protective factors to minimize the harmful effects of psychological maltreatment in childhood on individual outcomes over time are deserving of exploration. In therapeutic interventions in childhood, providing activities that help siblings identify and share feelings, learn empathy, perspective-taking, and partake in sharing and supportive behaviors may begin to foster this bond (Iwaniec & Herbert, 1999; Iwaniec et al., 2007). Therapies proven to positively affect outcomes in children who experience psychological maltreatment (i.e., play therapy) can be implemented within sibling dyads or groups in order to promote the sibling relationship and reinforce effective, attuned relationship strategies to function as a protective factor.

An additional therapeutic implication of the study is the need for parenting courses and possible parenting interventions to educate caregivers regarding healthy parenting practices, as
well as the harmful effects of emotional abuse and emotional neglect. While exploring protective factors is essential to help individuals who are experiencing or have experienced psychological maltreatment by a caregiver, prevention of psychological maltreatment is a goal to strive for as well. According to Fortin and Chamberland (1995), prevention or family intervention follows three primary themes: helping the caregiver to understand the impact of psychological maltreatment on their child, reducing socioeconomic and social stress of the family, and reducing the dysfunctional patterns in the family. It is possible that psychological maltreatment from a caregiver occurs because the caregiver has unreasonable expectations of the child or is overwhelmed in other aspects of life that carry over to exasperation in parenting. One the other hand, parents may perceive punishment of the child enjoyable, has malicious intentions towards the child, or projects difficulties in childhood with peers or caregivers on to their child. Successful preventative interventions address these issues by providing individual therapy for the caregiver to heal as an individual, facilitating social support through group therapy or classes and offering psychoeducational courses that provide both parenting skills and education of the effects of psychological maltreatment on the child and family (for review, see Fortin & Chamberland, 1995).

Given the dynamic nature of psychological maltreatment, it is not expected that standardized treatment approaches will meet the unique needs of every individual. It is important that prevention and intervention research continue to explore protective factors, in addition to the sibling relationship, that might contribute to flexible treatment plans which can be tailored to accommodate the specific needs of the individual (Rees, 2010). The findings of this study not only support the need for additional research of the sibling relationship as a protective
factor, but also the need for additional research of how to mobilize the sibling relationship in
treatment to create the greatest impact as a protective factor.

Table 1

Descriptive Frequencies for Sample (N = 270)

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<th>Variable</th>
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<th>Percent of Sample</th>
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<tbody>
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<tr>
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**Table 2**

*Means, Standard Deviations, and Zero-Order Correlations of Variables (N = 270)*

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* p < .05.  ** p < .01.  *** p < .001.
**Table 3**

*Model 1A: A Hierarchical Regression Analysis Predicting Attachment Avoidance From PMI Scales, Child LSRS and Their Interactions (N = 270)*

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<th>$F$(dfs)</th>
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* * $p < .05$. ** $p < .01$. 
**Table 4**

*Model 1B: A Hierarchical Regression Analysis Predicting Attachment Avoidance From Frequency of Psychological Maltreatment Scales, Child LSRS and Their Interactions (N = 270)*

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<th>$F(dfs)$</th>
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* Frequency of Hostile Rejection X Child LSRS | .00 | .01
Frequency of Isolation X Child LSRS | .05 | .64
Frequency of Neglect X Child LSRS | -.22* | -2.44

* $p < .05$. ** $p < .01$. 
Table 5
Model IC: A Hierarchical Regression Analysis Predicting Attachment Avoidance From PMI Scales, Adult LSRS and Their Interactions (N = 270)

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<td>Neglect</td>
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<td>1.23</td>
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* p < .05.  ** p < .01.
Table 6
Model 1D: A Hierarchical Regression Analysis Predicting Attachment Avoidance From Frequency of Psychological Maltreatment Scales, Adult LSRS and Their Interactions (N = 270)

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<td>(7, 262)</td>
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* p < .05.  ** p < .01.
Table 7

*Model 2A: A Hierarchical Regression Analysis Predicting Attachment Anxiety From PMI Scales, Child LSRS and Their Interactions (N = 270)*

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*p < .05.  **p < .01.*
Table 8  
Model 2B: A Hierarchical Regression Analysis Predicting Attachment Anxiety From Frequency of Psychological Maltreatment Scales, Child LSRS and Their Interactions (N = 270)

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* p < .05.  ** p < .01.
Table 9
Model 2C: A Hierarchical Regression Analysis Predicting Attachment Anxiety From PMI Scales, Adult LSRS and Their Interactions (N = 270)

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<thead>
<tr>
<th>Variable</th>
<th>β</th>
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<th>F(df)</th>
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* p < .05.  ** p < .01.
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* p < .05.  ** p < .01.
Figure 1. Moderation model for PMI neglect and child sibling relationship predicting attachment avoidance.
Figure 2. Moderation model for PMI isolation and child sibling relationship predicting attachment anxiety.
APPENDIX A

SAMPLE FLYER
Extra Credit!!
Earn Research Hours!!

Study of Families and Relationships
You are invited to participate in a research study examining families and relationships if...

you lived in a home with the same caregiver until age 16
and
have at least one sibling.

If you choose to participate, you can earn extra credit or obtain research hours in various PSYC courses!!

Register on SONA
Or email familiesandrelationships@gmail.com
APPENDIX B

INFORMED CONSENT
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

**Title of Study:** Families and Relationships

**Principal Investigator:** Shelley A. Riggs, Ph.D.
University of North Texas (UNT) Department of Psychology

**Key Personnel:**
Laura Collier, B.S.
Graduate Student, Counseling Psychology
University of North Texas (UNT) Department of Psychology

**Purpose of the Study:** You are being asked to participate in a research study that involves examining the quality of family relationships and experiences in childhood as related to your current relationship strategies.

**Study Procedures:** You will be asked to fill out surveys about your individual and family history, family relationships, experience of maltreatment and trauma, and your current relationship strategies that will take about 45-60 minutes of your time.

**Foreseeable Risks:** The potential risks involved in this study may include emotional discomfort or distress regarding the content of the surveys, which (among other things) inquires about maltreatment and trauma, experiences and relationships in childhood and current relationships. Should you desire to talk with someone about any current problems in your life, you will be provided with referral sources for counseling services at agencies in the area at the end of the study.

**Benefits to the Subjects or Others:** Your participation in this project may not directly benefit you, but it is expected to help us learn more about family relationships and how they function.

**Compensation for Participants:** With the approval of the specified course professor, you will receive extra credit towards the course that you specify through SONA system.

**Procedures for Maintaining Confidentiality of Research Records:** To protect your confidentiality/anonymity, signed consent forms and coded survey results will be maintained in separate locations. Records will be stored in a locked filing cabinet, in a locked research room. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

**Questions about the Study:** If you have any questions about the study, you may contact Laura Collier.
**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Participants’ Rights:**

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Shelley A. Riggs, Ph.D., Ms. Collier or a research assistant has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

________________________________
Printed Name of Participant

________________________________
Signature of Participant                                     Date

**For the Principal Investigator or Designee:**

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

________________________________
Signature of Principal Investigator or Designee        Date

Office of Research Services
University of North Texas
Last Updated: August 9, 2007
APPENDIX C

DEMOGRAPHIC FORM
Background Information Questionnaire

Please select a response to each item by either marking an “X” in the box that best describes you or your family, or filling in the blank with a response that best describes you or your family.

1. Age: ______  Date of birth: _______________

2. Sex:  ☐ Male(1)  ☐ Female(2)

3. How would you describe your ethnic-racial background?
☐ Asian American(1)  ☐ Black/African American(2)  ☐ White/(Caucasian)(3)
☐ Hispanic(4)  ☐ Middle Eastern/Arab(5)  ☐ Native American Indian(6)
☐ Biracial(7) please specify: __________________
☐ Other(8) please specify:  __________________

5. Which category best describes your current relationship status?
☐ single/never married(1)  ☐ single, but dating seriously(2)  ☐ married/partnered and living together (3)
☐ separated/divorced(4)  ☐ other(5) please explain: __________________________

6. What is the highest degree you’ve earned or the last grade in school you completed?
☐ 12th grade (H.S. diploma or GED)(1)  ☐ Technical/trade school diploma(2)
☐ Community college degree(3)  ☐ University degree(4)  ☐ Advanced degree(5)

7. Are you currently employed?  ☐ Yes, full-time(1)  ☐ Yes, part-time(2)  ☐ No(3)

8. Do you receive financial support from family?  ☐ Yes, full-support(1)  ☐ Yes, part-time(2)  ☐ No(3)

9. Have you ever sought counseling services?  ☐ Yes(1)  ☐ No(2)

10. Have you ever been diagnosed with any of the following:
☐ Yes(1)  ☐ No(2)  ☐ I have this disorder(3)

   a) Anxiety
   b) Post Traumatic Stress Disorder
   c) Obsessive Compulsive Disorder
   d) Depression
   e) Bipolar Disorder/ Manic-Depression
   f) Attention Deficit/Hyperactive Disorder
   g) Learning Disorder
   h) Substance Abuse/Substance Dependence
   i) Eating Disorder
   j) Other, please specify: __________________________
11. If you answered "yes" to any disorder in the previous question, are you currently taking medication(s) for the disorders?

☐ Yes(1) please specify: ________________________  ☐ No(2)  ☐ N/A(3) (no disorder)

----------------------------------------------------------Family Background------------------------------------------------------

12. Were you adopted?

☐ Yes(1)  ☐ No(2)

13. Were your parents married to each other at one time?

☐ Yes(1)  ☐ No(2)

14. Did your parents divorce?

☐ Yes, before I was 16(1)  ☐ Yes, after I turned 16(2)  ☐ No(3)

15. What was the approximate yearly income of your family?

☐ $20,000 - $39,999(1)  ☐ $40,000 - $59,999(2)  ☐ $60,000 - $79,999(3)

☐ $80,000 - $99,999(4)  ☐ $100,000 - $149,999(5)  ☐ Over $150,000(6)

16. How many siblings do you have? _____

Please identify each of your siblings in the items below and respond to the best of your knowledge. If you have more than five siblings, please report on the five siblings who had the greatest impact on your life, either positive or negative.

(1) Name _________________ Age ___  ☐ Biological(1)  ☐ Half Sibling(2)  ☐ Step Sibling(3)  ☐ Adopted(4)

(1a) Did you live with this sibling at anytime?

☐ Yes(1)  ☐ No(2)

(1b) If yes, for how long did you live with this sibling?

☐ 6 months or less(1)  ☐ 6 months to 1 year(2)  ☐ 1 year to 2 years(3)

☐ about 2 years(4)  ☐ 3 years or more(5)

(1c) At what age did you begin living with this sibling? Age _____

(1d) On the average, how often do you currently visit/see this sibling?

☐ Weekly(1)  ☐ Monthly(2)  ☐ Yearly(3)  ☐ < once per year(4)

(1e) On the average, how often do you currently communicate with this sibling (i.e. in person, via phone, text, or social networking)?

☐ not at all(1)  ☐ 1-5 times per month(2)  ☐ 6-10 times per month(3)

☐ 11-15 times per month(4)  ☐ 16-20 times per month(5)  ☐ 21+ times per month(6)

(2) Name _________________ Age ___  ☐ Biological(1)  ☐ Half Sibling(2)  ☐ Step Sibling(3)  ☐ Adopted(4)

(2a) Did you live with this sibling at anytime?

☐ Yes(1)  ☐ No(2)

(2b) If yes, for how long did you live with this sibling?

☐ 6 months or less(1)  ☐ 6 months to 1 year(2)  ☐ 1 year to 2 years(3)

☐ about 2 years(4)  ☐ 3 years or more(5)

(2c) At what age did you begin living with this sibling? Age _____
(2d) On the average, how often do you currently visit/see this sibling?

☐ Weekly(1)  ☐ Monthly(2)  ☐ Yearly(3)  ☐ < once per year(4)

(2e) On the average, how often do you currently communicate with this sibling (i.e. in person, via phone, text, or social networking)?

☐ not at all(1)  ☐ 1-5 times per month(2)  ☐ 6-10 times per month(3)
☐ 11-15 times per month(4)  ☐ 16-20 times per month(5)  ☐ 21+ times per month(6)

(3) Name ___________ Age ___  ☐ Biological(1)  ☐ Half Sibling(2)  ☐ Step Sibling(3)  ☐ Adopted(4)

(3a) Did you live with this sibling at anytime?  ☐ Yes(1)  ☐ No(2)

(3b) If yes, for how long did you live with this sibling?

☐ 6 months or less(1)  ☐ 6 months to 1 year(2)  ☐ 1 year to 2 years(3)
☐ about 2 years(4)  ☐ 3 years or more(5)

(3c) At what age did you begin living with this sibling?  Age ___

(3d) On the average, how often do you currently visit/see this sibling?

☐ Weekly(1)  ☐ Monthly(2)  ☐ Yearly(3)  ☐ < once per year(4)

(3e) On the average, how often do you currently communicate with this sibling (i.e. in person, via phone, text, or social networking)?

☐ not at all(1)  ☐ 1-5 times per month(2)  ☐ 6-10 times per month(3)
☐ 11-15 times per month(4)  ☐ 16-20 times per month(5)  ☐ 21+ times per month(6)

(4) Name ___________ Age ___  ☐ Biological(1)  ☐ Half Sibling(2)  ☐ Step Sibling(3)  ☐ Adopted(4)

(4a) Did you live with this sibling at anytime?  ☐ Yes(1)  ☐ No(2)

(4b) If yes, for how long did you live with this sibling?

☐ 6 months or less(1)  ☐ 6 months to 1 year(2)  ☐ 1 year to 2 years(3)
☐ about 2 years(4)  ☐ 3 years or more(5)

(4c) At what age did you begin living with this sibling?  Age ___

(4d) On the average, how often do you currently visit/see this sibling?

☐ Weekly(1)  ☐ Monthly(2)  ☐ Yearly(3)  ☐ < once per year(4)

(4e) On the average, how often do you currently communicate with this sibling (i.e. in person, via phone, text, or social networking)?

☐ not at all(1)  ☐ 1-5 times per month(2)  ☐ 6-10 times per month(3)
☐ 11-15 times per month(4)  ☐ 16-20 times per month(5)  ☐ 21+ times per month(6)

(5) Name ___________ Age ___  ☐ Biological(1)  ☐ Half Sibling(2)  ☐ Step Sibling(3)  ☐ Adopted(4)

(5a) Did you live with this sibling at anytime?  ☐ Yes(1)  ☐ No(2)
(5b) If yes, for how long did you live with this sibling?

- □ 6 months or less (1)
- □ 6 months to 1 year (2)
- □ 1 year to 2 years (3)
- □ about 2 years (4)
- □ 3 years or more (5)

(5c) At what age did you begin living with this sibling? Age _____

(5d) On the average, how often do you currently visit/see this sibling?

- □ Weekly (1)
- □ Monthly (2)
- □ Yearly (3)
- □ < once per year (4)

(5e) On the average, how often do you currently communicate with this sibling (i.e. in person, via phone, text, or social networking)?

- □ not at all (1)
- □ 1-5 times per month (2)
- □ 6-10 times per month (3)
- □ 11-15 times per month (4)
- □ 16-20 times per month (5)
- □ 21+ times per month (6)

17. Did you experience the death of a close family member(s) (e.g. parent, sibling, grandparent) before you were 16 years of age? □ Yes (1) □ No (2)

(a) If yes, please check the relevant relationship(s) of the deceased family member(s) to you?

- □ Mother (1)
- □ Father (2)
- □ Stepfather (3)
- □ Stepmother (4)
- □ Close Family Friend (5)
- □ Sister (6)
- □ Brother (7)
- □ Grandfather (8)
- □ Grandmother (9)
- □ Other (10) ________________

18. Have your biological parents or biological siblings ever been diagnosed with any of the following? Please indicate with a check of X in the box next to the disorder and under the specific relative.

Father (1)  Mother (2)  Sibling (3)
(Please specify which sibling in the space provided)

- a) General Anxiety Disorder
- □
- □
- □

- b) Panic Disorder/Panic Attacks
- □
- □
- □

- c) Phobia
- □
- □
- □

- d) Post Traumatic Stress Disorder
- □
- □
- □

- e) Obsessive Compulsive Disorder
- □
- □
- □

- f) Dysthymia
- □
- □
- □

- g) Major Depressive Disorder
- □
- □
- □

- h) Bipolar Disorder
- □
- □
- □

- i) Dissociative Disorder
- □ please specify: ________________
- □
- □
- □

- j) Personality Disorder
- □ please specify: ________________
- □
- □
- □

- k) Attention Deficit/Hyperactive Disorder
- □
- □
- □

- l) Learning Disorder
- □
- □
- □

- m) Mental Retardation
- □
- □
- □

- n) Substance Abuse/Substance Dependence
- □
- □
- □

- o) Eating Disorder
- □
- □
- □

- p) Other, please specify: ________________
- □
- □
- □
REFERENCES


doi:10.1111/1467-8624.00164


Mikulincer, M., & Shaver, P. R. (2007). Boosting attachment security to promote mental health, prosocial values, and inter-group tolerance. Psychological Inquiry, 18(3), 139-156. doi:10.1080/10478400701512646


doi:10.1177/0265407500176001


doi:10.1177/0192513X06289103


doi:10.1080/10926770903475968


doi:10.1093/ptr/11.4.455


doi:10.1177/0265407597145002


