Attachment and Social Behavior in Middle Childhood: A Comparison of Maltreated and Non-Maltreated Children

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Dedication

This dissertation is dedicated to my mother and grandmother, and my husband, Bharathi.

Abstract

This study examined perceptions of attachment and social behavior in an ethnically diverse, low-income sample of maltreated (N = 334) and non-maltreated (N = 339) 6- to 12-year old children who attended a summer camp research program. Children completed questionnaires assessing their perceptions of security and propensity toward avoidant or preoccupied coping with their mothers, and their counselors and peers rated their social behavior. Consistent with previous research, avoidant coping was negatively correlated with both preoccupied coping and security, whereas preoccupied coping was positively correlated with security. Avoidant coping was more common among boys and showed an age-related increase that was most pronounced in girls. In contrast, preoccupied coping was more common among girls and showed an age-related decrease that was comparable for girls and boys. Children who reported high levels of preoccupied coping were less liked and accepted by their peers, and those who reported high levels of security were seen as less withdrawn by their counselors. Overall, maltreated children reported slightly lower levels of avoidant coping, but did not differ from non-maltreated children in terms of security or preoccupied coping. When attachment was examined in relation to maltreatment characteristics, early maltreatment was associated with more avoidant and less preoccupied coping, whereas recent maltreatment was associated with less security. Counselors and peers perceived maltreated children as less likeable and more prone to problematic social behaviors, but there was no indication that attachment mediated the association between maltreatment and these behaviors.

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Chapter 1: Introduction

Secure attachment to a caregiver provides children with resources that help them adapt to the social transitions of middle childhood. Conversely, insecure attachment can lead to problems that intensify during these transitions, especially among children who have experienced maltreatment (Sroufe, 2005). Research that examines concurrent associations between attachment and social behavior during middle childhood can help explain how these problems develop, and how they can be prevented or corrected.

Attachment is recognized as an important context for socialization that has a significant and lasting influence on behavior. Children who develop secure attachments to their caregivers learn to expect consistent support, even as they increase their independence and involvement with peers during middle childhood. Children who develop insecure attachments, in contrast, learn to expect limited or inconsistent support, and may respond by avoiding contact with their caregivers or resisting separation (Kerns, 2008). Social problems are common among such children (Bolger & Patterson, 2003; Cicchetti & Toth, 2005) and may affect boys and girls differently (Del Giudice & Belsky, 2010). Moreover, attachment appears to influence the contribution of extreme variations in care, such as maltreatment, to social problems (Alink, Cicchetti, Rogosch, & Kim, 2009; Kim & Cicchetti, 2004; Shields, Ryan, & Cicchetti, 2001). To assess these possible effects, the current study examines associations between maltreatment, attachment, and behavior with peers in a sample of 6- to 12-year-old boys and girls attending a summer camp. Results are discussed in terms of their contribution to

knowledge about typical development and potential applications in prevention and intervention.

Chapter 2: Development and Socialization in Middle Childhood

Developmental Achievements of Middle Childhood

The developmental achievements of middle childhood are part of a pattern of adaptation that reflects past and current contextual influences. Research examining these influences has helped to explain variations in behavior among individuals and across time, including potentially problematic variations, as well as compensatory processes that protect against them (Cicchetti & Toth, 2009; Rutter & Sroufe, 2000). Collectively, this research indicates that middle childhood is associated with improved control of thought and behavior, as well as more extensive participation in a variety of social activities (Bjorklund, 2004).

Between approximately 6 and 12 years of age, children experience significant increases in physical strength and coordination (Thomas & French, 1985) that are paralleled by changes in brain structure and connectivity (Lenroot & Giedd, 2010; Tau & Peterson, 2010). These changes coincide with advances in reasoning skills that support resourceful and independent behavior. Children are able to represent, classify, and compare various components of a problem, and they realize that certain characteristics are not affected by changes in appearance. These abilities enable them to solve problems more effectively, although their thinking is neither as systematic nor as abstract as it will be in adolescence (Piaget & Inhelder, 1969). Children also show gains in the speed and accuracy of information processing (Kail, 2000), and they are better able to maintain access to information in preparation for action (Gathercole, 1999) and commit new information to memory (Schneider, 2011). Furthermore, they demonstrate greater

awareness and control over their thoughts and actions in a variety of situations (Eisenberg, Smith, Sadovsky, & Spinrad, 2004). The development of these skills contributes to their ability to appreciate differences in perspective, make social comparisons, and take part in complex social exchanges (Shaffer, 2008).

Children spend a significant amount of their time in the company of peers during middle childhood (Larson, 2001), and peer relations are an important context for socialization. Peers provide children with experiences that help them to learn about themselves and develop their ability to communicate, cooperate, and resolve conflicts (Harter, 1999). Many of these experiences take place in the context of rule-based, structured activities that involve a large number of peers (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). Participation in these activities is facilitated by improvements in behavioral control and changes in the way children express aggression, including a reduction in physical aggression and increases in verbal and indirect aggression. Concerns about social behavior take precedence over control of possessions as a source of conflict among peers, and the use of coercion to resolve conflict decreases with age (Laursen & Pursell, 2011). Children are also more selective in their prosocial actions, although the frequency of these actions does not change substantially during middle childhood (Parker et al., 2006).

As their peer networks become larger and more complex, social status becomes an important issue for children. This trend has most commonly been assessed using measures that assign children to social status categories based on the views of their peers (Coie, Dodge, & Coppotelli, 1982). Compared with average children, popular children

are seen as more sociable, cooperative, and capable of resolving conflicts without resorting to aggression. In contrast, controversial children are seen as socially skilled, but also prone to controlling or reckless behavior. Shy or reserved behavior is common among neglected children, and a combination of aggression or withdrawal and poor social skills is typical of rejected children (Parker et al., 2006). Research has shown that rejected children, in particular, are at risk for behavior problems, negative attitudes toward school, and poor school performance (McDougall et al., 2001), and that they interpret the behavior of their peers in ways that are counterproductive to successful social interaction. Specifically, they have been shown to perceive ambiguous behavior as a sign of aggression or rejection, and to react with excessive anger or anxiety (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). This tendency influences the way children are perceived by their peers and contributes to developmental continuity in social status, especially among rejected children (Cillessen, Bukowski, & Haselager, 2000).

Attention to the traits and behaviors of potential social partners also increases during middle childhood. This developmental pattern contributes to increased separation of social activity among boys and girls (Maccoby, 1990), along with a tendency for children to associate with peers who share similar background characteristics (Kupersmidt, De Rosier, & Patterson, 1995; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). Social categories remain important throughout middle childhood, but children adopt more moderate views and show greater awareness of variations within categories with age (Killen, Lee-Kim, McGlothlin, & Stangor, 2002; Powlishta, Serbin, Doyle, & White, 1994). At the same time, involvement in friendships becomes more

prevalent, as well as more reciprocal and stable. As these processes continue, children come to view friendships as enduring connections characterized by mutual trust, loyalty, and support (Hartup, 1996; Parker et al., 2006). Children who have a best friend tend to be better accepted by their peers; however, this is not always the case, and friendships may serve a protective function among children who experience low levels of acceptance (Parker & Asher, 1993).

Children learn to reflect on their behavior and make social comparisons as their peer networks develop. As a result, they are more concerned about their social status and aware of how their own characteristics and abilities compare to those of their peers. Children also appreciate that certain traits remain stable over time and can be used to predict behavior, and they start to refer to these traits in their descriptions of themselves and others (Ruble & Dweck, 1995). At the same time, children are able to consider the type of person they would like to be and compare their current perceptions of themselves to that ideal (Harter, 1998). Children become more accurate in their perceptions of themselves, so that by the latter half of middle childhood, their views generally match those of their peers and teachers (Harter, 1999). Their capacity for social comparison is accompanied by improvements in perspective taking and reciprocity that contribute to the development of moral reasoning and behavior. Considerations about shared support, respect, and responsibility replace appeals to external authority as the basis of moral reasoning during middle childhood (Kohlberg, 1984). Children also learn to differentiate social conventions from prescriptive rules that apply generally across situations (Smetana, 2006). As age increases, they are more likely to apply prescriptive rules to

their own behavior, and to experience remorse following transgressions (Malti & Keller, 2010). Children's ability to control their behavior in this way contributes to changes in the way they interact with parents.

Significant changes in the parent-child relationship take place during middle childhood. Children reduce the amount of time they spend in close proximity to their parents, but retain a need for parental availability and support (Kerns, 2008; Siebert & Kerns, 2009). Parents, in turn, expect children to respond to reasoning and explanation, and to be able to control their behavior without extensive supervision (Maccoby, 1984). Several lines of evidence suggest that children are less likely to develop conduct problems or experience peer rejection if their parents monitor their activities (Ladd, 1999). This effect has been attributed to efforts on the part of parents to seek information; however, an alternative interpretation is that the initiative to share information comes primarily from children (Kerr, Stattin, & Burk, 2010). Actively monitoring and structuring children's activity is not the only way that parents influence their children's involvement with peers. Parents also provide children with expectations about relationships that they apply in their interactions with peers (Parker et al., 2006). Specifically, their acceptance, ability to set clear limits, and respect for their children as individuals contributes to a positive sense of self that children carry forward into their peer relations (Coopersmith, 1967; Harter, 1999). In this respect, parents and peers exert complementary influences on social development during middle childhood.

Attachment is an important predictor of adaptation as children increase their independence and activities with peers. Almost all children develop a selective and

lasting connection to a parent or caregiver who provides them with a secure base as they explore their surroundings and a source of reassurance and protection when they are threatened. Children are also thought to construct representations of attachment that reflect their experience and contribute to consistent individual variations in the way they respond to social situations (Bowlby, 1969), as well as developmental changes in the nature and intensity of their attachment behavior. Notably, the ability to draw on attachment representations to anticipate the behavior of caregivers enables children to cope more effectively with separation by middle childhood (Kerns, 2008). Measures that are appropriate for children who have these skills have only recently become available; however, research conducted with these measures has already revealed associations between attachment and a variety of social and developmental processes in middle childhood.

Measurement and Developmental Correlates of Attachment in Middle Childhood

Associations between attachment and social behavior in middle childhood are shaped by events that take place early in development. Attachment, as conceptualized by Bowlby (1969), is an innate behavioral system that predisposes infants to seek the support and protection of a particular caregiver. The attachment system helps infants adaptively balance exploration and social contact in ways that are contingent upon the availability and attentiveness of this person (Ainsworth, Blehar, Waters, & Wall 1978; Marvin & Britner, 1999). Children later construct attachment representations that allow them to better anticipate the responses of their caregivers. Together with improvements in behavioral control, these representations help preschool children tolerate situational

variations in the level of support their caregivers can provide (Bretherton & Munholland, 1999). Attachment representations remain important as children become less dependent on their caregivers and expand their social networks during middle childhood, and they continue to influence behavior in close relationships with friends and romantic partners in adolescence and adulthood (Thompson, 2008).

Attachment representations correspond to the care children have received, and are believed to contribute to coherent patterns of behavior. These patterns are commonly assessed with a procedure developed by Ainsworth and colleagues (Strange Situation: Ainsworth et al., 1978; Ainsworth & Wittig, 1969) that involves separations from a caregiver when infants are left alone or in the presence of a stranger for several minutes. Infants who have a secure attachment are reassured and able to attend to exploration when their caregiver returns following a separation. This response is typical of about 60% of infants in low-risk samples, and has been associated with attentive and appropriate care that supports effective regulation of attention and behavior. About 15% of infants in low-risk samples have an avoidant attachment that is reflected in angry and indifferent responses to separation, and has been associated with rejection and intrusive care. Another 10% have a resistant attachment that is reflected in anxious and ambivalent responses, and has been associated with inconsistent care (Ainsworth et al., 1978; van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999; Weinfield, Sroufe, Egeland, & Carlson, 2008). About 15% of infants have a disorganized attachment that is indicated by excessively apprehensive, conflicted, or contextually inappropriate responses, sometimes in combination with a primary secure or insecure pattern (Main &

Solomon, 1986; van Ijzendoorn et al., 1999). This response is typical of infants whose care has been sufficiently compromised by extreme insensitivity, maltreatment, depression, or dissociation that they experience fear in the presence of a caregiver who is also their primary source of comfort (Lyons-Ruth & Jacobvitz, 2008). Among infants exposed to maltreatment or considered at risk, rates of insecure and disorganized attachment can reach 60-90% (van Ijzendoorn et al., 1999). These infants rarely attain a secure attachment later in development (Main, Hesse & Kaplan, 2005; Sroufe, 2005), although those who have a disorganized attachment may transition toward role reversal and efforts to control their caregiver starting in preschool (Main & Cassidy, 1988; van Ijzendoorn et al., 1999).

The behaviors associated with attachment become more complex and varied as children learn to communicate and control their behavior. Attachment in preschool children can be assessed based on behavior toward a caregiver following an extended separation (e.g., Cassidy-Marvin System: Cassidy & Marvin, 1992; Main-Cassidy System: Main & Cassidy, 1988; Preschool Assessment of Attachment: Crittenden, 1992), responses to picture- or story-based projective tasks (e.g., Attachment Story Completion Task: Bretherton, Ridgeway, & Cassidy, 1990; Attachment Doll-Play Interview: Oppenheim, 1997), or a structured assessment completed by parents or trained researchers (Attachment Q-Set: Waters & Deane, 1985). Associations among these measures have been reported in some, but not all cases, and several measures have been related to infant attachment patterns (see Solomon & George, 2008; Spieker & Crittenden, 2010; Stevenson-Hinde & Verschueren, 2002). This is especially true of

measures that were developed to classify attachment patterns in preschool children, rather than assess variation along dimensions such as security, constructive problem-solving, or emotional expression.

Attachment patterns remain influential in later development, and have received considerable attention in research with adolescents and adults. This research has relied largely on self-reported perceptions of current relationships (e.g., Relationships Styles Questionnaire, Experiences in Close Relationships: see Brennan, Clark & Shaver, 1998; Crowell, Fraley, & Shaver, 2008) or narrative coherence in a structured interview assessing early experience with a caregiver (Adult Attachment Interview: Main & Goldwyn, 1998). These approaches are not equivalent (Roisman et al., 2007), although they both differentiate secure and insecure patterns of attachment. Adolescents and adults who have a secure attachment provide coherent descriptions of past events and are competent in their current relationships. Those who have an insecure attachment may respond in ways that are consistent with an anxious (preoccupied) pattern of continued angry or passive involvement in past events and efforts to avoid abandonment by current partners, or with an avoidant (dismissing) pattern of constrained descriptions of past events and lack of intimacy in current relationships. Additionally, some researchers recognize a fearful-avoidant (disorganized) pattern of incomplete resolution of past trauma and fear of being hurt in current relationships (Hesse, 1999; Crowell et al., 2008).

Attachment patterns are moderately consistent across intervals that span a few weeks to several years (Weinfield, Sroufe, & Egeland, 2003); however, rates vary depending on measurement and sample characteristics. Notably, the stability of secure

attachment typically exceeds the stability of specific insecure patterns (Fraley, 2002; Scharfe & Bartholomew, 2005), and secure attachment is more reliably concordant between parents and children (van Ijzendoorn, 1995). The stability of attachment to caregivers in low-risk samples is about 50-75% within infancy (Belsky, Campbell, Cohn, & Moore, 1996; Thompson, 1998), and 70-80% between infancy and adulthood (Hamilton, 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000) however, in high-risk or maltreated samples, it is just 40-60% within infancy (Barnett, Ganiban, & Cicchetti, 1999; Egeland & Sroufe, 1981; Lyons-Ruth, Repacholi, MacLeod, & Silva, 1991; Schneider-Rosen, Braunwald, Carlson, & Cicchetti, 1985; Vaughn, Egeland, Sroufe, & Waters, 1979; Vondra, Hommerding & Shaw, 1999) and 40-50% between infancy and adulthood (Weinfield et al., 2003). Changes in attachment during childhood have been related to events that alter actual or perceived care, including parental death or extended absence, onset of medical or psychiatric problems in parents or children, and child abuse or neglect (Bowlby, 1953; Waters et al., 2000). Attachment is believed to be more susceptible to change during developmental transitions (Thompson, 2000), and to be influenced by the development of skills that allow children to actively reflect on their attachment representations (Main, 1991).

Attempts to clarify pathways that link attachment in different developmental periods have been complicated by measurement issues. Although some attachment measures provide convergent information (Solomon & George, 2008), measures that assess attachment to a caregiver in childhood are not typically correlated with measures that assess attachment to a romantic partner in adolescence or adulthood (Del Giudice &

Belsky, 2010). Moreover, measures that rely on different sources or types of information are not always correlated, even if they are administered concurrently (Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Pederson & Moran, 1996). This problem may be exacerbated by the common practice of comparing attachment patterns, which has been criticized based on research indicating that variation in attachment is likely continuous (Fraley & Spieker, 2003). An additional concern is that developmental processes may alter the expression of attachment as resistant children learn to control their caregivers through coercive behavior, and avoidant children learn to appease them through compulsive care or compliance (Crittenden, 1999; Crittenden, Kozlowska, & Landini, 2010). This possibility has proved difficult to address, in part, because research on attachment has been confined primarily to early childhood or adulthood, with limited attention to the intervening years of middle childhood and early adolescence. The recent introduction of measures that target these periods has the potential to result in a more complete description of attachment and the processes that affect its development.

The availability of several recently introduced attachment measures has helped to provide insights into the developmental transitions that take place during middle childhood. Currently, attachment measures in middle childhood consist primarily of picture- or story-based projective tasks (e.g., Manchester Child Attachment Story Task: Green, Stanley, Smith, & Goldwyn, 2000; Separation Anxiety Test: Resnick, 1993), child interviews (e.g., Attachment Interview for Childhood and Adolescence: Ammaniti, van Ijzendoorn, Speranza, & Tambelli, 2000; Child Attachment Interview: Target, Fonagy, & Shmueli-Goetz, 2003), and child questionnaires (e.g., Security Scale: Kerns, Klepac, &

Cole, 1996; Coping Strategies Questionnaire: Finnegan, Hodges, & Perry, 1996). These measures differ in their intended age range, and in the aspects of attachment they assess. Some of them have been associated with concurrent measures of attachment in children (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000; Goldwyn, Stanley, Smith, & Green, 2000; Granot & Mayseless, 2001; Kerns, Tomich, Aspelmeier, & Contreras, 2000; Shmueli-Goetz, Target, Fonagy, & Datta, 2008; see Kerns et al., 2007 and Kerns et al., 2008 for exceptions) or their parents (Target et al., 2003; Goldwyn et al., 2000), and those that assess attachment to mothers and fathers separately show moderate concordance (Diener, Isabella, Behunin, & Wong, 2007; Kerns, Schlegelmilch, Morgan, & Abraham, 2005; Shmueli-Goetz et al., 2008; Verschueren & Marcoen, 1999). Although predictive associations with infant and adult attachment have not been closely examined (no association with infant attachment was reported by Ammaniti, Speranza, & Fedele, 2005 and Bohlin, Hagekull, & Rydell, 2000), several measures have been shown to be reliable within middle childhood (see Kerns et al., 2005). Research with projective tasks and interviews has typically indicated more avoidant than anxious attachment (Ammaniti et al., 2000; Green et al., 2000; Shmueli-Goetz et al., 2008), and questionnaires have indicated the reverse pattern (Booth-Laforce et al., 2006; Karavasilis, Doyle, & Markiewicz, 2003; Kerns et al., 2000; Kerns, Tomich, & Kim, 2006), at least among girls (Finnegan et al., 1996; Hodges et al., 1999). A shift toward more avoidant or less anxious attachment has also been noted in research with interview and questionnaire measures in late middle childhood (Ammaniti et al., 2000; Hodges et al., 1999; Kerns et al., 2006). Attachment measures in middle childhood have been related to parental

behavior (Karavasilis et al., 2003; Kerns, Aspelmeier, Gentzler, & Grabill, 2001; Leibowitz, Ramos-Marcuse, & Arsenio, 2002), and to various indicators of adaptation, including social competence and acceptance (Bohlin et al., 2000; Futh, O'Connor, Matias, Green, & Scott, 2008; Kerns et al., 1996; Verschueren & Marcoen, 2002), emotional competence (Colle & Del Giudice, 2011; Contreras et al., 2000; Kerns et al., 2006; Kerns et al., 2007), school adjustment (Granot & Mayseless, 2001; Kerns et al., 2000), and emotional and behavioral problems (Brumariu & Kerns, 2008; Futh et al., 2008; Hodges et al., 1999).

Among the most extensively validated measures of attachment in middle childhood are questionnaires that assess security and coping. These measures are sensitive to quantitative variation in attachment, and can be administered by researchers with no special training. The Security Scale (Kerns et al., 1996) measures perceived communication, accessibility, and support of a caregiver, and the Coping Strategies Questionnaire (Finnegan et al., 1996) measures insecurity, as reflected in anticipated preoccupied (intense anxiety and concern, continued contact with a caregiver) or avoidant (anger or indifference, inability to seek reassurance or task-relevant support) responses to various situations. These measures are appropriate for use in late middle childhood (approximately 8-12 years of age), and can be viewed as complementary. They have been shown to reflect changes in the way children perceive and relate to their caregivers, and have contributed to an understanding of the developmental correlates of attachment in middle childhood.

Attachment behavior is directed primarily toward parents in middle childhood (Kerns et al., 2006; Kobak, Rosenthal, & Serwik, 2005), and children who have developed a secure attachment expect that their parents will allow them to exercise their independence, but also remain responsive and accessible. Accordingly, age-appropriate levels of parental support and supervision have been shown to contribute to attachment security and low levels of avoidant coping during middle childhood (Karavasilis et al., 2003; Kerns et al., 2001; Kerns et al., 2000). There is also evidence of a moderate negative correlation between avoidant and preoccupied coping during middle childhood, and low attachment security has been associated with the former, but not the latter (Finnegan et al., 1996; Kerns et al., 2000). Additionally, avoidant coping has been associated with peer-rated externalizing problems, while preoccupied coping has been associated with peer-rated internalizing problems and victimization (Card & Hodges, 2003; Finnegan et al., 1996). In contrast, attachment security has been shown to predict peer acceptance and involvement in reciprocated friendships (Kerns et al., 1996). Collectively, these results suggest that attachment has a significant influence on social adaptation during middle childhood.

Recently, researchers have reported sex differences in the way insecure children relate to their caregivers. Responses to questionnaires and some projective tasks suggest a preponderance of avoidant coping among boys and preoccupied coping among girls (Del Giudice, 2009), and this difference may anticipate attachment in adult relationships. At moderate levels of risk, avoidant coping and self-interested behavior are considered typical of men, whereas preoccupied coping and dependent behavior are considered more

typical of women (although women may shift toward avoidant coping as risk increases; Belsky, Steinberg, & Draper, 1991; Del Giudice & Belsky, 2010). Among both children and adults, sex differences are influenced by culture and are restricted to measures that reflect current attachment (Del Giudice, 2009). Because continuity between middle childhood and adulthood has not been addressed for many types of attachment measures, reports of sex differences in insecure attachment remain controversial (Bakermans-Kranenburg & van Ijzendoorn, 2009). When these differences are found, they tend to parallel changes in peer relations that take place during middle childhood.

Measurement and Developmental Correlates of Peer Relations in Middle Childhood

As children become more independent, peer relations assume a significant role in their socialization (Ladd, 1999). This transition is supported by the development of skills that allow children to coordinate social interactions and avoid or resolve conflicts. Children who are accepted by their peers have better social skills and are less susceptible to emotional and behavioral problems than children who are rejected (Coie, et al., 1982; De Rosier, Kupersmidt, & Patterson, 1994). In addition, accepted children tend to conform to social expectations concerning sex differences in behavior (Martin & Ruble, 2010). Because social acceptance remains relatively stable across time, these tendencies may have significant consequences for later development (McDougall, Hymel, Vaillancourt, & Mercer, 2001).

Social acceptance is typically measured with nomination or rating systems during middle childhood. A nomination system includes descriptions of positive and negative social characteristics, such as leadership or aggression. Children are asked to name a

peer who fits each description, and results are combined to create composite acceptance and rejection scores, or to classify children along dimensions of social preference and visibility (popular, controversial, neglected, rejected, or average). An alternative to this approach involves asking children to rate how much they like each of their peers and then averaging the ratings received by each child. Although rating systems reflect the views of a larger number of children, nomination systems provide a more comprehensive assessment of social behavior (Maassen, van der Linden, & Akkermans, 1997).

Assessments completed by teachers provide additional information about peer relations in middle childhood. Teacher-rated behavior problems are more common among rejected than accepted children (DeRosier, et al., 1994; French & Waas, 1985). Children who are considered aggressive or withdrawn by their teachers are particularly likely to be rejected by peers. Aggressive behavior is the best predictor of rejection throughout childhood, especially among boys. Associations between withdrawn behavior and rejection increase during middle childhood, and are somewhat stronger among girls than boys (Coie, Dodge & Kupersmidt, 1990). Because teachers and peers provide information that is at least moderately convergent, assessments completed by teachers are considered helpful in identifying possible causes of acceptance or rejection (Wu, Hart, Draper, & Olsen, 2001; LaGreca, 1981).

Regardless of how it is measured, peer acceptance is a central component of academic and social adaptation in middle childhood. For example, the incidence and quality of reciprocated friendships is higher among accepted children, although rejected children may nevertheless report involvement in satisfactory friendships (Parker &

Asher, 1993). In addition, rejected children are at risk for behavior problems and delinquency, as well as low academic achievement, grade retention, and eventual drop out (Parker & Asher, 1987; Rubin, Bukowski, & Parker, 1998). The adverse effects of rejection are apparent even after concomitant sources of risk, such as aggression and social disadvantage, are controlled (DeRosier et al., 1994). Furthermore, assessments completed by peers and teachers at multiple time points indicate that rejection has relatively stable and reciprocal associations with behavioral and academic problems (Chen, Rubin, & Li, 1997; Welsh, Parke, Widaman, & O'Neil, 2001). These associations may be influenced by attachment, given that attachment problems contribute to aggressive and withdrawn behaviors that tend to result in rejection (see Schneider, Atkinson, & Tardif, 2001).

Associations between Attachment and Peer Relations

Attachment is thought to affect peer relations by influencing the development of social skills and expectations. Associations between attachment and peer relations have been reported in a number of studies, and a meta-analysis by Schneider et al. (2001) confirmed that attachment influences social behavior and acceptance, particularly in the context of friendship. The results of this meta-analysis apply primarily to infant and preschool measures, although middle childhood measures tend to produce similar results. Specifically, a secure attachment in middle childhood has been associated with acceptance by peers (Granot & Mayseless, 2001; Kerns et al., 1996), although support for this association is inconsistent (see Lieberman, Doyle, & Markiewicz, 1999; Verschueren & Marcoen, 2002, 2005). Children who report a secure attachment also have better

social skills according to their peers (Yunger, Corby, & Perry, 2005), and teachers (Contreras et al., 2000). Perhaps as a result, these children experience more companionship, support, and responsiveness in their friendships (Kerns et al., 1996; Lieberman at al., 1999). Because children tend to resemble their friends on measures of attachment (Hodges et al., 1999), friendships may reinforce attachment patterns, contributing to developmental continuity.

Children learn about acceptable standards of behavior through their interactions with peers, and this process is associated with the development of sex differences in behavior. A clear and consistent preference for companions of the same sex develops in preschool and intensifies during middle childhood (La Freniere, Strayer, & Gauthier, 1984). Sex differences in behavior also become apparent as boys increasingly take part in activities that promote competition, and girls take part in activities that promote social cohesion (Rose & Rudolph, 2006). Children are likely to be rejected by peers if their behavior regularly contradicts this pattern (Rogosch & Newcomb, 1989) or violates informal social rules that limit interaction between boys and girls. Repeated violation of such rules has been associated with an increased likelihood of rejection among 9- to 12-year-old children who had an insecure attachment as infants (Sroufe et al., 1993).

Attachment affects the behavior of boys and girls differently, even before middle childhood. Specifically, preschool boys with insecure attachments have been reported to appear more aggressive and controlling during play, whereas preschool girls with insecure attachments have been reported to appear more dependent and compliant (Turner, 1991). Additionally, research with low-income samples has sometimes shown

that disorganized attachment is more common or severe among infant boys than girls (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Lyons-Ruth, Bronfman, & Parsons, 1999). A possible explanation for this effect is that boys tend to respond to erratic or threatening behaviors by becoming visibly distressed and conflicted, whereas girls tend to respond by approaching the caregiver or expressing concern (David & Lyons-Ruth, 2005). This possibility is supported by research indicating that attachment classifications correspond more closely to measures of caregiver-infant interaction among infant boys than girls (Lyons-Ruth et al., 1999).

Although the causes of sex differences in the way children relate to caregivers and peers have not been clearly identified, research indicates that the association between attachment and social behavior may be intensified in the context of risk. Children who have an insecure attachment are particularly likely to develop problems if they have been exposed to additional risks, including low income levels, inadequate social support, caregiver psychopathology, or incidents of abuse or neglect (Easterbrooks, Davidson, & Chazan, 1993; Sampson & Laub, 1993). Conversely, children who have a secure attachment may not experience problems, even when such risks are present (Belsky & Fearon, 2002; Egeland, Carlson, & Sroufe, 1993). Attachment and its contribution to social problems has been the subject of considerable interest in research examining the developmental consequences of maltreatment.

Chapter 3: Effects of Maltreatment on Development and Socialization in Middle Childhood

Maltreatment and Developmental Risk

Child maltreatment is a common problem that is associated with significant and lasting adverse effects on development. In the United States, about 1% of children are involved in a substantiated case of maltreatment each year, and another 3-4% are the subject of an unsubstantiated report (Department of Health and Human Services, 2010). The actual prevalence of maltreatment is thought to be considerably higher because many affected children never come to the attention of child protective services (Gilbert et al., 2009). A large proportion of cases involve minority children, although this may be indicative of higher rates of reporting (Drake, Lee, & Jonson-Reid, 2009). Rates of substantiated maltreatment peak in the infant and toddler years, and are nearly equal for boys and girls (Department of Health and Human Services, 2009). Assessment of cases by subtype reveals that sexual abuse tends to take place later in childhood and is more common among girls (Putnam, 2003), whereas physical abuse may be more common among boys (Cappelleri, Eckenrode, & Powers, 1993). The perpetrators of maltreatment are most often parents, except in the case of sexual abuse, which is primarily perpetrated by acquaintances or other relatives (Gilbert, 2009). Recurrence of maltreatment is common, particularly in cases involving neglect or physical abuse, and in cases involving young children (Bae, Solomon, & Gelles, 2007; Fluke, Yuan, & Edwards, 1999).

Maltreatment can be conceptualized as the product of complex interactions between children, parents, and their social and cultural contexts (Belsky, 1980; Cicchetti

& Valentino, 2006). Among children, serious behavioral, intellectual, and physical problems are salient risk factors (Sullivan & Knutson, 2000) that may be either a cause or a consequence of maltreatment (Kendall-Tackett, Lyon, Taliaferro, & Little, 2005). Children who are born preterm (Spencer, Wallace, Sundrum, Bacchus, & Logan, 2006), as the result of a complicated or accidental pregnancy (Flaherty et al., 2010), or to a young mother (Goerge, Harden, & Lee, 2008) are also at risk for maltreatment. Among parents, the risk of becoming a perpetrator of maltreatment is inversely related to income and educational attainment. Substance abuse, criminal behavior, or psychiatric problems can increase this risk (Gilbert et al., 2009), and parents who experienced abuse as children are more likely to become perpetrators themselves (Berlin, Appleyard, & Dodge, 2011). Risk is also related to family processes, including social isolation, partner conflict or violence, single parenthood or presence of a stepparent, low parental involvement, and harsh discipline (Brown, Cohen, Johnson, & Salzinger, 1998). At the community level, risk factors include low income and lack of access to resources, exposure to violent crime, residential instability, low social cohesion, and a concentration of single parent households (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007).

There is clear evidence that maltreated children experience problems in a variety of areas of social adaptation (Cicchetti & Toth, 2005). They typically do not develop secure, coherent attachment patterns in infancy (Carlson et al., 1989; Lyons-Ruth & Jacobvitz, 2008), and continue to exhibit insecure or atypical behavior toward their caregivers in preschool (Cicchetti & Barnett, 1991; Crittenden, 1988). Maltreated children may also exhibit impaired emotion differentiation and regulation skills, as well

as diminished emotional expression or extreme negativity (Camras, Sachs-Alter, & Ribordy, 1996). Physical abuse, in particular, has been associated with greater perceptual sensitivity and attention to anger (Pollak & Sinha, 2002; Pollak & Tolley-Schell, 2003), more intense reactions to simulated adult conflict (Cummings, Hennessy, Rabideu, Cicchetti, & Cummings, 1994; Hennessy et al., 1994), and a tendency to regard social situations as adversarial and respond with aggression (Dodge, Pettit, Bates, & Valente, 1995; Shields & Cicchetti, 1998). Abuse and neglect have also been associated with fewer positive responses to self-recognition (Schneider-Rosen & Cicchetti, 1984) and references to internal states among toddlers (Beeghly & Cicchetti, 1994), as well as delays in explaining behavior in terms of internal states among preschoolers (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003). As maltreated children continue to develop, they tend to express negative views of themselves, their caregivers (Toth, Cicchetti, Macfie, Maughan, & Vanmeenen, 2000; Shields et al., 2001), and their ability to control events in their lives (Bolger & Patterson, 2001b), and they may behave in ways are consistent with these views.

Patterns of thought and behavior that develop in the context of maltreatment can interfere with successful peer and academic involvement during middle childhood. A significant amount of research has shown that maltreatment contributes to increased levels of aggressive and withdrawn behavior, as well as reduced levels of prosocial behavior, such as leadership and sharing (Kaufman & Cicchetti, 1989; Salzinger, Feldman, Hammer, & Rosario, 1993). As a result, maltreated children are likely to encounter peer rejection and difficulty developing friendships during middle childhood

(Bolger & Patterson, 2001a; Price, 1998). Problems in academic performance and behavior have also been related to maltreatment, even after the effects of poverty are taken into account (Kendall-Tackett & Eckenrode, 1996; Leiter & Johnsen, 1997). Moreover, abuse and neglect are associated with an increased risk of later depression, anxiety, aggressive or violent behavior, substance abuse, and dissociation (Brown, Cohen, Johnson, & Smailes, 1999; Famularo, Kinscherff, & Fenton, 1992; Fergusson & Lynskey, 1997; Kaplow & Widom, 2007). Assessment of the developmental pathways that lead to these types of problems is a central research concern, especially in the areas of prevention and intervention.

Attachment affects the way children approach later developmental tasks (Sroufe, 2005; Thompson, 2008), and is a common target of prevention programs intended to reduce the risk of abuse and neglect. Several programs of varying duration and intensity have been shown to influence the way parents interact with their children or increase rates of secure attachment; however, almost all of these programs are designed for use in early childhood, and their effects on later attachment are not clear. A common aim of existing programs is to help parents reflect on their own attachment representations and learn to interpret their child's needs for security and exploration (Berlin, Zeanah, & Lieberman, 2008). This may be achieved through a limited number of skills-based sessions, or through an extended course of center-based sessions or home visitation during the first years of the child's life. Programs in the latter category have primarily served children exposed to extreme levels of risk, including children who have already experienced abuse or neglect (Cicchetti, Rogosch, & Toth, 2006; Toth, Cicchetti, & Kim,

2002) and children of depressed mothers (Toth, Rogosch, Manly and Cicchetti, 2006). Participation in these programs has been associated with improvements in the quality of parental care and increased rates of secure attachment.

Prevention of abuse and neglect may also be possible with programs that affect patterns of caregiver behavior related to attachment. For example, a program of regular home visitation by nurses has been shown to help at-risk mothers provide sensitive care and substantially reduce their risk of becoming a perpetrator of maltreatment (Olds et al., 2006), although these effects have proved difficult to replicate. Parent training programs and multi-component programs that combine services such as family support, preschool education, parenting skills, and child care are subject to similar concerns. In general, these programs are more effective in producing improvements in parenting and child behavior than reductions in substantiated maltreatment. Research examining the effects of prevention programs on exposure to child sexual abuse is not conclusive, and no programs are currently known to prevent emotional maltreatment (MacMillan et al., 2009; Mikton & Butchart, 2009). The limited number of evidence-based prevention programs, together with the logistical challenges of implementing existing programs, places serious constraints on efforts to address issues related to maltreatment (Toth & Manly, 2011). Further research will be necessary to identify program components and conditions that are conducive to the prevention of maltreatment.

Among children who have already experienced maltreatment, intervention may be necessary to reduce the possibility of recurrence and associated adjustment problems. In cases of severe maltreatment, this is likely to involve temporary or permanent placement

in foster care. The effects of placement vary, although children who remain in care permanently tend to adapt better than those who reunite with their parents (Bellamy, 2008). Access to additional support or treatment has been shown to improve placement stability, increase rates of secure attachment, and reduce health risk (Fisher, Chamberlain, & Leve, 2009; Kessler et al., 2008), but these resources are not available to many children in foster care. As a result, intensive family preservation services have become standard within the child protective system. At present, there is no indication that these services are effective in preventing recurrence or subsequent foster care placement (MacMillan et al., 2009). Parent training interventions that teach social skills, impulse control, and appropriate responses to child behavior have shown some promise in reducing in coercive behavior and referrals to child protective services (Chaffin et al., 2004; Wolfe & Wekerle, 1993), but it is not known whether these effects are stable across time (Lundahl, Nimer, & Parsons, 2006). Moreover, the adverse effects of abuse and neglect on children are not likely to be resolved by interventions that exclusively target parents. Treatment-based preschool programs that teach awareness of emotions, improve social skills, and reduce problem behavior may help to address these effects; however, research on these programs remains largely inconclusive due to insufficient sample sizes and a lack of standardization and controls (Reynolds, Mathieson, & Topitzes, 2009; Wasik, 1998). Additionally, because the harm associated with maltreatment is not confined to early childhood, it is important to be able to assess the effects of intervention later in development. Research addressing the associations

between maltreatment, attachment, and social adaptation during middle childhood can help to achieve this aim.

Associations between Maltreatment and Attachment

Problematic attachment patterns are extremely prevalent among children who have experienced maltreatment. Specifically, a large number of studies have shown an association between abuse or neglect and high rates of insecure and disorganized attachments (see Baer & Martinez, 2006; Cicchetti & Toth, 2005; Cyr, Euser, Bakermans-Kranenburg, & van Ijzendoorn, 2010). A majority of these studies have examined attachment in infants or toddlers based on their responses to separation, but similar results have been reported in studies with older children. The contribution of maltreatment to insecure and disorganized attachment patterns exceeds that of contextual risk factors, such as low parental income and educational attainment, presence of a single or adolescent mother, and minority status (Cyr et al., 2010). Moreover, when relevant research has been subjected to meta-analyses, results indicate that these attachment patterns are more closely related to parental characteristics than child characteristics (van Ijzendoorn, Goldberg, Kroonenburg, & Frenkel, 1992; van Ijzendoorn et al., 1999). Specifically, insecure attachment has been related to inconsistent, intrusive, or rejecting parental behavior, and disorganized attachment has been related to atypical or contradictory behavior. Among some parents, these characteristics may escalate to levels that constitute maltreatment. Notably, physical abuse has been associated with coercive, threatening, and intrusive parental behavior, and neglect has been associated with

inconsistent supervision and failure to set appropriate limits on child behavior (Bousha and Twentyman, 1984; Crittenden, 1981).

In the absence of a coherent and stable attachment, maltreated children may transition between avoidant, resistant, and disorganized patterns of behavior (Cicchetti & Toth, 2005, 2010; Lyons-Ruth & Jacobvitz, 2008). Avoidant attachment appears to be somewhat more common in cases of physical or emotional maltreatment, while resistant attachment is common in cases of neglect (Youngblade & Belsky, 1989). Research samples have included a large proportion of children who were maltreated by their mothers, and these children may be particularly likely to develop problematic attachment patterns (Manly, Cicchetti, & Barnett, 1994; Lamb, Gaensbauer, Malkin, & Schultz, 1985). Consistent with this possibility, the proportion of at-risk and maltreated children who have disorganized attachments to their mothers has been shown to increase between 12 and 18 months (Egeland & Sroufe, 1981; Lyons-Ruth et al., 1991; Vondra et al., 1999), although Crittenden (1999) has attributed this shift to the development of more complex and differentiated coercive (aggressive and helpless) or defended (compulsive compliance or caregiving) self-protective strategies as children approach preschool.

Research clearly indicates that the effects of maltreatment on attachment are not limited to early development. Abuse and neglect have been associated with insecure attachment in the late toddler years (Beeghly & Cicchetti, 1994), and insecure attachment is more stable between the toddler and preschool years in maltreated children, whereas secure attachment is more stable in non-maltreated children (Cicchetti & Barnett, 1991). In the preschool years, maltreatment is associated with insecure attachment behavior and

negative representations (Stronach et al., 2011). These effects appear to intensify with age (Toth et al., 2000), and have been related to specific characteristics of maltreatment. Toth, Cicchetti, Macfie, and Emde (1997) assessed children with a projective task, and found that those exposed to physical abuse had negative representations of their mothers and themselves, whereas those exposed to sexual abuse had comparatively positive representations of themselves. Additional research with this task revealed that children exposed to physical abuse or neglect frequently represented themselves as angry and adversarial, those exposed to sexual abuse represented themselves as likeable (Waldinger, Toth, & Gerber, 2001), and those exposed to physical or sexual abuse represented themselves as intervening to provide care (Macfie et al., 1999).

Assessment in middle childhood has revealed continued effects of maltreatment. Dean, Malik, Richards, and Stringer (1986) found that children perceived abuse and neglect by their parents as a reasonable response to their behavior, and tended to represent children as providers, rather than recipients, of care and concern. Another study showed that representations of parents assessed with a projective task were more negative and constricted, and less positive and coherent, among maltreated than non-maltreated children (Shields et al., 2001). Lynch and Cicchetti (1991) also associated maltreatment with insecure representational patterns, especially a confused pattern defined by positive and secure emotion in combination with a desire to be closer. There was substantial concordance in these patterns when children were asked about their mothers, teachers, and friends, and a later study showed that insecure representational

patterns are associated with an increased risk of adjustment problems during middle childhood (Kim & Cicchetti, 2004).

Among maltreated children, the absence of a secure and coherent attachment patterns has been associated with a variety of problems that adversely affect social development. Specifically, abuse and neglect have been associated with atypical regulation of emotion (Shields, Cicchetti, & Ryan, 1994), including angry reactivity and negative or contextually inappropriate emotion. Atypical regulation, in turn, may contribute to reactive aggression (Shields & Cicchetti, 1998), exploitative or vindictive behavior, and victimization (Shields & Cicchetti, 2001). These effects can be considered part of a trajectory whereby maltreatment contributes to attachment problems that interfere with adaptive regulation, resulting in peer rejection (Shields et al., 2001) and possible psychopathology (Alink et al., 2009; Egeland, Yates, Appleyard, & van Dulmen, 2002). This trajectory is typical of many of maltreated children, but it is not inevitable. A secure attachment has been shown to attenuate the adverse effects of maltreatment in childhood (Moss et al., 2011), and perceptions of parental care have been associated with resilience in adulthood (Collishaw et al., 2007). These effects suggest that prevention and intervention efforts that target attachment have the potential to alter the developmental trajectory of maltreated children.

Assessment of attachment is important to clarify the effects of maltreatment in middle childhood and increase the effectiveness of prevention and intervention efforts. The care children receive has been shown to affect their exposure and response to later experiences in ways that may increase the risk of a variety of problems, including

depression, anxiety, aggressive or violent behavior, substance abuse, and dissociation (Green et al., 2010; Kessler et al., 2010; Read & Bentall, 2012). A large number of children who develop these problems show symptoms in middle childhood and early adolescence (Kessler et al., 2011; Kim-Cohen et al., 2003), and these children are at increased risk of symptom recurrence (Clark, Caldwell, Power, & Stansfeld, 2010; McLaughlin et al., 2010a) and reduced productivity (McLaughlin et al., 2010b). Abuse and neglect are also associated with a sustained increase in stress reactivity that may contribute to later psychopathology (Harkness, Bruce, & Lumley, 2006; Kendler, Kuhn, & Prescott, 2004; McLaughlin, Conron, Koenen, & Gilman, 2010). These processes may lead to a cycle of abuse or neglect that continues into the next generation (Cort, Toth, Cerulli, & Rogosch, 2011; Kim, 2009), particularly in combination with additional risks, such as early parenthood, social isolation, psychopathology, and partner conflict or violence (Appleyard, Berlin, Rosanbaum, & Dodge, 2011; Berlin et al., 2011; Dixon, Hamilton-Giachristis, & Browne, 2005; Dixon, Browne, & Hamilton-Giachrisis, 2005). There is clearly a need for early assessment and intervention efforts that address the effects of abuse or neglect on attachment, especially as children increase their independence and expand their peer networks in middle childhood.

Associations between Maltreatment and Peer Relations

A substantial proportion of maltreated children encounter difficulty in social situations (Bolger & Patterson, 2003; Cicchetti & Toth, 2005). Their behavior tends to be perceived as problematic by parents, peers, and teachers, and they are more likely to experience rejection than non-maltreated children (Dodge, Pettit, & Bates 1994; Feldman

et al., 1995; Manly et al., 1994). They are also more likely to resist friendly initiatives, engage in reactive aggression, and respond inappropriately to the distress of their peers (Klimes-Dougan & Kistner, 1990; Howes & Eldredge, 1985; Main & George, 1985). Therefore, it is not surprising that reciprocated friendships are less common (Bolger & Patterson, 2001a; Salzinger et al., 1993) and involve more conflict and less closeness and support (Bolger, Patterson, & Kupersmidt, 1998; Parker & Herrera, 1996) among maltreated than non-maltreated children, and that maltreated children are more likely to initiate or become targets of peer victimization (Shields & Cicchetti, 2001).

Research suggests that peer relations are affected by certain characteristics of maltreatment. In particular, peer rejection is commonly associated with physical abuse, whereas problems in the development of friendships are more commonly associated with neglect and emotional maltreatment (Manly et al., 1994; Manly et al., 2001; Salzinger et al., 1993). These effects require careful interpretation because maltreatment subtypes frequently occur in combination (Manly, 2005). Research has shown that, regardless of subtype, chronic maltreatment increases the likelihood of later behavior problems and peer rejection (Bolger & Patterson, 2001a; Graham et al., 2010, Manly, Kim, Rogosch, & Cicchetti, 2001). Additionally, very early maltreatment has been related to poor self-concept (Bolger et al., 1998) and behavior problems assessed by parents and teachers in middle childhood (Manly et al., 2001), even after the effects of chronicity are controlled.

In contrast, adaptive peer relations appear to reduce the risk of adjustment problems among maltreated children, and are recognized as an important target for prevention and intervention (Bolger & Patterson, 2003; Shonk & Cicchetti, 2001).

Perceived social competence (Kim & Cicchetti, 2003) and adaptive regulation of emotions (Maughan & Cicchetti, 2002) have been concurrently related to lower internalizing symptoms among maltreated children, and Kim and Cicchetti (2010) found that regulation predicted later peer acceptance, and that acceptance, in turn, was related to lower internalizing symptoms. Peer acceptance and friendship quality have also been found to moderate the effects of early harsh parenting and contextual risk on later externalizing symptoms (Criss, Pettit, Bates, Dodge, & Lapp, 2002), and having friends who abide by social standards has been associated with a substantial reduction in rates of later violent antisocial behavior, especially in children exposed to physical abuse (Salzinger, Rosario, & Feldman, 2007). Additionally, improvements in self-esteem across time have been associated with the presence and quality of reciprocated best friendship among children exposed to some types of maltreatment (Bolger et al., 1998), and having a large network of friends has been found to protect against peer victimization among children exposed to early harsh parenting (Schwartz et al., 2000). Supportive peer relations continue to protect against the adverse effects of maltreatment, so that by adolescence, they are associated with a reduced risk of adult psychopathology (Collishaw et al., 2007).

Recently, there has been a shift toward examination of processes that influence the developmental trajectories of maltreated children, and this research has repeatedly shown that attachment influences the risk of social problems. For example, Shields, Ryan, and Cicchetti (2001) reported that representations of caregivers are negatively influenced by maltreatment, and that the association between maltreatment and peer

rejection is mediated by these representations. Representations were assessed with a projective task in this study; however, research incorporating self-report measures has produced similar results. Specifically, Kim and Cicchetti (2004) showed that maltreatment and mother-child relatedness independently predicted internalizing and externalizing behavior measured a year later. The effect of maltreatment was partially mediated by low teacher-rated social skills, and the effect of insecure relatedness was mediated by low self-esteem. In a separate set of analyses, Alink, Cicchetti, Kim, and Rogosch (2009) showed that emotion regulation mediated the effect of maltreatment on internalizing and externalizing behavior for children with insecure, but not secure, patterns of mother-child relatedness. Together, these results suggest that the absence of a secure attachment increases the risk associated with maltreatment.

Chapter 4: The Present Study

Although research has consistently shown that maltreatment is associated with problems in attachment and peer relations, relatively little is known about the proximal causes of these problems. Perceived attachment may be particularly influential as children develop independence and establish relationships with peers during middle childhood, and it is possible that maltreatment interferes with social development through its effects on attachment. In the present study, this possibility was addressed by measuring effects of current attachment security and coping patterns in a large sample of maltreated and non-maltreated children who took part in a summer camp. Several aspects of maltreatment were assessed, including subtype, severity, perpetrator, and timing. Children completed a peer nomination task at the end of the camp week, and counselors provided ratings of social behavior. Responses to these measures were examined to determine whether attachment variables mediate the association between maltreatment and social problems. Sex differences were also examined because attachment is thought to influence some aspects of social behavior differently for boys and girls. Analyses were performed to test several specific predictions.

Predictions about attachment were evaluated in the first set of analyses. Consistent with previous research, avoidant coping was expected to correlate negatively with security and preoccupied coping. Additionally, avoidant coping was expected to be more typical of boys, and preoccupied coping was expected to be more typical of girls. An increase in the difference between boys and girls was expected during middle childhood. Children who had experienced maltreatment were expected to report lower

levels of security and higher levels of avoidant and preoccupied coping than non-maltreated children, and these effects were expected to vary depending on the subtype, severity, and timing of maltreatment.

A second set of analyses was conducted to evaluate predictions about social behavior. Agreement between measures of peer- and counselor-rated social behavior was expected to be moderate or better. Acceptance among peers was expected to be positively correlated with security and negatively correlated with avoidant and preoccupied coping. Conversely, peer- and counselor-rated social behavior problems were expected to be negatively correlated with security and positively correlated with avoidant and preoccupied coping. Children who had experienced maltreatment were expected to be less accepted, and more likely to exhibit peer- and counselor-rated behavior problems, than non-maltreated children. Avoidant coping was expected to be more closely associated with peer- and counselor-rated social problems among girls, whereas preoccupied coping was expected to be more closely associated with such problems among boys.

Predictions concerning attachment as a mediator of the association between maltreatment and social behavior were evaluated in the last set of analyses. According to the causal steps approach proposed by Baron and Kenny (1986), mediation requires that the predictor variable (maltreatment) be associated with both the criterion variable (social behavior) and the proposed intervening variable (attachment). Provided that these criteria are met, partial mediation is indicated if the amount of variance explained by the predictor is significantly reduced when the intervening variable is controlled. Children

who had experienced maltreatment were expected to report attachment problems, and these problems were expected to partially account for the adverse effects of maltreatment on acceptance and social behavior.

Chapter 5: Research Methods

Participants

Participants were 683 children (334 boys, 349 girls) who took part in a summer camp research program. The sample included 334 (161 girls, 173 boys) maltreated children and 349 (188 girls, 161 boys) non-maltreated children. All children were living with their biological mothers when they attended the camp. They were between 6 and 12 years of age, and neither the ages of boys (M = 10 years, 4 months; SD = 21 months) and girls (M = 10 years, 5 months; SD = 22 months), $t(681) = -0.57$, $p = 0.57$, nor the ages of maltreated (M = 10 years, 5 months; SD = 22 months) and non-maltreated (M = 10 years, 3 months; SD = 21 months), $t(681) = .82$, $p = 0.41$, differed. The sample included children from predominately low-income, inner-city backgrounds, and was ethnically diverse (58% African American, 15% Caucasian, 11% Hispanic, 16% mixed/other). Because some children attended more than one year of camp, data were drawn from the earliest year for which a complete set of measures was available.

Recruitment and Classification Procedures

Parents were contacted by a liaison from the Department of Human Services (DHS), and the names of those who expressed interest in having their children attend the camp were released to the research team for recruitment purposes. All children had parental consent to participate in the research program, and to allow the team to review any Department of Human Services (DHS) records pertaining to them.

Children were classified as either maltreated or non-maltreated after comprehensive searches of DHS records and interviews with their mothers. To be

classified as maltreated, children had to have been involved in a substantiated case of abuse or neglect. The records of children who met these criteria were coded using a standardized classification system, as described below. A trained research assistant also interviewed mothers to verify that information contained in the records was accurate and complete.

To be classified as non-maltreated, children could not have been involved in any incidents of abuse or neglect, and they had to live in a household that was currently receiving assistance through the Temporary Aid for Needy Families (TANF) program. A search of DHS records was performed to establish that no reports of maltreatment involving children or their family members existed, and interviews with mothers were conducted to corroborate the search results. A second search of DHS records was performed within a year of camp attendance so that all relevant information could be accessed. Children were classified as non-maltreated only if their records contained no reports of maltreatment and their family had not received services intended to reduce the risk of maltreatment. The low-income backgrounds of the non-maltreated children were comparable to those of maltreated children (Sedlak & Broadhurst, 1996).

The incidence of various subtypes of maltreatment was determined by applying the Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993) to the records of maltreated children. Rather than relying on the conclusions of the child protective system or courts, the MCS allows researchers to identify subtypes (sexual abuse, physical abuse, physical neglect, and emotional maltreatment) and describe their severity and timing based on a comprehensive review of the records. The reliability and

validity of this approach are well supported (Bolger et al., 1998; English et al., 2005; Manly et al., 1994).

Subtypes were coded after trained members of the research team had achieved acceptable reliability (weighted κ with the criterion = .86 to .90). Reliability for determinations of the presence or absence of subtypes (weighted κ = .90 to 1.00) and the severity of each subtype (weighted κ = .75 to 1.00) was also examined.

The presence or absence of each subtype was determined with reference to a standard description. Sexual abuse was considered present if there was any indication of actual or attempted sexual contact between a child and a relative or care provider. Actions resulting in intentional physical harm or injury (bruises, cuts, broken bones) to a child were considered physical abuse. Physical neglect was present if a caregiver had failed provide a child with adequate nutrition, shelter, care, and supervision. Actions that severely compromised the ability of a child to attain safety, security, acceptance, or independence were considered emotional maltreatment. The severity of each subtype a child had experienced was assigned a score of 1 (least severe) to 5 (most severe).

Records indicated that 9% of maltreated children in this sample had experienced sexual abuse (n = 27; severity M = 2.81, SD = .83), 28% had experienced physical abuse (n = 93; severity M = 2.42, SD = 1.10), 79% had experienced physical neglect (n =263; severity M = 3.31, SD = 1.23), and 62% had experienced emotional maltreatment (n = 208; severity M = 3.37, SD = 1.25). Consistent with previous reports (Manly, Cicchetti, & Barnett, 1994; Manly et al., 2001), a majority of children (59%; n = 198) met criteria for two or more subtypes of maltreatment. The records of 51 children (25 girls, 26 boys)

did not contain sufficient information to verify the presence and subtype of maltreatment, and these children were not included in the sample.

To assess the contribution of subtype to attachment and social behavior, children who had experienced sexual abuse and/or physical abuse (SA/PA = 34%; $n = 114$) were contrasted with those who had experienced physical neglect and/or emotional maltreatment in the absence of abuse (PN/EM = 66%; $n = 200$). Children were also classified as having experienced 1-2 (83%, $n = 278$) or 3-4 (17%, $n = 56$) different subtypes of maltreatment. Severity was scored separately for each subtype, and the scores were combined to create a measure of general severity, ($M = 5.60$, $SD = 2.93$). As expected, general severity was related to subtype classification (SA/PA or PN/EM; $r = 0.34$, $p < .001$) and number of subtypes (1-2 or 3-4; $r = 0.60$, $p < .001$), although it did not account for all of the variance in either variable.

Attachment reflects the care children have received, so it was also important to consider the perpetrators of maltreatment. Mothers were the most common perpetrators of maltreatment (90%; $n = 302$), followed by fathers (40%; $n = 135$), and other individuals (34%; $n = 112$). Mothers were identified as perpetrators in 64% ($n = 134$) of cases of emotional maltreatment; 74% ($n = 195$) of cases of neglect; 58% ($n = 54$) of cases of physical abuse, and 37% ($n = 10$) of cases of sexual abuse. Children had experienced maltreatment by more than one perpetrator in 55% ($n = 183$) of cases, and mothers were involved in all except three of these cases.

To assess the effects of timing, records were examined to determine the presence or absence of maltreatment during the infant (0-12 months), toddler (1-2 years),

preschool (3-4 years), early school (5-7 years) and late school (8-12 years) periods. The proportion of children who experienced at least one incident of maltreatment was 35% (*n* = 117) for the infant period; 32% (*n* = 108) for the toddler period; 49% (*n* = 164) for the preschool period; 22% (*n* = 73) for the early school period; and 35% (*n* = 118) for the late school period. Children experienced incidents of maltreatment during two or more developmental periods in 45% (*n* = 151) of cases. Because the infant and toddler periods are thought to be particularly influential in the development of attachment (Sroufe, 1988), the contribution of maltreatment during these periods was of special interest. The effects of early maltreatment were assessed by comparing children who had experienced maltreatment in the infant and/or toddler periods (48%, *n* = 161) with those who had not. In addition, the effects of recent maltreatment were assessed by comparing children who had experienced maltreatment during or after the preschool period (84%, *n* = 281) with those who had not.

Procedures

Children attended camp for a week, participating in activities with 4 to 11 (*M* = 7.15, *SD* = 1.68) children of the same gender and approximate age. The counselors and research assistants responsible for supervising these activities were not aware of the study predictions or the maltreatment status of individual children. Children had parental consent to take part in research in return for points that could be exchanged for a variety of small prizes (see Cicchetti & Manly, 1990 for a description of camp procedures). A majority of children attending the camp (78%) had complete information on all measures

included in this study, and those who did not have complete information were excluded from the sample.

Measures

Attachment.

Security Scale (SS; Kerns et al., 1996). The Security Scale was administered to assess children's perceived security of attachment to their mothers. This measure consists of 15 pairs of statements, such as "Some kids find it easy to trust their mom. Other kids are not sure if they can trust their mom". Children selected the statement in each pair that best described them and also indicated whether that statement was "sort of true" or "really true". Responses were assigned a value of 1 (less secure) to 4 (more secure) and averaged to create a continuous security score. Adequate internal consistency and test-retest reliability at short time intervals has been demonstrated for the Security Scale (Kerns et al., 1996). Scores on this measure show predictable associations with parenting behavior, as well as child social adjustment and friendship quality during middle childhood (Kerns et al., 2001; Kerns et al., 1996).

Coping Strategies Questionnaire (CSQ; Finnegan et al., 1996). The Coping Strategies Questionnaire was administered to measure children's preoccupied and avoidant patterns of relating to their mothers. This measure contains descriptions of 30 different situations, such as "One day you come home from school upset about something. Your mother asks you what the problem is. Some kids wouldn't want to talk to her about it, but other kids would want to discuss it with her." Children chose the

response that was most like them, and also indicated whether their choice was "sort of true" or "really true". Responses were assigned a value of 0 (less avoidant or preoccupied) to 2 (more avoidant or preoccupied), and averaged separately for items corresponding to the *avoidant* and *preoccupied* scales. Adequate internal consistency has been demonstrated for the Coping Strategy Questionnaire. Scores on this measure are relatively stable across a two-year period, and are correlated negatively with measures of concurrent social adjustment (Finnegan et al., 1996; Kerns et al., 2000).

Social Behavior.

Peer Sociometric Ratings (PSR; Coie & Dodge, 1983). After participating in activities together throughout the week, children were interviewed separately about peers who had attended the same camp group. Children were asked to nominate one peer in each of the following categories: *liked most*, *liked least*, *leader*, *cooperative*, *starts fights*, *disruptive*, and *acts shy*. Responses were combined across children, and the proportion of possible peer nominations a child had received in each category was standardized within the camp group and then across the camp year. A *social acceptance* score was created by subtracting the double standardized *liked least* score from the *liked most* score for each child (see Coie & Dodge, 1983). This approach provides a continuous measure of acceptance or rejection that has been shown to predict relevant aspects of social behavior (Coie et al., 1990). It was considered more appropriate than assessment of social status categories (popular, controversial, neglected, rejected), given the limited duration of the camp session and the small size of the camp groups.

Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976). At the end of each camp week, counselors provided information about the social behavior of the children they had supervised by completing the Pupil Evaluation Inventory. This measure consists of 35 items that assess aggression, withdrawal, and likeability. Counselors were told to select no more than two children whose behavior was best captured by each item. Selected items corresponding to the *aggression*, *withdrawal*, and *likeability* scales were counted for each child and averaged across counselors to produce a single score on each scale. Resulting scores were then standardized within the camp group and across the camp year. Previous research with the PEI has shown that the aggression, withdrawal, and likeability scales are stable and internally consistent, and that there is at least moderate agreement between teacher and peer ratings on these scales (Ledingham, Younger, Schwartzman, & Bergeron, 1982; Pekarik et al., 1976).

Chapter 6: Results

Attachment

Correlations Between Attachment Measures. A preliminary set of analyses was conducted to characterize security and coping in the entire sample, and to assess the relationship between these aspects of attachment. SS responses were converted to values of 1 to 4 and then averaged to produce scores ranging from 1.20 to 4.00 ($M = 3.29$, $SD = .53$). CSQ responses were converted to values of 0 to 2 and then averaged separately to produce scores ranging from 0.00 to 1.93 ($M = .27$, $SD = .31$) on the avoidant scale, and scores ranging from 0.00 to 2.00 ($M = .82$, $SD = .44$) on the preoccupied scale. As predicted, scores on the avoidant and preoccupied scales of the CSQ were negatively correlated ($r = -.41$, $p < .001$). Scores on the SS were negatively correlated with scores on the avoidant scale of the CSQ ($r = - .44$, $p < .001$), but positively correlated with scores on the preoccupied scale ($r = .21$, $p < .001$).

Sex- and Age-Related Differences in Attachment. A series of *t*-tests was performed to determine whether responses to any of the attachment measures differed for boys and girls (see Table 1). Results showed that security levels were comparable for boys and girls. As predicted, boys reported higher levels of avoidant coping than girls, $t(681) = 3.91$, $p < .001$. Conversely, girls reported higher levels of preoccupied coping than boys, $t(681) = -4.06$, $p < .001$. Fisher's z-tests showed that correlations among the attachment measures not differ for boys versus girls ($p > .05$ in all cases).

Additional analyses were conducted to examine developmental differences in attachment (See Table 1). A median split was performed to divide younger

(approximately 6 years, 0 months – 10 years, 8 months) and older (approximately 10 years, 9 months – 12 years, 11 months) age categories. Children in the younger and older categories reported comparable levels of security. Levels of avoidant coping were significantly lower among children in the younger than the older age category, $t(681) = 2.64$, $p = .003$. Conversely, levels of preoccupied coping were significantly higher among children in the younger ($M = .94$, $SD = .42$) than the older ($M = .71$, $SD = .43$) age category, $t(681) = 6.99$, $p < .001$.

ANOVA analyses were performed to determine whether the association between age category and avoidant or preoccupied coping differed for boys and girls (see Figure 1). In the case of avoidant coping, there were significant main effects of sex and age category, as well as a significant interaction, $F(1, 679) = 4.56$, $p = 0.03$. Post-hoc analyses showed that, among younger children, boys reported significantly higher levels of avoidant coping than girls, $t(339) = 4.43$, $p < 0.001$. Among older children, levels of avoidant coping did not differ for boys and girls, $t(340) = 1.27$, $p = 0.21$. In the case of preoccupied coping, there were significant main effects of sex and age category, but the interaction was not significant, $F(1, 679) = 0.32$, $p = 0.57$. Fisher's z-tests showed that correlations among the attachment measures did not differ between younger and older children ($p > .05$ in all cases).

Maltreatment-Related Differences in Attachment. A series of *t*-tests was performed to evaluate differences in attachment between maltreated and non-maltreated children (see Table 2). Scores on the SS and the preoccupied scale of the CSQ did not differ between maltreated and non-maltreated children. In contrast, scores on the

avoidant scale of the CSQ were significantly higher among maltreated than non-maltreated children, $t(681) = 2.07$, $p = .04$. ANCOVA analyses controlling for age and sex produced a similar pattern of results, although the difference between maltreated and non-maltreated children only approached significance ($p = .07$).

Additional analyses were conducted to examine contribution of maltreatment subtype to variation in attachment. Among maltreated children, scores on the SS were slightly lower for children who had experienced SA/PA than PN/EM, and this difference approached significance, $t(332) = 1.91$, $p = .06$. There were no significant effects of subtype on CSQ avoidant or preoccupied coping. Analyses based on the number of maltreatment subtypes children had experienced (0 = nonmaltreated, 1-2, or 3-4) revealed no statistically significant effects on any of the attachment measures. Moreover, general severity was not related to any of the attachment measures among maltreated children.

Although subtype variables were not related to scores on the attachment measures, it was still possible that the correlation between measures differed across subtypes. This possibility was addressed by performing Fisher's z-tests to compare correlations between children who either had or had not experienced each subtype. Results confirmed that correlations between security, avoidant coping, and preoccupied coping did not differ based on whether or not children had experienced SA, PA, PN, or EM.

Separate analyses were conducted to assess possible perpetrator effects on attachment. Mothers were perpetrators of at least one type of maltreatment in 90% of cases, and *t*-tests revealed no differences in the attachment measures based on whether or

not the mother was a perpetrator. None of the results changed when primary analyses were repeated without maltreated children whose mothers were not perpetrators. A series of *t*-tests comparing cases involving single or multiple perpetrators also failed to reveal any differences in the attachment measures.

To address possible effects of timing (see Table 3), attachment was examined in relation to maltreatment onset and recency. ANCOVA analyses with age as a covariate were performed because children with infant/toddler onset were younger than those with preschool/school onset, $t(332) = 5.16$, $p < .001$, and children with preschool/school recency were older than those with infant/toddler recency, $t(332) = 5.13$, $p < .001$. The analyses revealed that scores on the SS did not differ for children with an infant/toddler or preschool/school onset. Scores on the avoidant scale of the CSQ were significantly lower among children with infant/toddler onset, $F(1, 331) = 4.64$, $p = .03$, and scores on the preoccupied scale were higher for children with an infant/toddler onset at a level that approached significance, $F(1, 331) = 3.37$, $p = .07$. There was no effect of recency on the avoidant or preoccupied scales of the CSQ; however, scores on the SS were significantly higher among children with infant/toddler than preschool/school recency, $F(1, 331) = 4.29$, $p = .04$.

Social Behavior

Correlations between Peer- and Counselor-Rated Social Behavior.

Correlations between PSR and PEI social behavior were examined to assess the level of agreement between peers and counselors (see Table 4). Counselor nominations for *aggression* were negatively correlated with peer acceptance and nominations for

cooperative and *acts shy*, but positively correlated with peer nominations for *liked least*, *disruptive*, and *starts fights*. Counselor nominations for *withdrawal* were negatively correlated with peer acceptance and nominations for *liked most* and *leadership*, and positively correlated with peer nominations for *liked least* and *acts shy*. Conversely, counselor nominations for *likeability* were positively correlated with peer acceptance and nominations for *liked most*, *cooperative*, and *leadership*, but negatively correlated with peer nominations for *liked least*, *disruptive*, and *acts shy*. Collectively, these results indicate that peers' and counselors' views of social behavior were in general agreement.

Correlations between Social Behavior and Attachment. Correlations between peer nominations and attachment were examined for each PSR category. Scores on the SS and the CSQ avoidant scale were not correlated with nominations in any PSR category. Scores on the CSQ preoccupied scale were negatively correlated with acceptance (r = -.08, p = .03) and positively correlated with nominations in the *least liked* category (r = .10, p = .01). Additionally, scores on the preoccupied scale were negatively correlated with nominations in the *cooperative* category (r = -.08, p = .05). The correlation between preoccupied coping and nominations was not significant for any other PSR category.

Correlations between peer relations and attachment were also examined using the PEI as a measure of counselor-rated behavior. Results showed that scores on the SS were negatively correlated with counselor-rated *withdrawal* (r = -.09, p = .04). Security was not significantly correlated with *aggression* or *likeability*, and there were no significant

correlations between scores on the CSQ avoidant or preoccupied scales and counselor-rated behavior.

Sex Differences in Associations between Attachment and Social Behavior. Fisher's z-tests were performed to determine whether any correlations between attachment measures and social behavior differed for boys and girls. The negative correlation between scores on the preoccupied scale of the CSQ and peer nominations in the *cooperative* category of the PSR was larger for girls (r = -.15, p = .004) than boys (r = .00, p = .96), z = 1.98, $p < .05$. Sex differences were not significant for any other correlation between attachment measures and peer or counselor nominations. Among both boys and girls, scores on the attachment measures accounted for minimal variance (no more than 3%) in PSR and PEI nominations.

Maltreatment-Related Differences in Social Behavior. Analyses of PSR nominations revealed that, relative to non-maltreated children, maltreated children were less accepted by peers, $t(681) = 4.51$, $p < .001$. This was related to maltreated children receiving a smaller percentage of *liked most* nominations, $t(681) = 3.76$, $p < .001$, and a larger percentage of *liked least* nominations, $t(681) = -3.56$, $p < .001$. Additionally, maltreated children received a smaller percentage of nominations in the *cooperative* category, $t(681) = 3.17$, $p = .002$, and a larger percentage of nominations in the *starts fights*, $t(681) = 3.20$, $p = .001$, and *disruptive*, $t(681) = 3.21$, $p < .001$, categories. There was no significant difference between maltreated and non-maltreated children in the *leadership* or *acts shy* categories.

Associations between maltreatment subtype and peer nominations were examined in a second set of analyses. Children who had experienced SA/PA did not differ from children who had experienced PN/EM on any PSR category. Additional analyses were conducted to examine associations between number of subtypes (0 = non-maltreated, 1-2, or 3-4) of maltreatment and PSR nominations. Results showed that social acceptance was related to the number of subtypes children had experienced, $F(2, 680) = 10.25$, $p < .001$. Significant effects were also found for the *liked most,* $F(2, 680) = 7.08$, $p = .001$, *liked least,* $F(2, 680) = 6.43$, $p = .002$, *disruptive*, $F(2, 680) = 5.17$, $p = .006$, *cooperative,* $F(2, 680) = 5.06$, $p = .007$, and *starts fights,* $F(2, 680) = 75.30$, $p = .005$ categories. Post-hoc analyses comparing children who experienced 1-2 or 3-4 subtypes revealed no significant differences. Children who experienced 1-2 subtypes were less accepted than non-maltreated children, $t(625) = 4.17$, $p < .001$, as well as less likely to be nominated in the *liked most,* $t(625) = 3.51$, $p < .001$, and *cooperative*, $t(625) = 3.10$, $p = .002$, categories, and more likely to be nominated in the *liked least,* $t(625) = 3.30$, $p = .001$, *disruptive,* $t(625) = 3.14$, $p = .002$, *and starts fights,* $t(625) = 3.25$, $p = .001$ categories. Children who experienced 3-4 subtypes were less accepted than non-maltreated children, $t(403) = 2.74$, $p = .007$, as well as marginally less likely to be nominated in the *liked most* category, $t(403) = 2.09$, $p = .04$, and marginally more likely to be nominated in the *liked least* category, $t(403) = 2.38$, $p = .02$. These results are in agreement with the primary analyses comparing maltreated and non-maltreated children. There were no effects of general severity on acceptance or PSR nominations.

Analyses of PEI nominations revealed that maltreated children were more likely than non-maltreated children to be nominated for items corresponding to the *aggression*, $t(681) = 5.16$, $p < .001$, and *withdrawal* scales, $t(681) = 2.95$, $p = .003$. Conversely, maltreated children were less likely to be nominated for items corresponding to the *likeability* scale, $t(681) = 5.41$, $p < .001$.

Additional analyses were conducted to examine the effects of maltreatment subtype on PEI nominations. Children who had experienced SA/PA were more likely to be nominated for items on the *aggression* scale, $t(332) = 2.41$, $p = .02$, than children who had experienced PN/EM. Counselor nominations on the *withdrawal* and *likeability* scales did not differ based on subtype. Additional analyses revealed that nominations for items on the *aggression,* $F(2, 680) = 13.57$, $p < .001$, *withdrawal,* $F(2, 680) = 6.68$, $p = .001$, and *likeability,* $F(2. 680) = 14.38$, $p < .001$ scales differed depending on the number of subtypes children had experienced. Post-hoc analyses showed that children who had experienced 1-2 subtypes were marginally less likely than those who had experienced 3-4 subtypes to be nominated for items on the *withdrawal* scale, $t(332) = 2.06$, $p = .04$. In keeping with the results of the primary analyses, children who had experienced 1-2 subtypes were more likely than non-maltreated children to be nominated for items on the *aggressive* scale, $t(625) = 4.77$, $p < .001$, marginally more likely to be nominated for items on the *withdrawal scale*, $t(625) = 2.19$, $p = .03$, and less likely to be nominated for items on the *likeability* scale, $t(625) = 5.25$, $p < .001$. Likewise, children who had experienced 3-4 subtypes were more likely than non-maltreated children to be nominated for items on the *aggressive* scale, $t(403) = 3.46$, $p = .001$, and the *withdrawal* scale,

$t(403) = 3.45$, $p = .001$, and marginally less likely to be nominated for items on the *likeability* scale, $t(403) = 2.36$, $p = .02$. Across subtypes, children who experienced more severe maltreatment received a larger proportion of counselor nominations in the *aggressive* category ($r = .12$, $p = .03$). There were no effects of severity on nominations in the *withdrawal* and *likeability* categories.

Because mothers were involved in a majority of cases, analyses examining perpetrator effects should be regarded as exploratory. On the PSR, children who had been maltreated by their mothers were less likely to be nominated in the *cooperative* category, $t(332) = 1.96$, $p = .05$, and somewhat more likely to be nominated in the *starts fights* category, $t(332) = 1.77$, $p = .08$. On the PEI, these children also received a larger proportion of counselor nominations for items on the *aggressive* scale, $t(332) = 2.00$, $p = .05$. The results of the primary analyses of PEI and PSR behavior categories were not affected by excluding maltreated children whose mothers were not perpetrators, and there were no differences between cases with single or multiple perpetrators.

Separate analyses were conducted to examine possible effects of maltreatment onset and recency on social behavior. Children who had been maltreated starting in the infant/toddler period were less accepted by peers, $t(332) = 2.15$, $p = .03$, and received a larger percentage of nominations in the *liked least* category, $t(332) = 2.58$, $p = .01$, and a smaller percentage of nominations in the *acts shy* category, $t(332) = 2.20$, $p = .03$, than children who had been maltreated starting in the preschool/school period. There were no effects of maltreatment onset on counselor nominations on any of the PEI scales. Recency was not related to any of the peer or counselor nominations.

Mediation

Mediation of the Relation Between Maltreatment and Social Behavior by Attachment. Because only two of the three requirements for testing mediation were met, the prediction that attachment would mediate associations between maltreatment and peer relations was not supported. The first requirement for testing mediation specifies that the predictor variable (maltreatment) must be related to the criterion variable (peer relations). Analyses of peer and counselor nominations revealed a number of differences between maltreated and non-maltreated children, so this requirement was satisfied. The second requirement specifies that the predictor variable (maltreatment) must be related to proposed intervening variable (attachment). Although maltreated children did not differ from non-maltreated children on measures of security or preoccupied coping, this requirement was satisfied in the case of avoidant coping. The third requirement specifies that the proposed intervening variable (attachment) must be related to the criterion variable (peer relations). Because avoidant coping was not related to peer or counselor nominations in any category, this requirement was not satisfied, and no further analyses were performed.

Chapter 7: Discussion

In this study, the influence of attachment on concurrent social behavior during middle childhood was examined in a large at-risk sample that included children known to have experienced maltreatment. Results supported the claim that maltreatment is related to social problems, and indicated that perceived attachment may not provide a straightforward explanation for these problems. In the following sections, results corresponding to each set of predictions are discussed and areas for further research are recommended.

Attachment. Predictions concerning correlations between attachment measures were supported. As expected, avoidant and preoccupied coping were negatively correlated, and security was negatively correlated with avoidant coping. This result is consistent with the view that avoidant and preoccupied coping represent distinct patterns of relating to a caregiver in middle childhood (Yunger et al., 2005). Somewhat surprisingly, preoccupied coping was positively correlated with security. A similar pattern of results has been reported in previous studies with low-risk samples (Booth-Laforce et al., 2006; Kerns et al., 2000; 2006), suggesting that self-report measures may not reliably differentiate between insecure attachment and age-appropriate reliance on a caregiver during middle childhood (Dwyer, 2005). Alternatively, it is possible that children who have a secure attachment make a particular effort to keep track of and communicate with their parents, even as they increase their independence (see Kerns et al., 2001). Consistent with this interpretation, a previous study of attachment in a low-risk sample showed that the correlation between preoccupied coping and security

increased in late middle childhood (Kerns et al., 2000), possibly as a precursor to the restructuring of attachment relationships in adolescence.

The correlation between preoccupied coping and security could also be indicative of conflict at the level of representation. Research has sometimes shown that maltreated children express positive and secure emotion in combination with a desire to be closer to their mothers, and Lynch and Cicchetti (1991) posited that this type of representation might reflect an approach-avoidance conflict. The results of this study are potentially consistent with this explanation; however, it should be noted that the correlation between preoccupied coping and security was not stronger for maltreated than non-maltreated children. Moreover, scores on the attachment scales were similar to those typically found in low-risk samples (see Booth-Laforce et al., 2006; Kerns et al., 2000; Yunger, Corby, & Perry 2005) and attachment did not show clear and consistent associations with maltreatment or social behavior in this study.

Analyses examining sex- and age-related differences yielded additional information about sources of variation in attachment. As predicted, avoidant coping was more typical of boys, whereas preoccupied coping was more typical of girls. This pattern is relatively common in research examining attachment to a caregiver in middle childhood, and is paralleled in adult close relationships (Del Giudice & Belsky, 2010). Previous studies also suggest that girls view their mothers as more accessible than boys (Kerns et al., 2006), and are more likely to turn to them for help during middle childhood (Lieberman et al., 1999; Sarracino, Preshaghi, Degni, & Innamorati, 2010). Children's responses to the preoccupied scale, in particular, may reflect these tendencies.

Among children of both sexes, scores on the preoccupied scale were lower in late, relative to early, middle childhood. This result is consistent with previous research (Finnegan et al., 1996; Hodges, Finnegan, & Perry, 1999; Karavasilis et al., 2003), including a longitudinal study by Kerns, Tomich, and Kim (2006) that showed decreases in preoccupied coping and reliance on mothers between the third and fifth grades. In contrast to this pattern, scores on the avoidant scale tended to be lower in early middle childhood, at least among girls. An age-related increase in avoidant coping has been reported in some studies (Hodges et al., 1999; Kerns et al., 2006); however, a study that examined sex as a possible moderator of this effect did not produce significant results (Finnegan et al., 1996). Although it should be noted that levels of avoidant coping in this sample remained low throughout middle childhood, further research may help to explain developmental variations in avoidant coping among girls.

Contrary to expectations, sex differences did not increase during middle childhood. Instead, preoccupied coping was more typical of girls throughout middle childhood, and avoidant coping was more typical of boys only in early middle childhood. Because analyses were cross-sectional, it was not possible to verify that boys and girls actually became more similar in terms of avoidant coping. Nevertheless, these results suggest that, at least in an at-risk sample, sex differences in insecure attachment do not necessarily increase during middle childhood. It is possible that these differences are adaptive primarily at moderate levels risk (Del Giudice, 2009), and not at the extreme levels experienced by children in this sample.

Analyses comparing maltreated and non-maltreated children provided further information about the contribution of risk to variations in attachment. As predicted, avoidant coping was somewhat more typical of maltreated children. Avoidant coping has been shown to relate to a lack of age-appropriate parental involvement, support, and supervision (Karavasilis et al., 2003; Kerns et al., 2000; Yunger et al., 2005), although it is not clear that the low levels reported by children in this sample constitute a problem. Moreover, maltreated and non-maltreated children did not differ in terms of either security or preoccupied coping, even though security, in particular, has been shown to relate to parental behavior (Kerns et al., 2000; 2001). The responses of maltreated children could reflect a tendency to minimize attachment problems or select responses perceived as socially desirable, and these possibilities should be assessed in future studies.

There were no significant effects of maltreatment subtypes (presence or number), severity, or perpetrator on attachment, although security was negatively related to the presence of sexual and/or physical abuse at a level that approached significance. Attachment was assessed with measures that have been established as valid exclusively in low-risk samples (Dwyer, 2005), and the pattern of effects may imply that these measures are less informative in an at-risk sample. Alternatively, the experiences of maltreated children may not have varied sufficiently to produce effects, especially in the case of avoidant and preoccupied coping. A substantial proportion of children had experienced a combination of subtypes, making the contribution of individual subtypes difficult to isolate. The involvement of mothers in almost all cases meant that it was also not

possible to compare attachment based on type of perpetrator. These limitations could be addressed in future research by sampling larger numbers of abuse cases and cases without mothers as perpetrators, and by measuring attachment to additional caregivers (especially fathers).

As predicted, attachment was affected by the timing of maltreatment. Relative to children who had been maltreated exclusively during the preschool or school period, those who had an earlier onset reported lower levels of avoidant coping, along with marginally higher levels of preoccupied coping. This pattern of lower avoidant and higher preoccupied coping has been found to be more typical in early than late middle childhood (Hodges et al., 1999; Kerns et al., 2006), so it is possible that early maltreatment affected attachment in ways that interfered with the attainment of an age-appropriate level of independence. Additionally, relative to children who had been maltreated exclusively in the infant or toddler period, those who had been maltreated recently reported lower levels of security. This association is consistent with the view that security reflects recent parental behavior (Kerns et al., 2000; 2001). Research examining continuity and change across middle childhood could help to clarify these effects and explain how variations in maltreatment come to be reflected in attachment.

Social Behavior. As expected, peers and counselors expressed similar views about social behavior. Children who were accepted by their peers tended to be perceived as likeable by their counselors, whereas children who were rejected tended to be perceived as aggressive or withdrawn. Similar levels of agreement have been reported in

a number of studies (Landau & Milich, 1990; Renk & Phares, 2004), including studies of at-risk children (Feldman et al., 1995; Manly et al., 1994).

Predictions concerning the relation between attachment and peer-rated social behavior received partial support. Specifically, preoccupied coping was negatively correlated with acceptance and peer-rated cooperation, but positively correlated with least liked status. Problems of this type have been related to insecure attachment assessed both prospectively (Sroufe, 2005) and concurrently (Kerns, 2005), and the dependent and immature behavior of preoccupied children has been associated with an increased risk of being subjected to peer victimization (Cassidy & Berlin, 1994; Finnegan et al., 1996; Hodges et al., 1999). Avoidant children are also considered to be at risk for social problems (Booth-Laforce et al., 2006; Finnegan et al., 1996; Hodges, et al., 1999); however, there were no effects of either security or avoidant coping in this sample. These scales may not reliably predict peer perceptions of social behavior among at-risk children, or they may do so only after repeated interactions or in certain contexts, such as reciprocated friend or enemy relationships (Card & Hodges, 2003; Kerns et al., 1996).

Attachment was not related to counselor perceptions of social behavior, except in the case of a negative correlation between security and withdrawal. This result is consistent with research showing that secure children are effective at initiating and maintaining social interactions (see Contreras & Kerns, 2000), abilities that are particularly relevant in a camp context. The lack of any additional associations between attachment and counselor-rated social behavior is not easily explained, but may be related to the restricted range of scores on some of the attachment measures (particularly the

avoidant scale). Alternatively, counselors may have been most attentive to children during highly structured camp activities that did not reliably evoke attachment-relevant behavior.

Attachment influenced social behavior similarly for boys and girls, except that preoccupied coping was negatively correlated with peer-rated cooperation only among girls. There was no indication that avoidant girls or preoccupied boys were especially likely to experience rejection, and none of the attachment measures explained a large amount of variation in social behavior. It may be that attachment is related to sex-atypical behaviors and boundary violations that are not captured by the measures used in this study, and that may not even be apparent when children are placed in same-sex groups. Alternatively, given that children prefer to affiliate with members of the same sex (Maccoby, 1990), they may be more likely to notice sex-typical behaviors that are related to attachment. Research is currently inconclusive regarding possible sex differences in the way attachment relates to social behavior.

As predicted, peer- and counselor-reported social problems were particularly common among maltreated children. Specifically, peer acceptance was less typical of maltreated than non-maltreated children, and this was related to the tendency of maltreated children to be frequently least liked, and infrequently most liked. Children who are perceived in this way are at risk for serious behavior problems (Parker et al., 2006), and this was reflected in behavior measures completed by peers and counselors. According to peers, maltreated children tended to initiate aggression, interrupt activities, and refuse to cooperate in social situations. According to counselors, maltreated children

were less likeable than non-maltreated children, and had problems related to aggression and social withdrawal. Problems of this type have been consistently identified among maltreated children assessed in a camp context (Kaufman & Cicchetti, 1989; Manly et al., 1994), and are part of a pattern of chronic and severe developmental risk (Cicchetti & Toth, 1995, 2005; Kim & Cicchetti, 2010).

Research has established that certain characteristics of maltreatment affect risk (Bolger et al., 1998; Kim, Cicchetti, Rogosch, & Manly, 2009; Manly et al., 2001), and the results of this study are consistent with that conclusion. According to counselors, aggression was particularly common in cases involving sexual and/or physical abuse, and among children who had experienced more severe maltreatment. Children who had been maltreated by their mothers also appeared aggressive to counselors, and were less cooperative and somewhat more likely to start fights according to their peers. According to counselors, children who had experienced any maltreatment were more socially withdrawn than non-maltreated children, and those who had experienced at least three subtypes of maltreatment (always including sexual and/or physical abuse) were most withdrawn. Taken together, these results indicate that the risk of social problems increased in the context of more extreme variations in care.

Children who had experienced early maltreatment tended to be less accepted by peers, and were frequently named as least liked. These children also appeared less shy to their peers, suggesting that they attempted to involve themselves in social interactions with limited success. None of the social behavior measures were related to the recency of maltreatment. These results indicate that maltreatment that starts in the infant or toddler

period is particularly likely to have an adverse effect on social behavior. This interpretation is supported by previous studies, especially those relating early physical abuse to atypical processing of social information and aggressive behavior in middle childhood (Dodge et al., 1995; Rogosch, Cicchetti, & Aber, 1995). Chronicity of maltreatment has been examined in some of these studies (Bolger & Patterson, 2001a; Manly et al., 2001), and has been found to intensify the problems associated with early abuse or neglect.

Mediation. None of the attachment measures qualified as a potential mediator of the association between maltreatment and social behavior. Although mediation has been established for some attachment-related constructs (Alink et al., 2009; Shields et al., 2001), the self-report attachment questionnaires used in this study had relatively few associations with either maltreatment status or social behavior. These measures may not provide an accurate description of attachment in at-risk children, especially if they activate self-presentation concerns. They may also predict general social behavior less reliably than behavior in friend or enemy relationships (Card & Hodges, 2003; Kerns et al., 1996).

Research involving a combination of behavioral and self-report measures of attachment could help to clarify the results of this study. This research could be expanded to include measures of self-esteem and emotion regulation, as these constructs are known to mediate the effects of attachment on peer relations (Booth-Laforce et al., 2006; Contreras et al., 2000) and the effects of maltreatment on behavior problems (Kim & Cicchetti, 2004; Shields et al., 1994). Additional attention to the timing of

maltreatment could also help to explain the developmental processes that link attachment and social behavior. The results of this study suggest that early maltreatment, in particular, has adverse effects on both attachment and peer acceptance during middle childhood. A complete explanation of how at-risk children perceive and are influenced by attachment is currently lacking, and continued research has the potential to inform prevention and intervention efforts during middle childhood.

Chapter 8: Conclusion

Measurement of attachment during middle childhood raises special concerns, particularly in research with at-risk children. Assessment with self-report measures presents a clear advantage as children become more comfortable with separation from their caregivers. At the same time, there are reasons to be cautious regarding the interpretation of these measures. A particular concern is that thought and behavior patterns that are influenced by attachment may eventually become automatic, and excluded from awareness. Additionally, it is possible that children choose to describe their relationships in ways they believe are socially acceptable. These issues could interfere with assessment of insecure—and especially, avoidant—attachment. Abuse and neglect are known to affect the way children view themselves (Vondra, Barnett, & Cicchetti, 1989), so it is possible that these experiences introduce additional constraints on children's ability to provide accurate and coherent descriptions of their attachment.

This study contributes to research examining the validity of self-report measures designed to measure attachment in middle childhood. The pattern of correlations among the measures replicates existing research (Kerns et al., 2000, 2006), suggesting that the structure of attachment is not affected among at-risk children. As predicted, there were significant negative correlations between avoidant and preoccupied coping, and between security and avoidant coping. In contrast, there was a significant positive correlation between security and preoccupied coping. There are several reports of comparable—though not always statistically significant—positive correlations in low-risk samples. It has been suggested that the preoccupied scale partially reflects age-appropriate reliance

on a caregiver (Dwyer, 2005), and this interpretation is consistent with research showing that teachers perceive children who show a pronounced decrease in preoccupied coping between third and fifth grade as less able to regulate their behavior (Kerns et al., 2006). The preoccupied scale likely also reflects insecure attachment, given that it was related to a lack of peer acceptance in this study, and to internalizing problems and low self-esteem in earlier work (Hodges et al., 1999; Yunger et al., 2005).

Attachment is influenced by a variety of developmental processes during middle childhood, and this study helps to explain how these processes differ between boys and girls. Results indicate that preoccupied coping is more typical of girls, whereas avoidant coping is more typical of boys. Additionally, there was an age-related decrease in preoccupied coping among both boys and girls, and an age-related increase in avoidant coping primarily among girls. There was no indication that sex differences in attachment increased during middle childhood, and the effects of attachment on peer acceptance did not differ between boys and girls. This does not necessarily contradict the claim that attachment shifts toward an adult pattern of sex differences during middle childhood because very severe risk is expected to lead to avoidant coping in girls, as well as boys (Del Giudice, 2009). The absence of sex differences in avoidant coping in late middle childhood could, therefore, be related to some girls having developed an avoidant pattern of relating to their caregivers. The cross-sectional nature of this study precludes assessment of this possibility, and because avoidant coping was present at relatively low levels and not associated with any social problems, differences between boys and girls should be regarded with caution. Additional research could help to explain how

developmental level and risk interact to influence sex differences in attachment during middle childhood.

Maltreatment is associated with extreme risk, and it was predicted that this would be reflected in the attachment measures. Results showed that children who had been maltreated were somewhat more likely to report avoidant coping, but did not differ from non-maltreated children in terms of either security or preoccupied coping. This pattern of results is not easily reconciled with the reliable association between maltreatment and early childhood attachment problems (Cicchetti & Toth, 2005, 2010), and may reflect the limitations of self-report measures (Ainsworth, 1985). Such measures do not provide information about atypical attachment patterns that may develop in the context of extreme risk (Barnett, Butler, & Vondra, 1999), and they appear to reflect self-presentation concerns (Karavasilis et al., 2003) perhaps to an even greater extent than attachment-relevant behavior (van Ijzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). These considerations provide a possible explanation for the current pattern of results, although it should be noted that earlier research has shown that maltreated children experience problems in their relationships with caregivers that can be measured with self-report (Alink et al., 2009; Lynch & Cicchetti, 1991; Toth & Cicchetti, 1996). This research relied on a single measure to assess patterns of relatedness, and it is possible that the content or structure of the measures included in the present study were less sensitive to the effects of maltreatment. Nevertheless, given that reluctance or inability to realistically assess relationships may interfere with competent social behavior

(Kobak & Cole, 1994), comparison of self-report and projective or behavioral measures is an important area for continued research with maltreated children.

According to Bowlby (1973, p. 202), children construct attachment representations that are "tolerably accurate reflections" of their actual experiences with a caregiver. This claim is supported by a large amount of research showing that attachment representations are generally less balanced, complex, and coherent among maltreated than non-maltreated children (Cicchetti & Toth, 2010; George, 1996). The current results contradict this pattern, in that significant attachment problems were not common among either maltreated or non-maltreated children. It may be that defensive processes resulted in the exclusion of these problems from awareness (Bretherton & Munholland, 1999), or that children chose not to acknowledge them because they did not expect a supportive response (Macfie et al., 1999; Shipman & Zeman, 2001). Indeed, maltreated children who report that they are secure with their mothers may nevertheless refer to care that is experienced as inconsistent or threatening in the context of a projective task (Buchsbaum, Toth, Clyman, Cicchetti, and Emde, 1992). A parallel tendency for maltreated children to consider themselves more competent than is justified by their behavior has been reported in early middle childhood (Vondra et al., 1989), and may affect the way children assess their attachment. A possible protective effect of this tendency is suggested by research indicating that maltreated children who report favorable perceptions of their mothers are less likely to exhibit behavioral problems (Toth, Cicchetti, Macfie, Rogosch, & Maughan, 2000; see also Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002). Additional research could help to clarify whether skills that contribute to realistic

perceptions of attachment are late in developing, or whether favorable or idealistic perceptions help maltreated children cope with their experiences (perhaps at the expense of increasing the likelihood of problems in later close relationships; Colman & Widom, 2004).

It is also conceivable that actual improvements in care had taken place after children came into contact with child protective services and were referred for participation in this study. Research indicates that maltreatment is less likely to recur when caregivers are compliant with services and able to access resources (see Hindley, Ramchandani, & Jones, 2006), such as those provided in the camp context. It is unlikely that recent improvements in care were sufficient to counter the negative effects of maltreatment; however, it is possible that, in the absence of a concept of consistently supportive care, children referred to their past experience as a standard of comparison when assessing their current relationships with their mothers. Abuse and neglect have been associated with a pattern of repeated victimization in childhood (Finkelhor, Ormrod, Turner, & Hamby, 2005) and adulthood (Desai, Arias, Thompson, & Basile, 2002), and an inability to acknowledge problems in relationships could contribute to this pattern. Conversely, the potential for significant and rapid changes in the way children perceive their relationships with their mothers following improvements in the care they receive could be an important component of recovery leading to later resilient adaptation. Research that relates patterns of continuity and change in the care to the way children perceive and interact with their mothers will be necessary in order to evaluate these possibilities.

Closer attention to issues of continuity and change could also help to explain how the timing of maltreatment influences attachment during middle childhood. This study provides evidence that early maltreatment contributes to somewhat higher levels of preoccupied coping, as well as lower levels of avoidant coping and peer acceptance. Abuse and neglect are known to interfere with the development of self-reflective and regulatory skills during the infant and toddler periods (Beeghly & Cicchetti, 1994; Maughan & Cicchetti, 2002), and may initiate a cascade of effects that increases the likelihood of excessive dependence on a caregiver, socially coercive or withdrawn behavior, and peer rejection during middle childhood. In comparison, the effect of recent abuse or neglect appears to be limited to lower levels of security. This may be because security is primarily a measure of current attachment, and is therefore especially sensitive to the effects of recent maltreatment. Assessment of attachment across time and with a combination of measures could contribute additional information about these effects, providing a clearer explanation of how patterns of relating to a caregiver change during the course of maltreatment.

Taken together, the results of this study help to explain how developmental and contextual influences affect perceptions of attachment during middle childhood. As expected, preoccupied coping decreased with age, and was consistently higher among girls. Conversely, avoidant coping increased with age, and was more typical of boys only in early middle childhood. Avoidant coping was also the only attachment scale to differentiate maltreated and non-maltreated children, although all of the scales were influenced by the characteristics of maltreatment. Specifically, exposure to sexual and/or

physical abuse or recent incidents of any type contributed to lower levels of security, whereas early incidents contributed to lower levels of avoidant coping and marginally higher levels of preoccupied coping.

Measures completed by peers and counselors revealed limited effects of attachment on social behavior. Children who reported higher levels of preoccupied coping were less accepted and cooperative toward peers, whereas children who reported lower levels of security appeared socially withdrawn to their counselors. In contrast, there were clear and consistent associations between maltreatment and social problems. These associations corroborate existing research (Kaufman & Cicchetti, 1989; Manly et al., 1994, 2001) and provide support for the validity of the social behavior measures. Collectively, the results of this study suggest that, although maltreatment poses a significant threat to social development during middle childhood, its effects are not mediated by perceived attachment.

The current lack of research addressing the developmental precursors of attachment in middle childhood places significant constraints on the interpretation of these results. A particular concern is that behavior patterns that are central to the concept of attachment may not be reflected in the measures used in this study. There was limited variability in the attachment scales, and because children who expected their mothers to be available and responsive also tended to be excessively dependent and concerned about separation, it is not clear that the scales accurately differentiate between secure and insecure attachment. It may be that children responded in ways that were indicative of

transition or confusion at the level of representation; however, the results of this study do not lend clear support to either of these possibilities.

Another limitation of this study is its exclusive focus on perceived attachment to mothers. Self-report measures cannot be assumed to reflect the actual behavior of children toward their mothers, especially because existing research suggests that secure behavior is not common in cases of maltreatment (Carlson et al., 1989; Lyons-Ruth & Jacobvitz, 2008). There is also no assurance that attachment and its correlates are similar for mothers and alternate caregivers (Howes & Spieker, 2008). This concern is especially relevant in middle childhood, when children are likely to rely on a network of caregivers that may include parents, siblings, and teachers (Siebert & Kerns, 2009). These caregivers can be source of support and security that allows children adapt successfully in the context of significant risk (Masten & Reed, 2002), and are an important resource in prevention efforts.

A related set of constraints pertains to the measures of social behavior used in this study. Associations between attachment and social behavior are generally moderate during middle childhood (Booth-Laforce et al., 2006; Contreras et al., 2000; Yunger et al., 2005), and attachment predicts involvement in friendships more reliably than social acceptance (Schneider et al., 2001). A sense of closeness to friends appears to be particularly important in the context of abuse or neglect (Lynch & Cicchetti, 1991), and supportive friends have been shown to contribute to increases in self-esteem (Bolger et al., 1998). Because the children in this study spent a limited amount of time together, it was not practical to assess their involvement in friendships. Attention to this aspect of

social behavior, especially in combination with measures of developmental processes related to self-concept and regulation, could provide a clearer explanation of how perceived attachment influences social development during middle childhood.

The results of this study suggest directions for continued research in the areas of prevention and intervention. Attachment is a central concept in these areas because it has been shown to contribute to later social adaptation (Sroufe, 2005; Thompson, 2008), yet it is not always possible or practical to assess attachment in children who require services. There is a clear need for measures that are developmentally appropriate and suited to a clinical context; however, the measures included in this study do not appear to accurately capture variation in attachment among at-risk children. It is therefore advisable to avoid relying exclusively on these measures, although they may prove informative in combination with projective measures or assessments of behavior toward a caregiver. It is possible that some children learn to express views about attachment that conflict with their actual experience as a means of adapting to an extremely withdrawn or threatening caregiver (Crittenden, 1999). This approach may be protective in the short term, but is likely to cause problems in later relationships, and is therefore an issue of considerable relevance to prevention and intervention (Crittenden, 2002).

Abuse and neglect are known to affect the way children interpret and respond to social situations, and it is quite possible that these experiences also interfere with the ability of children to realistically describe their attachment. As children develop awareness of social expectations and the ability to control their behavior, their responses to attachment measures are likely to become more susceptible to the effects of defensive

processes and efforts to seek social approval. These effects can best be addressed by simultaneously assessing different aspects of attachment with a combination of questionnaire, projective, and behavioral measures. This approach could help to clarify the current pattern of results and identify effects of abuse and neglect that can be targeted in prevention and intervention programs during middle childhood.

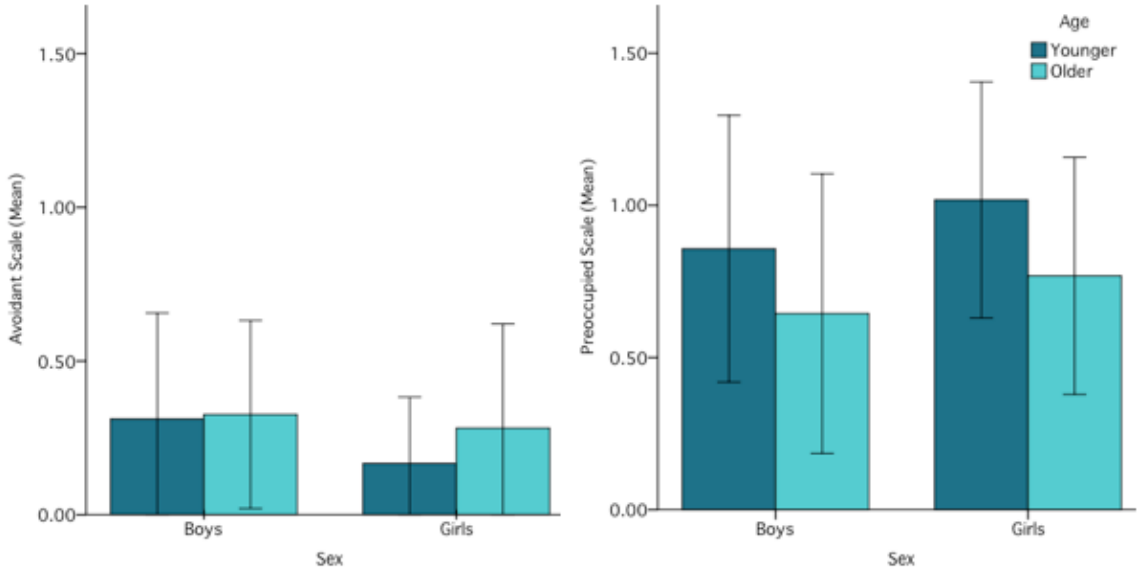
Table 1. Scores on the Security Scale and Coping Strategies Questionnaire (CSQ) as a function of sex and age.

Sex		
	Boys *M (SD)*	**Girls** *M (SD)*
Security Scale	3.30 (.50)	3.29 (.55)
CSQ Avoidant* **	.32 (.33)	.23 (.29)
CSQ Preoccupied* **	.75 (.46)	.89 (.41)

Age		
	Younger *M (SD)*	**Older** *M (SD)*
Security Scale	3.33 (.51)	3.26 (.54)
CSQ Avoidant **	.24 (.30)	.30 (.32)
CSQ Preoccupied* **	.94 (.42)	.71 (.43)

*$p < .05$, **$p < .01$, ***$p < .001$

Figure 1. Scores on the avoidant and preoccupied Scales of the Coping Strategies Questionnaire (CSQ) function of sex and age. There were significant effects of sex and age (avoidant: boys > girls, older > younger; preoccupied: girls > boys, younger > older). There was also a significant age x sex interaction (avoidant: younger boys > younger girls, older boys = older girls; preoccupied: younger boys = younger girls, older boys = older girls). In all cases, $p < .05$.



Note: Bars represent +/- 1 standard deviation.

Table 2. Scores on the Security Scale and Coping Strategies Questionnaire (CSQ) for maltreated and non-maltreated children.

	Maltreated *M (SD)*	**Non-Maltreated** *M (SD)*
Security Scale	3.26 (.55)	3.32 (.50)
CSQ Avoidant*	.30 (.33)	.25 (.33)
CSQ Preoccupied	.82 (.44)	.83 (.44)

*$p < .05$, **$p < .01$, ***$p < .001$

Table 3. Scores on the Security Scale and Coping Strategies Questionnaire (CSQ) as a function of maltreatment timing. Effects are based on ANCOVA analyses with age as a covariate.

Maltreatment Onset		
	Infant/Toddler *M (SD)*	**Preschool/School** *M (SD)*
Security Scale	3.29 (.52)	3.23 (.57)
CSQ Avoidant*	.26 (.29)	.33 (.37)
CSQ Preoccupied†	.90 (.44)	.74 (.43)

Maltreatment Recency		
	Infant/Toddler *M (SD)*	**Preschool/School** *M (SD)*
Security Scale*	3.40 (.43)	3.24 (.57)
CSQ Avoidant	.23 (.24)	.31 (.34)
CSQ Preoccupied	.87 (.42)	.81 (.44)

† $p = .07$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 4. Correlations between peer- and counselor-rated social behavior.

		Counselor Ratings (PEI)		
		Aggression	**Withdrawal**	**Likeability**
Peer Ratings (PSR)	**Acceptance**	-.21***	-.33***	.34***
	Liked Most	-.06	-.32***	-.32***
	Liked Least	.29***	.21**	-.32***
	Disruptive	.64***	.03	-.37***
	Cooperative	-.42***	-.08	.47***
	Acts Shy	-.29***	.48***	-.03
	Starts Fights	.60***	-.06	-.31***
	Leadership	-.30***	-.30***	.34***

*$p < .05$, **$p < .01$, ***$p < .001$

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