ABSTRACT

Caregiver Attachment Representations and Caregiver-Child Interactions in
Adoptive and Foster Dyads

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The aim of the study was to assess the relationship between child-specific
caregiver attachment representations as measured by the Working Model of the Child
Interview (WMCI) and the quality of caregiver-child interactions using the Marschak
Interaction Method (MIM) in a sample of adopted and foster children (aged 2 ½-9) and
their caregivers. Attachment theory suggests that caregiver representations are the
driving force for caregiver-child interactions and attachment security in both biologically
related and adoptive caregiver-child dyads. Caregiver attachment representations
(Balanced, Disengaged, and Distorted) as measured by the WMCI were hypothesized to
correspond with the quality of parent-child interaction ratings on the MIM, coded using
the Marschak Interaction Method Behavioral Rating System (MIMBRS). One-way
ANOVA, Kruskal-Wallis, and post-hoc analyses were completed to distinguish
differences in scores between WMCI classifications and three MIMBRS scales (Parent
Behavior, Child Behavior, Overall Summary), as well as three MIMBRS subscales (Dyad
Social Involvement, Child Task Focus, and Child Facial Expression/Affect). Caregivers
classified as Balanced displayed higher quality parent attachment behaviors than

caregivers classified as Disengaged; however, parent behavior ratings did not differ between Balanced and Distorted caregivers. Overall attachment behaviors (summing Parent Behavior, Child Behavior, and Dyad Behavior), child attachment behaviors (including task-oriented and affect-oriented behaviors), and dyadic behaviors (social involvement) were not significantly related to caregiver representations. Using exploratory analyses, caregiver-child dyads displayed more optimal dyadic interaction behaviors when the caregiver was classified as Balanced in comparison to dyads where the caregiver was classified as Nonbalanced (Detached or Distorted). Additionally, adoptive dyads scored significantly higher than foster dyads on the Parent Behavior, Dyad Behavior, and overall attachment behavior ratings. This study underscores the relationship between caregiver representations and caregiving behavior for adoptive and foster caregiver-child dyads, with variability in attachment between adoptive and foster dyads.

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Adoptive and Foster Dyads

by

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A Dissertation

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CHAPTER ONE

Introduction

Clinicians and researchers have long examined the parent-child relationship and what guides these dyadic interactions. Bowlby's theory of attachment (1969, 1973, 1980) asserts that through dynamic and repeated interactions between the caregiver and infant, internal representations or "working models" emerge. These working models are essentially the infant's representation of the caregiver's availability and ability to meet his or her needs. Secure relationships are characterized by a caregiver who is reliably available and sensitive to the child's needs while allowing for exploration, where an insecure relationship is marked by a caregiver who is misattuned or inconsistent in meeting the child's needs. Representations, both secure and insecure, are thought to guide the child's responses to internal and environmental experiences throughout the lifespan, developing into adult attachment representations (Main, Kaplan & Cassidy, 1985). Although representations are generally considered stable, they are also influenced by new experiences and relationships (Bowlby, 1980; 1988).

Children in foster care or adoptive placements are presented with the difficult task of establishing an attachment relationship with a new caregiver after a disruption in care. Unfortunately, most of the research in the attachment literature has primarily focused on biological attachment relationships, leaving questions about the attachment process for non-primary caregivers and adopted children. For biological dyads, adult attachment representations are most predictive of an infant's attachment security (van IJzendoorn, 1995) and have consistently corresponded to parenting behavior in caregiving

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relationships (Bowlby, 1969; Stern, 1995; Zeanah & Benoit, 1995; Slade, Belsky, Aber, Phelps; 1999); however, less is known about the relationship between caregiver representations and the quality of caregiver-child attachment interactions (parenting behaviors, child attachment behaviors, and dyadic behaviors) for adoptive and foster parent-child dyads. Theoretically, Stern's model of attachment (1989) argues for mutual interdependence between caregiver representations and dyadic interactions, which suggests that this would also be the case for adoptive and foster dyads.

There are approximately 1.8 million adopted children residing in the United States today, with an additional 104,000 children in foster care waiting to be adopted (U.S. Department of Health & Human Services, 2011). Adopted and foster children, especially those that enter foster or adoptive placements past early infancy, have likely experienced various losses, trauma, and/or adversity (Hodges, Steele, Hillman, Henderson, & Kaniuk , 2005; Simmel, 2007), which increases the risk for later maladjustment (Horwitz, Balestracci, & Simms, 2001; Verhulst, Althaus, & Versluis-den Bieman, 1990).   These children have likely spent time waiting to be adopted and living in multiple residences prior to adoption (Hodges et al., 2005; Wulczyn, Hislop, & Goerge, 2000), with 36 months as the mean length of stay in foster care for children waiting to be adopted (U.S. DHHS, 2011). Children that have spent time in foster care have likely experienced insecure relationships with previous caregivers (Crittenden, 1983; Egeland & Sroufe 1981; Spieker & Booth, 1988) and may initially act ambivalent, mistrusting, or withdrawn when introduced to new caregivers or adoptive parents (Sroufe, 1988).

Given these early negative experiences, it is not surprising that a large proportion of adopted and foster children receive mental health services (Brand & Brinich, 1999;

Brodzinsky, Radice, Huffman, & Merkler, 1987; Juffer & van IJzendoorn, 2005; Miller & Christensen, 2000; Sharma, McGue, & Benson, 1998) and tend to have high rates of behavioral problems (Juffer, 2006; Juffer, Stams, & van IJzendoorn, 2004; Newton, Litrownik, & Landsverk, 2000; Verhulst et al., 1990). Adopted children also have been found to have lower levels of academic achievement and increased special-education referrals (van IJzendoorn & Juffer, 2005; Dalen, 2007; Lipman, Offord, Racine, & Boyle, 1992).

Considering that adopted and foster children are at a greater risk for mental health problems and other developmental difficulties, research on adopted and foster children has been directed at finding ways to better serve this population. One of the major areas of study for the adoptive and foster care population has been attachment security. Studies examining both biological and adoptive caregiver-child dyads have found evidence for the predictive value of attachment security on developmental outcomes, with secure attachments associated with higher levels of positive mood and agreeableness, more constructive coping, more prosocial behaviors, fewer peer relationship problems, and fewer conduct problems (Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Keskin & Cam, 2010; Stams, Juffer, & van IJzendoorn, 2002; Zimmermann, Mohr, & Spangler, 2009). Individuals with insecure working models of attachment have been found to be at greater risk for problems in interpersonal relationships across the lifespan (Ainsworth, 1985; Cassidy & Shaver, 1999; Main et al., 1985) and are more likely to meet the criteria for psychopathological disorders (Brown & Wright, 2003; Svanberg, 1998; Ward, Lee, & Polan, 2006).

These findings suggest that the adoptive or foster parent's attachment security and ability to meet the child's needs is particularly central to the resiliency of the child and child's ability to meet developmental tasks. The biological parent contributions have been found to be more important in shaping the parent-child relationship and dyadic interactions than the child contributions (van IJzendoorn & Goldberg, 1992). Thus, it was expected that caregiver representations would also be the driving force in interactions for adoptive and foster dyads where the child may bring insecure working models. The purpose of this study was to evaluate the relationship between the caregiver's subjective experience of the child (representation), and the quality of the dyad's interactive behaviors (both parent and child behaviors) in an adoptive and foster population. Despite increased risk factors for adoptive and foster children when compared to biological children, attachment theory suggests caregiver representations will prove to play a significant role in attachment behaviors and dyadic interactions. Findings may offer better understanding of the caregiver-child relationship, leading to improvements in treating disturbances of attachment relationships in adoptive and foster families.

Attachment Theory and Research

John Bowlby's theory of attachment (1969, 1973, 1980) asserts that infants seek proximity to their caregivers as an evolutionary response to potential threats, looking to caregivers for comfort and security while exploring the world. These repeated interactions over time are thought to develop into representations of the caregiver's availability and attunement to the child's needs (Bretherton, 1985). An individual is often confronted with information about relationships with caregivers and significant

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others throughout the lifespan and is thought to incorporate those interactions into their existing representations (Bowlby, 1980; Main et. al, 1985). Representations are believed to be relatively stable over time, and significant changes to the child's representations become more difficult as time passes (Bowlby, 1973 &1980; Bretherton, 1985).

Bowlby's attachment theory stimulated a large body of research examining attachment relationships and their development. There are four attachment patterns that are recognized in the attachment literature: secure, insecure-ambivalent, insecure-avoidant, and disorganized (Ainsworth, Blehar, Waters, & Wall, 1978; Main & Solomon, 1990). Mary Ainsworth was the first researcher to develop a method to assess the attachment relationship. The Strange Situation was developed in order to assess the parent and child's behavioral reactions to increasingly stressful experiences, including separation and reunion using 1-year old infants (Ainsworth & Bell, 1970; Ainsworth et al., 1978). Ainsworth described the reactions of the infants and categorized the pattern of reactions seen as secure, insecure-ambivalent, or insecure- avoidant attachments. A *secure* attachment is characterized by the infant's freedom to explore the environment while simultaneously finding comfort and safety in the caregiver's ability to consistently meet his or her needs. An *insecure-ambivalent* attachment is marked by a parent who is inconsistent in meeting the infant's needs due to alternating between intrusive and neglectful or inattentive behaviors. An *insecure-avoidant* attachment is characterized by distancing and dismissive behavior from the attachment figure paralleling similar avoidant behaviors in the infant. Main and Solomon (1986) elaborated on a fourth category of attachment, disorganized attachment, as they found that some infants did not match the characteristics of the other attachment styles and showed a pattern of freezing

or other confusing behavior. *Disorganized* attachment most commonly occurs when the infant experiences frightening or threatening behavior from the caregiver.

<center>*Measurements of Attachment*</center>

Observational Measurements of Attachment

Ainsworth's Strange Situation Procedure (SSP) has become the most researched assessment of attachment using infants' behavioral responses during separation and reunion from their caregivers (SSP; Ainsworth, Blehar, Waters, & Wall, 1978). The SSP observes the infant with the caregiver, during the introduction of a stranger, and when the mother leaves and returns and attempts to soothe the child (Ainsworth et al., 1978). It assesses the dyad using four dimensions: proximity and contact seeking, contact maintaining, resistance, and avoidance. The SSP has established high inter-rater reliability in its ability to classify dyads into attachment categories (Ainsworth et al., 1978; Egeland & Farber, 1984; Main & Cassidy, 1988). As previously mentioned, Main and Solomon (1986) distinguished a disorganized/disoriented classification while using the Strange Situation to assess infants and later developed a system for identifying the fourth category (Main & Goldwyn, 1984, 1998).

Ainsworth's Strange Situation has been consistently validated as a measurement of attachment and continues to be thought of as the "gold standard" for use with infants and toddlers (Crittenden, Claussen and Kozlowska, 2007; Laible, 2005; Main & Cassidy, 1988; Solomon & George, 1999; Thompson, 1999). However, there are disadvantages to using the SSP. One restriction in the utility of the SSP is that it has only been validated for infants falling between 12 and 20 months of age (Marvin & Britner, 1999; Solomon & George, 1999). Additionally, using a singular task can assess specific behaviors related

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to a stressful condition of separation and reunion, but does not capture the full range of behavioral and affective experiences between the parent-child dyad. Field (1987) argues that a more complex paradigm than the Strange Situation is necessary in order to encompass both stressful and non-stressful interactions. The single occurrence measured by the SSP may be incomplete in assessing the quality of mother-infant interactions (Lindaman, Booth, & Chambers, 2000). These limitations can be especially prohibitive when working with adopted and foster children, where the average age of adoption from foster care is 6 years old (U.S. DHHS, 2011). Given this restriction, another observational assessment, the Marschak Interaction Method, was chosen for the current study.

While the Ainsworth SSP has restrictions on age and is limited to one observable task, the Marschak Interaction Method (MIM) can be used with children of any age and is able to assess the quality of the parent-child relationship by observing a wide range of tasks and behaviors. The Marschak Interaction Method is an assessment tool created by Marianne Marschak (1960, 1967, 1980) that was originally referred to as the Controlled Interaction Schedule (CIS). Marschak created the CIS in order to have a structured way of evaluating the parent-child interaction rather than using free play. Modifications to the original instrument, by Jernberg and colleagues, divided all the tasks into four categories: structure, nurture, challenge, and engage (Jernberg & Booth, 1999). These four dimensions are based on the Theraplay model of treatment, a relationship-based model that uses structured play therapy and was developed by Jernberg and Booth (Jernberg, 1979). The *Structure* dimension assesses the parent's ability to use clear and appropriate limits to structure the environment and also assesses the child's acceptance of the

structure. The *Challenge* dimension assesses the parent's ability to set developmentally appropriate expectations, provide tasks that are stimulating, and take pride in the child's success. The *Engagement* dimension assesses the parent's ability to hold the child's attention and be attuned to the child's reactions, while it also assesses the degree to which the child and parent take pleasure in each other's company. The *Nurture* dimension assesses the parent's ability to offer comfort and meet the child's needs and also assesses the child's acceptance of the nurturance offered. Finally, a distinct separation-reunion task is also included and provides valuable information about the attachment security of the child as well as the responsiveness of the parent.

According to Lindaman et al. (2000), the MIM is not used to provide a classification of attachment like Ainsworth's Strange Situation but rather assesses typical patterns of interaction between the dyad. More specifically, the MIM is concerned with the overall quality of the relationship between the adult and child rather than the security of the attachment gauged by the separation and reunion of the child. The MIM has primarily been used as a clinical tool, examining both the positive and negative facets of the parent-child interactions, which can then be used for diagnosis and/or intervention (Bojanowski & Ammen, 2011; DiPasquale, 2000; Lindaman et al., 2000). Jernberg and her colleagues broadened the use of the MIM by using it with more diverse populations in respect to age, with couples, with expecting mothers (Prenatal MIM), and in clinical evaluations and treatment (DiPasquale, 2000; Jernberg, 1991). In terms of adoptive and foster care populations, the MIM has been a useful tool for screening suitability or fitness for foster or pre-adoptive placements by examining the quality of the relationship and also assessing the child's capacity to form relationships (Lindaman et al., 2000).

While researchers were developing ways to assess parent-child relationships by observing behavioral interactions, they also began to investigate other means of assessing attachment relationships. Research on the "working model" of attachment later became the new avenue to assess adult's "state of mind" or representations used in all relationships.

Representational Measurements of Attachment

Expanding on Bowlby's "working model" of attachment, George, Kaplan, and Main (1985) developed the Adult Attachment Interview (AAI) in order to examine mental representations of attachment for parents whose infant behavior, using the Ainsworth Strange Situation, had varied patterns of attachment behavior. This semi-structured interview was developed to assess the adult's "state of mind" that develops as result of childhood attachment relationships and attachment-related traumas such as abuse or loss of a loved one (Main et al., 1985). The AAI queries interviewees for descriptions of past childhood relationships and their current relationships with their parents, while looking for contradictions in their memories (George et al., 1985). In relation to parental attachment, *autonomous* (secure) adults are better equipped to appropriately respond to infant attachment cues than adults classified as dismissing or preoccupied. *Dismissing* parents tend to reject their infant or child's attachment behavior in stressful situations, which creates an insecure-avoidant response as indicated by the Strange Situation. *Preoccupied* parents tend to be focused on their own attachment experiences leaving them unable to predictably respond to their child's attachment cues. These parents may respond excessively and inappropriately in order to compensate for their own negative attachment relationships, leading to infants that display an insecure-

ambivalent attachment style. Lastly, *disorganized* parents display frightening or confusing behaviors towards their child due to unresolved attachment issues leading to a disorganized attachment style in the Strange Situation. For the AAI, the interviewees classified as disorganized are also grouped under an additional category: dismissing, autonomous, or preoccupied (Main & Hesse, 1990). While AAI categorizations for adults have been linked to SSP classifications in infants (i.e. Pederson, Gleason, Moran, & Bento, 1998; Steele, Steele, & Fonagy, 1996; van IJzendoorn, 1995), the AAI is limited for purposes of this study in that it is not meant to assess a specific attachment relationship. Research has shown that an infant can have separate and independent attachment relationships with multiple caregivers (Fonagy, Steele, Moran, Steele, & Higgit, 1993; van Ijzendoorn & De Wolff, 1997). Thus, it can be helpful to assess a specific relationship the caregiver has with a particular child, rather than the caregiver's general attachment representations.

To address this problem, Zeanah, Benoit, Hirschberg, Barton, & Regan (1994) developed the Working Model of the Child Interview (WMCI) to assess parents' representations and subjective experience of their child and their relationship with that child. Similar in structure to the AAI, the WMCI has a categorical scoring system in order to assess parents' perceptions of their infants as described in the one-hour semi-structured interview. Zeanah et al. (1994) found a relationship between mothers' narrative description of their infants using the WMCI and their infants' attachment classifications using the Strange Situation. Maternal Representations have been found to be stable over time (Theran, Levendosky, Bogat, & Huth-Bocks, 2005) and WMCI's

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administered during pregnancy have been shown to later correspond with SSP classifications one year later (Benoit, Parker, & Zeanah, 1997).

The WMCI has been used in research and produces three classifications for caregivers that have been shown to be related to the Strange Situation classifications: balanced (paired with secure), disengaged (paired with avoidant), and distorted (paired with ambivalent). These classifications are based on several aspects of the narrative coherence and the parent's affective tone. *Balanced* representations are characterized by discourse that conveys a rich impression of the infant and the caregiver's relationship to the infant while maintaining perceptions of the baby that are flexible and open to new information. The narrative offers a sense that the caregiver is deeply engaged in his or her relationship with the infant with expressed value for the relationship with the infant. *Disengaged* representations are distinguished by a narrative that conveys emotional aloofness and distance from the infant with limited details about the infant and limited flexibility for changes in the representation of the infant. *Distorted* representations, deemed as the most pathological representation category of the three, are characterized by narratives that are inconsistent or contradictory and the caregiver appears preoccupied, distracted, confused, or overwhelmed by the infant. Eight aspects of the narrative are evaluated to determine internal representations of the caregiver: *Openness to Change, Intensity of Involvement, Coherence, Acceptance, Caregiving Sensitivity, Fear for Safety, Affective Tones of the Representation, and Infant Difficulty*.

Transmission of Attachment

The development of representational and observational assessments of attachment allowed researchers to carefully examine the parent-child relationship, but also provided a means to explore possible factors involved in the transmission of attachment security across different populations and multiple generations. Attachment theory suggests that the development of an individual's internal working model or representation from early attachment experiences later predicts how that individual will interact and respond to his or her child, thus influencing the security of the child's attachment to that parent (Bowlby, 1973; Main et al., 1985).

For biological parent-infant dyads, research has reliably demonstrated a strong relationship between parent's attachment representations and their infant's security of attachment (e.g., Benoit & Parker, 1994; Fonagy, Steele, & Steele, 1991; van IJzendoorn, 1995; Ward & Carlson, 1995). Studies have shown a relationship between parent representations and security of the child as old as 6 years of age (Behrens, Hesse, & Main, 2007; George & Solomon, 1989). Similar effects occur with caregiver representations (using the WMCI) and infant security (using the SSP) (Zeanah et. al, 1994). Additionally, Benoit and Parker (1994) conducted a three-generation study using grandmothers, their adult daughters, and their grandchildren, and demonstrated the predictive ability of the grandmothers' attachment representations to both their children and grandchildren's attachment style. A recent study by Hautamäki, Hautamäki, Neuvonen, and Maliniemi-Piispanen (2010) found similar results using a three-generation model. Acknowledging a link between parent representations and infant security,

researchers began to examine what specific parenting behaviors and dyadic interactions are responsible for the transmission of attachment security.

Parent Attachment Representations on Parent-Child Interactions

In order to examine the transmission of attachment representations from parent to child, researchers have investigated the link between parent attachment representations and parent-child interactions during play and instructional tasks (Cohn, Cowan, Cowan, & Pearson, 1992; Crowell & Feldman, 1988; Crowell, O'Connor, Wollmers, Sprafkin, & Rao, 1991). These studies have examined both the parenting behaviors and child behaviors that correspond with parent attachment representations. More recent studies have also examined the link between parent representations and overall dyadic interactions between parent and child.

Parenting Behaviors. Using a clinical and non-clinical preschool sample, Crowell and Feldman (1988) found that secure mothers were more helpful and supportive with their children in a series of teaching tasks than insecure mothers. Mothers categorized as detached were less supportive and tended to control the interactions with an emphasis on task completion and tended to maintain an overall coolness in their interactions. Mothers categorized as preoccupied were also less supportive, struggled with giving directions - often ending up confusing the child -- and tended to vacillate between warm and angry/coercive behaviors. Additionally, they found mothers classified as preoccupied scored the lowest on the mother behavior variables, followed by detached and secure mothers; however, preoccupied and detached mothers did not differ from each other. Similarly, in a study that included a clinic sample of school-aged children, Crowell et al. (1991) found secure mothers to be more supportive and better able to

organize teaching tasks than mothers rated as insecure. In a non-clinical sample examining mother-child and father-child dyads, Cohn et al. (1992) found secure parents to provide more warmth and structure during interactions with their children than parents with insecure classifications.

Caregiver classifications on the WMCI have also been used to predict parent behaviors and quality of the parent-child relationship using parent-child interaction assessments. For instance, Sokolowski, Hans, Bernstein, and Cox (2007) found that mothers with non-balanced attachment representations on the WMCI provided less sensitive, more passive, and less encouraging behaviors in interaction situations than mothers with balanced attachment representations. Korja et al. (2010) found that maternal representations on the WMCI were related to maternal affective involvement and maternal positive communication quality during mother-infant interaction for both preterm and full-term infants and their mothers.

Child Behaviors. Researchers have also found a relationship between parent attachment representations and child behaviors during parent-child interactions (Crowell & Feldman, 1988; Cohn et al., 1992; Crandell, Fitzgerald, & Whipple, 1997). Crowell and Feldman (1988) found that the children's behavior corresponded with the parent representations, where children of mothers classified as secure displayed more positive affect, warmth, and physical closeness towards their mothers. Children with mothers classified as detached acted more distanced towards their mothers, with more flat affect and increased anxiety. Children with mothers classified as preoccupied were inclined to display controlling behaviors and anger towards their mothers. Similar to maternal behaviors reported earlier, children with mothers categorized as preoccupied received the

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lowest scores on the child behavior variables, followed by children with mothers

categorized as preoccupied and secure, respectively. Additionally, they found a stronger

relationship between maternal representations and child affect behaviors/behaviors

related to the relationship (i.e. affection, negativity, avoidance), whereas there was a

limited relationship between maternal representations and child task variables (i.e.

persistence, enthusiasm, and self-reliance). In contrast, a study by Crowell et al. (1991)

found no connection between maternal representations and child behaviors during

mother-child interactions in a study that included children with behavioral problems. The

study examined the relationship between maternal representations and child behaviors

related to the relationship with their mothers, child task behaviors, and child activity

level.

Dyadic Interactions. As noted earlier, the quality of caregiver-child interactions

is a relatively new area of research, as most research in attachment has relied on the

Strange Situation Procedure. Korja et al. (2010) found differences between maternal

representations using the WMCI and the quality of the dyadic interaction behaviors using

the Parent-Child Early Relational Assessment (PCERA; Clark, 1985). Mothers

categorized as having distorted representations displayed a higher number of areas of

concern in the overall mother-infant interactions when compared to other representation

classifications (balanced and disengaged).

Parental Sensitivity as Mediator of Attachment Security

While researchers have demonstrated connections between parent representations

and infant/child security of attachment, clear and comprehensive mechanisms of how

attachment is transmitted continue to remain obscure. Parental representations are

hypothesized, according to Bowlby's attachment theory, to shape the level of sensitivity and responsiveness that parents show in reacting to infant's attachment cues. Essentially, parental sensitivity is thought to mediate adult attachment representations and infant security (Crowell & Feldman, 1988; Slade et. al, 1999). Kennedy (2008) found that maternal sensitivity was highest for mothers of secure infants, followed by mothers of insecure-ambivalent infants, with mothers of disorganized and avoidant infants ranking the lowest for maternal sensitivity.

Van IJzendoorn (1995) completed a meta-analysis of the studies that measured the relationship between parent's attachment representations and parental responsiveness/sensitivity and noted a combined effect size of .72 (Cohen's *d*). Overall, parent attachment representations accounted for only 12% of the variance of parent responsiveness in free play and instructional tasks. Thus, van IJzendoorn suggests that more research is necessary to account for the "transmission gap" through which parental attachment representations affect the child's attachment relationship to the parent. Sensitive responsiveness is thought to be insufficient in accounting for the strong correspondence between parent and child attachment representations. Van IJzendoorn (1995) points to child temperament and other unknown factors as other possible mediators in the transmission of attachment security.

Adoption and Attachment

Nearly all of the research on parent-child attachment has focused on biological relationships. As noted earlier, adoptive and foster children and their caregivers bring unique risk factors to the attachment process. When compared to biological children, attachment security in adoptive and foster populations has demonstrated great variability.

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While some researchers have found adopted children to have less attachment security than biological children (O'Conner, Marvin, Rutter, Olrick, & Britner, 2003; Rutter et. al, 2007; van IJzendoorn & Juffer, 2006) others have found adopted children to have similar attachment security to biological children (Joseph, 2002; Juffer & Rosenboom, 1997). In a meta-analysis by van den Dries, Juffer, van IJzendoorn, and Bakermans-Kranenburg (2009) found that although children adopted before 12 months of age were as securely attached as biological children, children adopted after 12 months of age were less securely attached. They also found that adopted children generally demonstrated more disorganized attachments than biological children and were comparable to foster children's levels of disorganized attachment. For adopted and foster children, a prior insecure attachment, likely due to the effects of early caregiver experiences, may impact the child's interactions with a new caregiver and may result in another insecure attachment with the new caregiver (Bowlby, 1982; Lamb, Gaensbauer, Malkin, & Schultz, 1985; Shapiro & Shapiro, 2006; Stovall & Dozier, 1998).

Despite early negative experiences, adopted and foster children are capable of creating new representations and patterns of attachment, while overcoming their previously formed insecure working models with new caregivers that are sensitive to the child's attachment history (Howes & Segal 1993; Howes, 1999; Steele, Hodges, Kaniuk, & Steele, 2010; Shapiro & Shapiro, 2006; Sroufe, Egeland, Carlson, & Collins, 2005). Even with disruption in the first year and a half of life or beyond, research has shown that infants and children are able to attach to their adoptive or foster parents (Cole, 2005; Dozier, Stovall, Albus, & Bates, 2001; Lamb et al., 1985; Pace & Zavattini, 2011; Stovall & Dozier, 2000). Maternal sensitivity for both foster and adoptive parents has proven to

be an important factor in predicting security of attachment for both early and late placed adoptions (Juffer & Rosenboom, 1997; Ponciano, 2010). Additionally, Stovall-McClough and Dozier (2004) found that attachment behavior between a foster parent and infant formed within 2 months of placement and the infants fared better if placed before 12 months of age.

Since foster and adopted children have likely experienced insecure relationships with previous caregivers, the new adoptive or foster parent's attachment security is particularly vital to the new relationship's ability to thrive. As is the case with biological parent-child dyads, studies have shown a relationship between foster parent representations of early attachment experiences and foster children's attachment security using Ainsworth's Strange Situation (Dozier et al., 2001; Stovall-McClough & Dozier, 2004; Stovall & Dozier, 2000). Cole (2005) found that the caregiver's childhood experience of abuse and his or her level of involvement with the infant to be significant factors that can negatively affect the infant's security of attachment in foster care. For adoptive dyads, adoptive parent representations have been found to correspond with adoptive children's representations of attachment using narrative assessments (Steele et al., 2008; Steele, Hodges, Kaniuk, Hillman, & Henderson, 2003).

To date, no research studies have examined the relationship between caregiver representations for a specific child and observations of parenting behaviors, child behaviors, and quality of dyadic interactions for adoptive or foster dyads. As noted previously, late placed adopted children may be precluded from using Ainsworth's Strange Situation due to limits on age, and utilizing another observational assessment such as the MIM may be more appropriate for this population.

Overview of Current Study

The aim of the present study was to evaluate the relationship between caregiver attachment representations regarding a specific child and the quality of caregiver–child interactions in an adoptive and foster population. In particular, I examined the association between caregiver attachment representations and observed caregiver attachment behaviors, child attachment behaviors, and overall quality of dyadic attachment behaviors in an interactional assessment. To investigate this relationship, the WMCI interview was administered to the caregivers and coded for Balanced, Disengaged, or Distorted attachment representations related to his or her adopted/foster child. To assess the quality of parent-child interactions, the MIM, using the Marschak Interaction Method Behavior Rating System (MIMBRS; McKay, Pickens, & Stewart, 1996), was used to rate observations on the Parent Behavior, Child Behavior, and Dyad Behavior constructs. All three construct scales were summed together for the Overall Summary Score, which assesses the overall quality of interaction for the dyads. Additionally, the Social Involvement/Engagement (Dyad Behavior), Task Focus (Child Behavior), and Facial Expression/Affect (Child Behavior) subscales were also used in relationship to the caregiver attachment representations. The caregiver scores on the WMCI were grouped into three attachment categories, which fall into a continuum according to severity (Balanced, Disengaged, Distorted) and then evaluated for their unique relationships with the MIMBRS constructs and subscales. It was hypothesized that that the WMCI categorization would be compatible with the observed quality of parent-child interaction ratings according to the MIM constructs in the following manner:

1. Caregivers with a Balanced representation of their child based on the WMCI would receive significantly higher scores on the MIMBRS Overall Summary Score than caregivers with Disengaged or Distorted representations.

2. Caregivers with a Balanced representation of their child based on the WMCI would receive significantly higher scores on the MIMBRS Parent Behavior construct than caregivers with Disengaged or Distorted representations.

3. Children whose caregivers were categorized as Balanced on the WMCI would receive a significantly higher score on the MIMBRS Child Behavior construct than children whose caregivers were categorized as Disengaged or Distorted.

4. Children whose caregivers were categorized as Balanced on the WMCI would score significantly higher on the Facial Expression/Affect subscale of the MIMBRS Child Behavior construct than children whose caregivers were categorized as Disengaged and Distorted. The caregiver representations on the WMCI will not have a significant relationship with the Task Focus/On-Task Attentiveness subscale of the MIMBRS Child Behavior construct.

5. Caregivers with a Distorted representation of their child based on the WMCI would have a significantly higher score on the Social Involvement subscale of the MIMBRS Dyad Behavior construct than caregivers with Disengaged representations.

CHAPTER TWO

Methods

Participants

Participants in this study were adoptive or foster parents and their adoptive or foster children that were recruited from local adoption and foster care agencies. Letters describing the study were dispersed to the Texas Department of Family and Protective Services (DFPS), Lutheran Social Services, and community health providers, which were the main agencies that offered referrals to the study. In order to qualify as participants in the study, the children met the following guidelines: aged two and one half through nine years of age, born in the United States, and having lived with the adoptive or foster parent(s) for a minimum of four months. As noted earlier, attachment patterns for foster children tend to appear by two months of placement (Stovall-McClough & Dozier, 2004), and it was thought that the attachment patterns for the dyads in the study would be present after four months of placement.

Sixty-seven dyads participated in the study; however, eight dyads were not included due to problems with recording for either of the assessments used in this study. Siblings living with the same adoptive or foster parent were included in this study. Due to issues of non-independence of the data for the siblings included, one of the siblings per family were randomly removed from the sample. Eleven dyads were randomly removed leaving a sample size of $n = 48$. The children ranged in age from 2 to 9 years old (mean=5.45, SD= 2.11). The ethnic backgrounds of the child participants were recorded as follows: 50.0% Caucasian, 22.6% African American, 11.3% Hispanic, 12.9% Multi-

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racial, and 3.2% Native American. The caregivers who participated in this study were

approximately 84% female and 16% male. Child gender for the participants was

approximately 60% male and 40% female. The average age of placement with their

adoptive or foster families was 40.35 months old and this ranged from 0 to 107 months of

age. The child's length of stay with their adoptive or foster family ranged from 6 to 93

months (mean = 31.29, SD = 21.05). Caregivers reported that 40.3% of the child

participants were currently in therapy and 59.7% were not participating in therapy

services. Fifty percent of the dyads were foster placements and 50% were adoptive

placements. Forty-two percent of the caregiver-child dyads were biological relatives.

Procedure

All assessments were performed at the Baylor University Psychology Clinic.

The data used in this study were primarily archival (75%), spanning approximately 4

years; however, the principal investigator was part of the original data collection team

and assisted in carrying out the study during the second phase of data collection. For the

first round of data collection, evaluations were completed in either a three-hour session or

two ninety-minute sessions, depending on the caregiver's preference. The WMCI and

informed consent were intended to be completed in one hour. The MIM allowed 30-

minutes for administration to both the caregiver and child. Other assessments and

questionnaires were administered in the remaining time; however, those assessments are

not included in this study. Each of the assessment instruments used was obtained using

trained interviewers and administrators. The principal investigator was one of the

interviewers and assessors during the four years of data collection. Participants were

provided with written feedback summarizing findings from the completed assessments

and were paid twenty-five dollars to compensate for travel costs for each visit. The

second sequence of data collection removed some of the previously administered

questionnaires and assessments that do not pertain to this study. For families with two

parents in the home, the family was allowed to choose which parent would participate in

the study.

Measures

Working Model of the Child Interview (WMCI)

The WMCI is a semi-structured interview, lasting approximately one hour, that

inquires about the caregiver's mental representations and conceptualization of the child

and their relationship with the child (Zeanah et al., 1994). The interviewer asks the

caregiver to describe his or her experiences of the child starting from birth, including

perceptions of how each member of the dyad influence each other, as well as their wishes

and expectations of the child's future. Caregivers are queried for both general and

specific memories of their child that demonstrate their impressions of the child and their

relationship. The caregiver is asked to choose five words to describe the child and then

offer specific events that are indicative of the five descriptors. Further, the caregiver is

asked to discuss the child's challenging behaviors and how he or she responds

emotionally and manages the interactions. The goal of the interview is to offer a full and

coherent narrative, which is representative of a "balanced" working model of the child.

In terms of concurrent and predictive validity, Zeanah et al. (1994) found

mothers' WMCI classifications of their infants (balanced, distorted, and disengaged)

corresponded with the infants' Strange Situation classifications for 69% of the dyads.

Another study found mothers' pregnancy WMCI scores were able to predict the infants'

Strange Situation classifications at 12 months of age in 74% of the cases; at a later time, they found a continued association between the WMCI and Strange Situation classifications for 73% of the cases (Benoit et al., 1997). The WMCI classifications were also found to be stable over 12 months in 80% of the mothers (Benoit et al., 1997). Interrater reliability has ranged from .57 to .76, with lower reliability found for the prenatal WMCI administrations (Benoit et al., 1997; Zeanah et al., 1994). Research on the rating system of the WMCI suggests that videotape coding and transcript coding are both valid methods for assessing narratives (Rosenblum, Zeanah, McDonough, & Muzik, 2004).

All interviews were videotaped and the first round of data collection was subsequently coded by a qualified rater who had been trained at Tulane University under the supervision of Dr. Charles Zeanah and Dr. Anna Smyke, reaching 80% reliability on twenty WMCI tapes (Schofield, 2010). The second round of data collection was coded by Dr. Anna Smyke, an expert coder. Thirty-six tapes and twelve tapes were included in this study, respectively, after siblings were removed. The Zeanah, Benoit, Barton, and Hirschberg (1996) system was used to code the eight narrative features of the WMCI including the rating of affective tones in order to classify the caregiver's response into one of the three categories (Balanced, Distorted, and Disengaged).

Marschak Interaction Method (MIM)

The MIM is an observational, attachment-based assessment that utilizes various tasks to draw out behaviors between two individuals (Lindaman et al., 2000), in this case the caregiver and child. The dyadic interactions are evaluated based on the ability to offer and accept areas of Structure, Nurturance, Challenge, and Engagement by both the

caregiver and the child. In this study, each caregiver-child dyad was administered ten different tasks from the MIM that were selected for the age range of children included in this study. The administrator of the MIM has the adult and child sit side-by-side at a table. A bag containing ten cards that describe each of the tasks and the corresponding materials is placed near the adult. Instructions read by the administrator state: "These cards describe some things we'd like you to do together. (To the caregiver) Pick up the top card, read it aloud, and do the activity. It's up to you to decide when to go on to the next activity. There is no right or wrong way to do the activities. When you are finished, I will come back to ask you a few questions." The tasks used in this study included: caregiver shows child himself/herself in a mirror; caregiver places a band-aid on the child; caregiver shows child pictures and has child describe them; child opens a child-proof jar; caregiver-child 3-legged race; caregiver tells child a story about being a baby; caregiver instructs child to hop on one foot; caregiver and child sing a song together; caregiver teaches the child something he or she does not know; and caregiver leaves the room for one minute.

The Marschak Interaction Method Behavior Rating System (MIMBRS; McKay, Pickens, & Stewart, 1996) was used to code the MIM videotapes in this study (See Appendix E). McKay et al. (1996) developed the Marschak Interaction Method Behavioral Rating Scale in order to quantify the parent-child interactive behavior observed using the MIM (See Appendix D). Each item on the MIMBRS is scored using a 1 to 5 point likert scale, with 1 being problematic and 5 being most favorable (McKay et al., 1996). The MIMBRS coding scheme includes eight behavioral rating items for the parent, seven behavioral rating items for the child, and three behavioral rating items for

the parent-child dyad. The three scales are summed together and comprise the overall summary score. Pickens (1997) developed a manual that provides definitions for the items on the MIMBRS. Areas examined in each of the scales include: expression/appropriateness of affect, quality of vocalization, proximity/body orientation, gaze fixation/aversion, tendency to remain task-focused, tendency to offer assistance, and playfulness for each task. While the MIM has proven to be a useful clinical tool, its use as a research tool has more recently been developed. McKay et al. (1996) demonstrated an inter-rater reliability that ranged from .52 to .89 on the various scales.

A qualified rater coded all of the MIM videotapes and was trained on the MIMBRS coding system by one of the original authors, Dr. Anne Stewart (Bickell, 2012). Dr. Stewart chose to code every 6th tape to assess for reliability after the initial coding was completed by the qualified rater. The qualified rater achieved .78 inter-rater reliability with the expert coder using the intra-class correlation coefficient and Cronbach's alpha @ = .88 on the 18 individual scores on the MIMBRS, followed by MIMBRS Parent Behavior, ICC (2, 1) =.81; α=.90; MIMBRS Child Behavior, ICC (2, 1) = .89; α=.94; MIMBRS Dyad Behavior ICC (2, 1) = .84; α=.91; and MIMBRS Overall Summary Score ICC (2, 1) = .90; α=.94. A MIMBRS overall summary score is tallied by summing the three dimensions (Parent Behavior, Child Behavior, and Dyad Behavior).

Data Analysis

Using SPSS 20.0, a One-way Analysis of Variance (ANOVA) was used to assess the differences in scores between caregiver classifications on the WMCI (Balanced, Disengaged, and Distorted) and observed domains (Parent Behavior, Child Behavior) as well as the Overall Summary Score (Parent Behavior, Child Behavior, and Dyad

Behavior constructs). Independent t-tests were also used to assess differences between the MIMBRS constructs for the Balanced and Nonbalanced (Disengaged and Distorted) caregiver groups. The Kruskal-Wallis test was used to assess the relationship between the WMCI groups and the MIMBRS Child Behavior subscales (Facial Expression/Affect and Task Focus) and the MIMBRS Dyad subscale (Social Involvement). The Kruskal-Wallis test was selected for the subscale items as only one response item was used instead of several items summed together (i.e. Parent, Child domains). An alpha level of .05 was used for all statistical tests. Where appropriate, post-hoc analyses were computed using Tukey's Honest Significant Difference (HSD) test to assess the differences in scores between caregiver classifications: Balanced vs. Disengaged, Balanced vs. Distorted, and Disengaged vs. Distorted classifications. Eta squared and Cohen's *d* effect sizes were calculated for differences found between the WMCI classifications and the MIMBRS variables. Lastly, a Factorial 3x2x2 Analysis of Variance (ANOVA) was conducted to assess interactions between WMCI classifications (3), parent gender (2), and adoptive vs. foster status (2) for the Parent Behavior construct.

CHAPTER THREE

Results

Caregivers were categorized in to the following WMCI groups: 62.5% Balanced, 25% Distorted, and 12.5% Disengaged. When grouped into Balanced and Nonbalanced (Distorted or Disengaged) groups, percentages for the Balanced and Nonbalanced category were 62.5% and 37.5%, respectively. Vreeswijk, Maas, and Van Bakel (2012) found that in a nonclinical population, 52.59% of the caregivers were categorized as Balanced, 26.33% were categorized as Distorted, and 21.08% were categorized as Disengaged. This indicates that our sample had higher levels of Balanced caregiver representations and less Disengaged caregiver representations than would be predicted by the aforementioned review. When grouped by foster caregivers and adoptive caregivers, 52.4 % of foster caregivers were categorized as Balanced (47.6% Nonbalanced), compared to the 70.4% adoptive caregivers that were categorized as Balanced (29.6% Nonbalanced).

Means and standard deviations for the MIMBRS constructs (Parent, Child, Dyad, Overall) are reported in Table 1. The Levene test for homogeneity of variance was used to assess if the MIMBRS constructs met assumptions of homogeneity of variance when grouped in the WMCI categories (Balanced, Disengaged, and Distorted). The Levene test found that all of the MIMBRS constructs: Parent Behavior ($F = .844$, $p = .363$) Child Behavior ($F = 1.509$, $p = .226$), Dyad Behavior ($F = .79$, $p = .379$), and Overall Summary Score ($F = 2.568$, $p = .116$) did not meet statistical significance when grouped by the

WMCI categories. The findings suggest that homogeneity of variances for these groups

were met.

Table 1. *Overall Means and Standard Deviations for MIMBRS Scores*

MIMBRS Score	M	SD
Parent	28.42	7.42
Child	24.31	6.48
Dyad	9.58	2.97
Overall	62.31	15.18

Hypothesis 1: *Caregivers with a Balanced representation of their child based on the WMCI will receive higher scores on the MIMBRS Overall Summary Score (combining the Parent Behavior, Child Behavior, and Dyad scores) than caregivers with Disengaged or Distorted representations.*

A one-way ANOVA was used to compare the relationship between the caregiver

WMCI classifications (Balanced, Distorted, and Disengaged) and the MIMBRS Overall

Summary Score. The result was not significant [F (2,45) = 2.311, p = .111], suggesting

no differences between Balanced, Distorted, and Disengaged classifications on the

MIMBRS Overall Summary Score. Due to the small sample size, the sample was

regrouped into Balanced and Nonbalanced (Distorted and Disengaged) groups. An

independent t-test was conducted to assess differences between the Balanced and

Nonbalanced groups on the MIMBRS Overall Summary Score. No significant

differences were detected, however the results approached significance, where the

Balanced group scored higher than the Nonbalanced group (t = 1.932, p = .06). Results

for both tests are listed in Table 2 and 3, respectively.

Table 2. *Means and Standard Deviations for MIMBRS Scores by WMCI groups*

MIMBRS Score	Balanced		Disengaged		Distorted		η^2
	M	SD	M	SD	M	SD	
Overall	65.50	13.18	52.33	17.90	59.33	17.00	.093
Parent	30.63*	6.20	21.00*	6.75	26.58	8.14	.200
Child	24.57	5.95	24.00	9.25	23.83	6.85	.003
Dyad	10.30	2.62	7.33	3.14	8.92	3.26	.123

*Note. Means with * differ at the p<.01*

Table 3. *Independent t-tests for MIMBRS Scores by Balanced vs. Nonbalanced*

MIMBRS Score	Balanced		Nonbalanced		t	p	Cohen's d
	M	SD	M	SD			
Overall	65.50	13.18	57.00	17.11	1.932	.06	.56
Parent	30.63	6.20	24.72	7.98	2.87	.006	.83
Child	24.57	5.95	23.89	7.45	.347	.730	.10
Dyad	10.30	2.62	8.39	3.22	2.246	.030	.65

Post Hoc Analysis

A one-way ANOVA was used to analyze differences between the caregiver WMCI classifications on the MIMBRS Dyad Behavior construct, one of the components of the MIMBRS Overall Summary Score. Results suggested a nearly significant relationship [F (2,45) = 3.155, p = .052]. When grouped by Balanced vs. Nonbalanced, the Balanced group scored significantly higher on the MIMBRS Dyad score than the Nonbalanced group (t = 2.246, p = .03). Results are reported above in Table 3.

Hypothesis 2: *Caregivers with a Balanced representation of their child based on the WMCI will receive higher scores on the MIMBRS Parent Behavior construct than caregivers with Disengaged or Distorted representations.*

A one-way ANOVA was conducted to assess if there was a significant relationship between caregiver WMCI classifications (Balanced, Disengaged, and Distorted) and the MIMBRS Parent Behavior construct. Results indicated a significant effect of WMCI classifications on parent behavior for the three groups [F (2,45) = 5.628, p = .007]. Eta squared and Cohen's d were calculated to assess the strength of the relationship between the WMCI classifications and parent behavior and found a large effect size for this relationship (η^2 = .2, d = .83). Results are reported in Table 2.

Post-hoc comparisons using Tukey's HSD test found a significant difference between the Balanced (M = 30.63, SD = 6.195) and Disengaged (M = 21.00, SD = 6.753) groups. However, there were no significant differences found between the Balanced vs. Distorted and Distorted vs. Disengaged groups. This suggests that caregivers with Balanced representations of their children scored higher on the Parent Behavior construct than caregivers with Disengaged representations of their children. When grouped by Balanced vs. Nonbalanced groups, Balanced caregivers scored significantly higher than Nonbalanced caregivers on the Parent Behavior construct using an independent t-test (t = 2.87, p = .006). See Table 3.

Hypothesis 3: Children whose caregivers were categorized as Balanced on the WMCI will receive a higher score on the MIMBRS Child Behavior construct than children whose caregivers were categorized as Disengaged or Distorted.

A one-way ANOVA was used to assess if there were differences in the Child Behavior construct among the caregiver WMCI classifications (Balanced, Disengaged, and Distorted). Results indicated no significant differences were found between the three

groups [F (2,45) = .06, p = .942]. When grouped by Balanced vs. Nonbalanced, no

significant differences were found between the two groups for the Child Behavior

construct using an independent t-test (t = .347, p = .73). Results are listed above in Table

2 and 3, respectively.

Hypothesis 4: Children whose caregivers were categorized as Balanced on the WMCI will score significantly higher on the Facial Expression/Affect subscale of the MIMBRS Child Behavior construct than children whose caregivers were categorized as Disengaged and Distorted. Caregiver representations on the WMCI will not have a significant relationship with the Task Focus subscale of the MIMBRS Child Behavior construct.

An analysis using the Kruskal-Wallis test was conducted to assess if there was a

significant relationship between the caregiver WMCI classifications and the MIMBRS

Child Behavior subscales: Facial Expression/Affect and Task Focus. For the Facial

Expression/Affect subscale, results indicated no significant differences between the

WMCI groups [H (2) = .305, p = .859]. The Task Focus subscale was not statistically

significant, as hypothesized [H (2) = .413, p = .814]. Results are listed below in Table 4.

No significant differences were found between the Balanced and Nonbalanced groups for

both the Facial Expression/Affect subscale (z = -.47, p = .642) and the Task Focus

subscale (z = -.53, p = .597) using the Mann-Whitney U test. See Table 5 below.

Table 4. *Kruskal-Wallis for MIMBRS Child subscales by WMCI groups*

Child Subscales	χ^2	Df	p	η^2
Affect	.305	2	.859	.006
Task Focus	.413	2	.814	.008

Table 5. *Mann Whitney U Tests for MIMBRS subscales by Balanced vs. Nonbalanced*

MIMBRS subscales	Balanced mean rank	Nonbalanced mean rank	z	p	Effect size r
Child- Task Focus	23.72	25.81	-0.53	.597	0.08
Child-Affect	25.20	23.33	-0.47	.642	0.07
Dyad- Social	26.70	20.83	-1.45	.147	0.21

Hypothesis 5: Caregivers with a Distorted representation of their child based on the WMCI will receive a higher score on the Social Involvement/Engagement subscale of the MIMBRS Dyad Behavior construct than caregivers with Disengaged representations.

The Kruskal-Wallis test was conducted to assess differences between the WMCI categories and the Social Involvement subscale of the MIMBRS Dyad Behavior construct. The mean ranks of the three groups were in the direction predicted (Balanced $M = 26.7$, Distorted $M = 23.08$, and Disengaged $M = 16.33$); however, no significant differences were found between the three groups [$H(2) = 3.099$, $p = .212$]. Results are listed in Table 6 below. No significant differences were found between the Balanced and Nonbalanced groups for the Social Involvement subscale ($z = -1.45$, $p = .147$) using the Mann-Whitney U test. Results are listed above in Table 5.

Table 6. *Kruskal-Wallis for MIMBRS Dyad subscale by WMCI groups*

Dyad Subscale	χ^2	Df	p	η^2
Social Involvement	3.099	2	.212	.07

Potential Confounding Variables

Independent t-tests were conducted for the MIMBRS constructs to assess possible confounding variables for the study. Results showed no significant differences for child gender, parent gender, familial vs. non-related status, and therapy status (see Appendix A). However, adoptive dyads were found to have significantly higher scores than foster dyads for the MIMBRS Overall Summary Score ($t = -2.09$, $p = .044$), Parent Behavior ($t = -2.01$, $p = .05$), and Dyad Behavior ($t = -2.50$, $p = .016$) constructs. Similarly, parent gender was also found to be significantly different for both the Parent Behavior ($t = 2.10$, $p = .041$) and Dyad Behavior ($t = -2.39$, $p = .021$) constructs, where mothers scored higher than fathers. Results are listed below in Tables 7 and 8, respectively. It should be noted that there were only 6 fathers in this study, and 5 out of the 6 fathers were part of the foster group. Thus, it is unclear if the differences found for parent gender are related to the adoptive vs. foster results noted above.

Interactions of Confounding Variables

In order to assess possible interaction effects on the MIMBRS Parent Behaviors construct (single construct with statistically significant results), a 3 (WMCI classifications) x 2 (Adopted vs. Foster status) x 2 (Parent Gender) ANOVA was completed. Results indicated no significant main effects for the three independent variables: WMCI classifications [F (2,38) = 2.038, $p = .144$, $\eta^2 = .082$], adopted vs. foster [F (1,38) = 0.319, $p = .575$, $\eta^2 = .006$], and parent gender [F (1,38) = 0.153, $p = .698$, $\eta^2 = .003$]. Additionally, no significant interactions were found between any of the three variables on the MIMBRS Parent Behaviors construct: WMCI classifications X adoptive vs. foster status [F (2,38) = 0.931, $p = .403$, $\eta^2 = .038$], WMCI classifications X parent

gender $[F (2,38) = 2.304, p = .114, \eta^2 = .093]$, parent gender X adopted vs. foster status

$[F (1,38) = 0.429, p = .516, \eta^2 = .009]$.

Table 7. *Independent t-tests for MIMBRS Scores by Foster vs. Adoptive*

MIMBRS	Foster mean	Adoptive mean	t	p	Effect size d
Overall	57.10	66.37	-2.09	.044*	0.62
Parent	26.05	30.26	-2.01	.050*	0.58
Child	22.62	25.63	-1.55	.129	.46
Dyad	8.43	10.48	-2.50	.016*	.71

*Note. Means with * differ at the p<.05*

Table 8. *Independent t-tests for MIMBRS Scores by Parent Gender*

MIMBRS	Male	Female	t	p	Effect size d
Overall	52.50	63.71	-1.73	.091	0.50
Parent	22.67	29.24	-2.10	.041*	0.62
Child	22.83	24.52	-.593	.556	0.17
Dyad	7.00	9.95	-2.39	.021*	0.70

*Note. Means with * differ at the p<.05*

Power Analysis

A-priori and post-hoc power analyses were completed using G*Power 3.1.5 (Faul, Erdfelder, Lang, & Buchner, 2007). The initial analysis indicated that a sample size of 66 would be required to detect a large effect size ($f = .4$) for a one-way ANOVA with three groups, given a power of 0.8 and an alpha of .05. Difficulties arose in obtaining the

desired sample size after the sample was reduced due to technical problems and non-independence of data. Using the largest partial eta squared found in this study (0.2 for the MIMBRS Parent Behaviors construct), the post-hoc analysis revealed that this study received a power of .86, given an alpha of .05 and a sample size of 48. A sample size of 159 would be needed to detect a medium effect size ($f = .25$), given an alpha of .05 and a power of 0.8. According to these results, the current study lacked appropriate power for detecting small and medium effect sizes and prospective studies would benefit from procuring a larger sample.

CHAPTER FOUR

Discussion

The purpose of this study was to assess the relationship between caregiver

attachment representations and the quality of caregiver-child interactions in an adoptive

and foster sample. Caregiver representations (Balanced, Disengaged, and Distorted)

were expected to be related to the overall quality of attachment interactions, parent

attachment behaviors and child attachment behaviors. Child facial expression/affect

during the dyadic interactions was hypothesized to be related to caregiver representations,

while child task-oriented behaviors were expected to not be related to caregiver

representations. I hypothesized that caregivers with Disengaged representations of their

children would demonstrate less social involvement/engagement behaviors during the

interactions than caregivers with Distorted or Balanced representations of their children.

The study supported one of the five hypotheses. Caregiver representations corresponded

to parent behaviors during caregiver-child interactions. No relationship was found

between caregiver representations and overall attachment behaviors or child behaviors.

Caregiver representations were not related to child on-task behaviors or child affective

behaviors during the caregiver-child interactions. A relationship between caregiver

representations and dyadic social involvement during caregiver-child interactions was not

supported.

Findings/Existing Literature

The first hypothesis predicted a relationship between caregiver representations

and the overall quality of caregiver-child interaction. This hypothesis was not supported.

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For biological parent-infant dyads, Korja et. al (2010) found that parent representations using the WMCI were related to observed parent, infant, and dyadic interactions. This is the only other study found that examines all three components (parent, child, and dyadic behaviors) with the WMCI. The current study was not able to replicate those findings with the adoptive/foster sample, suggesting that caregiver representations are not related to overall quality of caregiver-child interactions for this population. Another explanation for this finding is the possibility that the sample size was inadequate to detect significant differences between the groups. When grouped by secure (Balanced) and insecure (Distorted and Disengaged) categories, no difference was found between the groups but the results did approach significance.

For the second hypothesis, caregiver representations were found to correspond with the quality of caregiver attachment behaviors during the caregiver-child interactions. Caregivers with secure (Balanced) representations of their children displayed higher quality attachment behaviors than caregivers with insecure (Disengaged and Distorted) representations. Additionally, caregivers with Balanced representations of their children were observed to demonstrate higher quality attachment behaviors than caregivers with Disengaged representations. The current findings with an adoptive/foster group mirror other research that has demonstrated a relationship between maternal representations and maternal responsivity during interactions with non-clinical populations (Cohn et al., 1992; Crandell et al., 1997; Crowell & Feldman, 1988; Slade et al., 1999) high-risk populations (Sokolowski et al., 2007), pre-term mother-infant dyads (Korja et al., 2010) and mother-child dyads for children with behavioral problems (Crowell & Feldman, 1988). As mentioned earlier, a medium to large effect size effect size ($d =.72$) was found

for the relationship between parent attachment representations and parental responsiveness in a meta-analysis (van IJzendoorn, 1995). These findings correspond with the large effect size ($d =.83$) obtained from our adoptive and foster sample. The current results with an adoptive and foster population parallel research with biological dyads, which underscores the important role that caregiver representations play in guiding parenting behavior.

One interesting finding noted was that there were no significant differences for parenting behavior found between caregivers with Balanced representations and caregivers with Distorted representations of their children. Similar results have been demonstrated for biological mothers with dismissing representations (similar to Disengaged representations) who scored worst during interactions when compared to the Preoccupied (Distorted) and Secure (Balanced) groups of parents (Crowell, et al. 1991; Sokolowski et al., 2007). However, other results have been mixed as biological mothers with Distorted representations have also been found to have the strongest relationship with "non-optimal" interactions (Korja et al., 2010; Schecter et al., 2008). Our results suggest that caregivers with Disengaged representations may have acted more noticeably distant and detached when compared to caregivers with Distorted representations. Sokolowski et al. (2007) suggest that caregivers with Distorted representations may be "just as involved" or "over-involved" with their children during interactions, which may appear to be less negative and harmful during the interactions, leading to similar results as caregivers with Balanced representations. Future research with larger study samples may be better able to elucidate the differences found between the caregiver representation groups. To date, researchers have focused more heavily on the secure/insecure split for

representations, which has offered limited information about the differences between attachment representation groups.

In terms of child attachment behaviors, no relationship was found between caregiver representations and observed child attachment behaviors during the caregiver-child interactions. Previous results with biological dyads are inconclusive in this area. Similar to our study, Crowell et al. (1991) found no connection between maternal representations and child behaviors during mother-child interactions. They suggest that children with mothers who have dismissing (Disengaged) representations tend to "minimize stress" during interactions and appear to have fewer problems than they would in other settings (Crowell et al., 1991). They also noted that children of preoccupied (Distorted) mothers may have learned "compensatory behaviors" in response to a "parentified" or "role-reversed" relationship with their caregivers (Crowell et al., 1991) and these behaviors may be difficult to distinguish from the behaviors of other children with secure caregivers. Alternatively, other studies have demonstrated a relationship between parent representations and child behavior during dyadic interactions (Cohn et al., 1992; Crandell et al., 1997; Crowell & Feldman, 1988).

For adoptive and foster dyads, there is limited research on the relationship between caregiver's attachment representations and children's behavior during caregiver-child interactions. A recent study by Niemann and Weiss (2012) found no relationship between caregiver representations and the quality of child attachment behavior for adoptive parent-child dyads; however, their results suggested that both the number of pre-adoptive placements and the child's stress level were significant predictors of the child's attachment behavior and status. Their findings highlight the existence of other mediating

factors influencing adoptive attachment status beyond caregiver representations. Future research is needed in order to have a better understanding of how adopted/foster children's behavior relates to caregiver representations.

For the fourth hypothesis, child affective behaviors were thought to be related to caregiver representations. Child task behaviors were hypothesized to not be related to caregiver representations. Child affective behaviors and child task behaviors were found to not be related to caregiver representations. Contrary to these findings, other studies with biological maternal-child dyads have found an association between child affect variables and caregiver representations and a limited relationship with child task behaviors and caregiver representations (Crowell & Feldman, 1988; Cohn et al., 1992). In this study, there was no relationship between overall child behaviors and caregiver representations, which may have impacted the current study's ability to distinguish between these two different types of behaviors. Future research that examines different child attachment behaviors may be beneficial in distinguishing which behaviors are most associated with caregiver representations.

For the fifth hypothesis, dyadic social involvement behaviors did not correspond to caregiver representations as predicted. Caregivers with Disengaged representations of their children scored the lowest in dyadic social engagement; however, it was found to not be statistically different than the caregivers with Balanced or Distorted representations. Contrary to these results, Sokowloski et al. (2007) found that disengaged biological mothers were more withdrawn and used less encouragement than both the Balanced and Distorted maternal groups in maternal-infant interactions. Their finding aligns with Mary Ainsworth's description of dismissing mothers as cool and distant while

interacting with their infant, particularly during stressful situations (Ainsworth et al.,1978). The small sample utilized in this study may have been limited in distinguishing differences between the caregiver representation groups. Further, the MIMBRS Dyad Social Involvement subscale may have been too limited in capturing the level of engagement between the dyads due to its singular question. Additional research may be helpful in developing a scale that more fully captures this domain.

Post-hoc analysis revealed an interesting difference between the adoptive and foster subgroups within the main sample that was not initially hypothesized. The adoptive dyads differed from the foster dyads on the MIMBRS parent, overall, and dyad domains and demonstrated different percentage breakdowns for the WMCI classifications. The foster group scored significantly lower than the adopted group on the MIMBRS parent, overall, and dyad domains and had 18% fewer caregivers who were classified as Balanced. Despite the differences, the foster group's WMCI classifications were similar to classifications found in a non-clinical population (Vreeswijk et al., 2012). The adopted group demonstrated a higher percentage of Balanced representations and fewer Nonbalanced representations when compared to a non-clinical population (Vreeswijk et al., 2012). In terms of foster parent representations, Dozier et al. (2001) found no differences between foster parent representations and other non-clinical adults, which is similar to the findings in this study. For adoptive parents, Steele et al. (2003) found higher percentages of Balanced representations for the adoptive mothers in their sample, which is also similar to the current findings. Possible explanations for the differences between adoptive and foster caregiver representations and attachment interaction scores are that adoptive parents tend to be screened more strictly than foster

parents (Dozier & Rutter, 2008) and tend to have lower rates of psychopathology as compared to the general population (Rutter, 2006). Other mediating factors may be responsible in the differences between the two groups; however, limited research is available that compares foster to adoptive groups. Future research may offer clearer relationships between adoptive or foster status and how those differences impact attachment security.

Another interesting finding noted was a relationship between caregiver gender and the MIMBRS parent and dyad scores. Adoptive and foster fathers in the study displayed significantly lower quality parent attachment and dyadic behaviors than adoptive and foster mothers. Sixty-seven percent of the fathers in the study were found to have Nonbalanced representations of their children, while 67% of mothers in the study were found to have Balanced representations of their children. Of the six fathers that were included in this study, five of the six fathers were in the foster group and it is unknown if the differences found are related to foster/adoptive status rather than differences due to gender or vice-versa, given the previous findings. In general, there is limited research on father-child biological dyads as maternal attachments have been a primary area of research. A meta-analysis by van Ijzendoorn (1995) found that mother's attachment representations were more strongly related to the mother-child attachment relationship than father's attachment representations were related to the father-child attachment relationship. However, a recent longitudinal study by McFarland-Piazza, Hazen, Jacobvitz, and Boyd-Soisson (2012) found similar patterns for mothers and fathers in terms of representations and quality of caregiving. Fathers' attachment representations have been found to be similar to the distribution of representations for

mothers (van Ijzendoorn & Bakersman-Kranenberg, 1996); however, this was not the case for this study. Van Ijzendoorn (1995) suggests that attachment assessments often have less validation with fathers and may not capture the important aspects of the father-child relationship. Overall, the current study included a very small sample of fathers and cannot provide predictions about gender differences for attachment. More research is needed to better assess the father-child relationship, particularly as it relates to adoptive/foster father-child dyads.

Further examination of the two subgroups: foster/adoptive status and caregiver gender were included in our analysis and no interactions were found for the relationship between caregiver representations and parent behavior (the only construct found to be significant). While these subgroups varied significantly from each other, the differences appeared to not affect our overall results. Future studies may benefit from a more homogenous sample, which will be explored later.

Implications

Similar to biological parent-child dyads, our study suggests that adoptive and foster caregiver representations correspond to caregiver attachment behaviors during caregiver-child interactions. More importantly, this finding helps to inform us how caregiver representations may impact parenting behaviors for adoptive and foster caregivers. In terms of therapy, this has implications for intervention efforts addressing caregiver representations and how these representations are played out in the complex attachment process. Stern-Bruschweiler and Stern's (1989) theoretical model suggests that changing either the representations or changing the dyadic interactions can be helpful to improve the attachment relationship during therapy.

While caregiver representations may guide parenting behaviors for adoptive and foster-to-adopt populations, our study did not find a relationship between caregiver representations and child attachment behaviors or overall attachment status. These results may indicate the possibility that other factors such as number of pre-adoptive placements and level of stress for adoptive children may play a more important role in child attachment behavior and status for this particular population (Niemann & Weiss (2012).

Limitations

Results of the a-priori and post-hoc power analysis revealed that the small sample size was inadequate for detecting small to medium effect sizes, restricting the possible findings for the study. Prospective studies may benefit from including one child per family in the study and increasing the overall sample size in order to improve the study's power. This sample is only representative of the Central Texas population and was not ethnically diverse, as there were fewer minority participants than expected given the general population. Participants were recruited from various sources; however, a large portion was recruited from the Texas Department of Family and Protective Services (DFPS). This agency requested assessments to complete their foster-to-adopt process where children had been removed from their home due to experiences of abuse and/or neglect. The DFPS participants may have been more conscious of their performance on the assessments as the reports would be read by DFPS workers, possibly biasing the results.

Future projects may benefit from more homogenous groupings, which would eliminate differences between familial vs. non-familial adoption, adoption vs. foster

status, and parent gender. The current study allowed families to choose which parent to

participate in the study and what time of day they were available to participate, possibly

biasing the results. Future studies may benefit from controlling the order the assessments

are administered and the time of day the assessments are given.

Additionally, the MIMBRS is an observational assessment that is conducted in a

laboratory setting, which may only capture a small snapshot of the everyday dyadic

interactions of our participants. It should be noted that the participants may have been

pulled to present themselves more favorably due to the manner in which they were being

evaluated. The MIMBRS is also in its early stages of being validated and more research

is needed to continue to determine the validity and reliability of this assessment and

scoring system.

Areas for Future Research

For adoptive and foster dyads, concordance between caregiver representations and

parenting behavior was noted in this study. Links between caregiver representations and

overall attachment, child attachment behaviors, and social engagement behaviors were

not found. Considering the small sample size and limitations noted in this study, it would

be helpful to replicate this study with a much larger sample in order to better evaluate the

relationships explored between the measurements of attachment. In general, there is very

limited research on caregiver representations for adoptive and foster care populations,

particularly comparing how those relationships relate to biological parent-child dyads. It

would be interesting to explore specific differences of caregiver and child behaviors and

representations between biological and non-biological populations in order to gain a

fuller understanding of possible mediating factors that are specific to the adoptive/foster

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population. Given that differences were found between the adoptive and foster subgroups and parent gender, it would be important to explore possible variations in attaching for these subgroups as they notably bring their own special circumstances to the attachment relationship.

In this study, caregiver representations only accounted for twenty percent of parent attachment behaviors during the interactions. More research is needed to determine what other factors are important for the transmission of attachment representations in caregiving relationships, particularly for adoptive/foster dyads whom often bring extra challenges for attachment. The small sample in this study was limited in fully assessing what specific parent behaviors are being transmitted to their children beyond parental sensitivity (i.e. ability to structure or challenge the child), and it would be interesting if future studies would identify other specific parenting behaviors that are important for the attachment process.

Conclusion

The primary goal of this study was to improve our understanding of the relationship between caregiver representations and attachment behaviors for adoptive and foster families. Given the association found between caregiver representations and caregiving behavior, our results emphasize the importance of clinical interventions focused on shaping the caregiver's role in the caregiver- child relationship. Our research also suggests that variability in attachment exists between adoptive families and foster families, and future research in this area will likely assist adoptive and foster agencies in creating positive and lasting family placements.

APPENDICES

APPENDIX A

Potential Confounding Variables

Independent t-tests for MIMBRS Scores by Child Gender, Relative Status, and Therapy

MIMBRS Construct	*Overall Score*	*Parent Behavior*	*Child Behavior*	*Dyad*
Child Gender	$t = -.374$	$t = .093$	$t = -1.172$	$t = .078$
	$p = .712$	$p = .926$	$p = .247$	$p = .938$
Relative	$t = -.931$	$t = -1.195$	$t = -.448$	$t = -.799$
	$p = .357$	$p = .238$	$p = .656$	$p = .428$
Therapy	$t = .320$	$t = .575$	$t = -.101$	$t = .423$
	$p = .75$	$p = .568$	$p = .920$	$p = .674$

APPENDIX B

Certification of Informed Consent

This form asks for your consent to participate in a psychological experiment. You will be asked to complete one interview, participate in a series of play tasks with your child, and fill out a demographic questionnaire, the Traumatic Events Screening Inventory (TESI-PRR, and the Behavioral Assessment System for Children, second edition (BASC-2).The questionnaires are about you and your child. Your child will be asked to make up narrative stories in response to a prompt, which consists of the beginning of a simple story about familiar events for most children. This experiment consists of one or two sessions, depending on your preference for one 3 hour session or two 90 minute sessions. The interview, the play tasks with your child and your child's story telling will be videotaped. These videotapes will be stored in a locked room with limited access and will be destroyed, along with all questionnaires and assessments within five years of signing this consent. This experiment provides minimal risk, and it is unlikely that there are any physical risks involved in the study given that subjects will be seated in order to answer questions or perform simple play tasks. However, there is the rare possibility of psychological distress as a result of the emotional aspects to the questions being asked in the interviews and questionnaires. You will be asked to think about and articulate your feelings about your child and your relationship, which may be distressing for some individuals. However, the interviews and questionnaires have been used in many studies and the potential risks involved have not been found to have lasting negative consequences. There is also a rare possibility that your child will experience psychological distress while telling stories. Again, the story task has been used in many studies and children your child's age typically find the stories interesting and fun to do.

Your participation is fully voluntary and if at any time you choose not to participate you will be able to end your participation without any penalty or loss of benefits to which you are otherwise entitled. By participating you will not only gain experience at participating in a scientific experiment, but you will also receive written feedback in the form of a report detailing the strengths within your relationship with your child. The report may be reviewed with you by one of the administrators in person. In the event that you are unable or unwilling to return to Baylor's campus to receive written feedback, it will be possible to receive feedback on the phone and be mailed a copy of the report. This window of observation on the relationship between child and caregiver may also reveal challenges, in addition to strengths, which may result in suggestions that may be used to enhance the relationship. You may also receive referrals to appropriate mental health practitioners should you request further information about mental health services.

You will also receive payment for mileage in the form of gas money, depending on how many times you traveled to Baylor to participate ($25 for one session, $50 for two sessions).

The principal investigators of this experiment is Jenny Bickell, a fifth year graduate student and Faith Perez McGowan, a fourth year graduate student, both in the department of Psychology and Neuroscience in the Clinical Psychology Program at Baylor University.   Both have completed other experiments similar to this one, and have received extensive training in the interviews and interaction assessment that will be administered.   You may reach Jenny at XXX-XXX-XXXX or by email at Jenny_Bickell@Baylor.edu and Faith at XXX-XXX-XXXX or by email at Faith_Perez@baylor.edu.

The faculty advisor of this experiment is Helen E.   Benedict, PhD, a professor in the Psychology and Neuroscience department.   She has published extensively as well as delivered several scientific presentations regarding child development and attachment. She has conducted as well as supervised many experiments in this field.   Dr.   Benedict can be reached at XXX-XXX-XXXX.

If you have any questions regarding your rights as a subject, or you have other questions regarding your participation as a subject, contact Baylor University Committee for Protection of Human Subjects in Research, Dr. Michael Sherr, Chair, Baylor University, One Bear Place # 97320 Waco, TX 76798-7320.   Dr. Sherr's phone number is (254) 710-4483.

You may desire to share this information with your minor child.   While only you as a parent or legal guardian are capable under the law to consent to your child's participation in this study, it is preferable that your child be made aware (consistent with your child's age and level of understanding) that they are part of a study.   If you discern that your child is not comfortable with participating in the study, you may consider (as a parent or legal guardian) not consenting to your child's participation in the study.

I have read and understood this form, am aware of my rights as a participant, and have agreed for myself and my child to participate in this experiment.   By signing this I acknowledge that I am 18 years of age or older.   Further, by signing this I acknowledge that I have been given a copy of this consent form for my own records.

_____

Printed name and signature

_____   _____

Date   Name and birth date of your child

Marschak Interaction Method Behavior Rating System

(MIMBRS)

<u>Task #1: Mirror (Adult shows child him/herself in mirror)</u>

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                     1   2   3   4   5

<u>Task #2: Band-Aid (Adult asks child where he/she wants band-aid put on them)</u>

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement
Passive Behavior

***Balance of Controlling (Initiating/

Notes:

1   2   3   4   5

Task #3: Hopping (Adult has child show that he/she can hop)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement
Passive Behavior

***Balance of Controlling (Initiating/

Notes:

1   2   3   4   5

Task #4: Hampered Movement (Adult and child join legs and walk)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement
Passive Behavior

***Balance of Controlling (Initiating/

Notes:

1   2   3   4   5

Task #5: Teach (Adult teaches child something he/she doesn't know)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement
Passive Behavior

***Balance of Controlling (Initiating/

Notes:

1   2   3   4   5

Task #6: Leaves the room (Adult leaves the room for 1 minute)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                                                 1   2   3   4   5

Task #7: Baby Memories (Adult tells child a story of when he/she was a baby)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                                                 1   2   3   4   5

Task #8: Unattainable Candy (Adult gives jar to child and tells him/her, "If you can open it, you may have some")

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                                                    1   2   3   4   5

Task #9: Singing (Adult and child sing a song together)

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                                                    1   2   3   4   5

Task #10: Mood Pictures (Adult shows cards to child and says, "Tell me about that boy/girl")

Parent and Child:

***Facial Expression/Appropriateness of Affect   ***Quality of Vocalization

***Proximity/Body Orientation
***Contingent/reciprocal/mutual/social

***Gaze Fixation/Aversion   ***Tendency to Remain Task-Focused

***Tendency to Offer/Give Assistance   ***Playfulness

Dyad:

***Social Involvement   ***Balance of Controlling (Initiating/
Passive Behavior

Notes:

                                    1   2   3   4   5

OVERALL QUALITY OF INTERACTION

Notes:

                                    1   2   3   4   5

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Behavioral Ratings for the Overall MIMBRS: Operational Definitions for Rating Scale

Note: For all behaviors, a rating of **1** is least optimal/positive, while a rating of **5** is most optimal/positive.

Use the following definitions to assign a 1, 2, 3, 4, or 5 for each behavior, for each member of the interaction and for the dyad as a whole.   Reliability is achieved by comparing the ratings of pairs of observers.   Practice the rating system by having two person's rate interactions, and then discuss until you arrive at agreement on the correct ratings.   Thereafter, attempt to score additional sets of dyads independently (without discussion) to see if you are in agreement.   If you are not agreeing, you must go back to discussion training.   It is often helpful to first think of each behavior in terms of "Is a subject on the lower side (1, 2) or on the high/optimal side (4,5) of the scale" and first see if you can agree on that.   You may at first count scores that are within 1 point of the other rater as "agreements".   Note also that some behaviors are easier to agree about with another rater (such as gaze), while other behaviors such as playfulness or balance of control require more time and discussion to reach agreement.   With continued practice you can achieve excellent reliability on the scale such that you and another rater will agree more than 75% of the time on scoring.

Parent Behaviors

I. Facial Expression/Affect

1.   Negative facial expression/negative (flat, frowning, tense) or inappropriate affect most of the time, with minimal positive expression (smiling, laughing).   Inappropriate affect may be shown by tense smile or mocking laughter.

 2.   Negative facial expression/affect over half of the time, with minimal positive expression.

 3.   Approximately equal amounts of both negative and positive expression.

 4.   Positive facial expression/affect over half of the time, with minimal negative expression.

5. Positive facial expression/affect the majority of the time, with minimal negative expression.

II. Quality of Vocalization

1. Speaks in negative (flat, demanding, harsh, criticizing) manner the majority of the time, with minimal positive (encouraging, comforting, praising) vocalization.

2. Speaks in negative manner over half of the time, with minimal positive vocalization.

3. Speaks in approximately equal amounts of positive and negative vocalizations.

4. Speaks in positive manner over half of the time, with minimal negative vocalizations.

5. Speaks in positive manner the majority of the time, minimal negative vocalization.

III. Proximity/Body Orientation

1. Positioned far from/turned (oriented) away from child the majority of the time, rarely moves towards child.

2. Positioned from/turned away from child over half of the time, some movement toward child.

3. Positioned towards and away from child for equal amount of time.

4. Close to/oriented towards child over half of the time, not away from/far from child over half of the time.

5. Positioned close to/oriented towards child the majority of the time, rarely moves away from child.

IV. Contingent/Responsive Behavior

1. Almost never responds to child's affective cues (speech/actions) or requests for help.

2. Responds to child's cues or requests for help less than half of the time.

3. Responds to child's cues or requests for help for half of the time.

4. Responds to child's cues or requests for help over half of the time.

5. Almost always responds to child's cues or requests for help.

V. Gaze Fixation/Aversion

1. Almost never looks at child or makes eye contact with child; usually averts gaze.

2. Looks at child less than half of the time, tends to look elsewhere.

3. Looks at child half of the time.   Looks elsewhere half of the time.

4. Looks at child more than half of the time, occasionally looks elsewhere.

5. Almost always looks at child or makes eye contact with child; rarely averts gaze.

VI. Tendency to Remain Task-Focused

1. Remains rigidly focused on the task most of the time, not allowing child flexibility (seems more focused on the task than on the child), *or* fails to use firm control to keep child on task.

2. Remains task focused the majority of the time, but allows child some flexibility; may allow child too much flexibility in straying from the task.

3. Maintains appropriate balance of task focus with child focus about half the time.

4. Provides some encouragement for child to remain appropriately task-focused; may still be overly harsh/rigid *or* lenient in demanding task focus from the child.

5. Appropriately encourages child to remain task-focused through gentle firm control, and is not overly rigid in demanding task completion; maintains appropriate balance most of the time.

VII. Tendency to Offer/Give Help to Child

1. Almost never offers child help/guidance (i.e.   demonstrates behaviors, offers verbal support) in task or offers too much help by completing task for child for majority of the time..

2. Offers help/guidance to child less than half of the time when needed/requested; but not enough, less than half of the time.   Or may help inappropriately/too much for more than half of the time.

3. Offers help/guidance to child half of the time when needed/requested.   Or may help inappropriately/too much half of the time.

4. Offers help/guidance to child over half of the time when needed/requested.   Or may occasionally help inappropriately/too much.

5. Offers appropriate help/guidance to child majority of the time without giving inappropriate/too much help.

VIII.   Playfulness

1. Almost never creates or engages in appropriate (temporally or developmentally) playful behavior with the child.   For example, is not cheerful, interested, or willing to participate in playful behavior, verbal interactions, or games.

2. Engages in or initiates appropriate playful behavior with the child less than half the time.   For example, seems inhibited, embarrassed, or unwilling to fully become engaged in playful behavior.

3. Approximately equal amounts of appropriately playful and not playful behavior. Difficult to assign either positive or negative side of the scale.

4. Creates or engages in appropriately playful behavior frequently, more than half the time.   For example, is playful, cheerful, and willing to participate.

5. Creates or engages in appropriately playful behavior for majority of the time.   For example, is willing to act "childish" and is not embarrassed about play.   Demonstrates sincere and real efforts to play with child on their level.

Child Behaviors

I.   Facial Expression/Affect

1. Negative facial expression/affect (flat, frowning, tense, crying) the majority of the time, with minimal positive expression (smiling, laughing).

2. Negative facial expression/affect over half of the time, with minimal positive expression.

3. Approximately equal amounts of both negative and positive expression.

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4. Positive facial expression/affect over half of the time, with minimal negative expression.

5. Positive facial expression/affect the majority of the time, with minimal negative expression.

II. Quality of Vocalization

1. Speaks in negative (flat, upset, whining) manner the majority of the time, with minimal positive (excited, happy, laughing) vocalization.

2. Speaks in negative manner over half of the time, with minimal positive vocalization.

3. Speaks in approximately equal amounts of positive and negative vocalizations.

4. Speaks in positive manner over half of the time, with minimal negative vocalizations.

5. Speaks in positive manner the majority of the time, with minimal negative vocalization.

III. Proximity/Body Orientation

1. Positioned far from/turned (oriented) away from parent the majority of the time, rarely moves towards parent.

2. Positioned from/turned away from parent over half of the time, some movements towards parent.

3. Positioned towards and away from parent for equal amount of time.

4. Close to/oriented towards parent over half of the time, not away from/far from parent over half of the time.

5. Positioned close to/oriented towards parent the majority of the time, rarely moves away from parent.

IV. Contingent/Responsive Behavior

1. Almost never responds to parent's affective cues (speech/behavior) or requests.

2. Responds to parent's cues or requests less than half of the time.

3. Responds to parent's cues or requests for half of the time.

4. Responds to parent's cues or requests over half of the time.

5. Almost always responds to parent's cues or requests.

V. Gaze Fixation/Aversion

1. Almost never looks at parent or makes eye contact with parent; usually looks elsewhere, averts gaze.

2. Looks at parent less than half of the time, tends to look elsewhere.

3. Looks at parent half of the time. Looks elsewhere half of the time.

4. Looks at parent more than half of the time, occasionally looks elsewhere.

5. Almost always looks at parent or makes eye contact with parent, hardly ever averts gaze.

VI. Task Focus/On-Task Attentiveness

1. Off task/not attentive to task majority of time.

2. Off task/not attentive over half the time. On task/attentive minimal amount of the time.

3. Off task/non attentive half of the and on task/attentive half of the time.

4. On task/attentive over half of the time. Off task/nonattentive minimal amount of the time.
5. On task/attentive majority of the time.

VII. Tendency to Ask For/Accept Help from Parent

1. Does not accept parental help/guidance majority of the time (uncooperative, fussy).

2. Does not accept parental help/guidance over half of the time. Accepts minimal amount of help/guidance.

3. Does not accept parental help/guidance half of the time. Accepts help/guidance half of the time.

4. Accepts parental help/guidance over half of the time.   Does not accept minimal amount of help/guidance.

5. Accepts parental help/guidance majority of the time (cooperative, willing).

Dyad Behaviors

I. Degree of Social Involvement/Social Interaction during Task

1. Parent and child are not socially involved/engaged with one another for the majority of the time.

2. Parent and child are not socially involved/engaged with one another for over half of the time.

3. Parent and child are not socially involved/engaged with one another for half of the time and uninvolved/unengaged for half of the time.

4. Parent and child are socially involved/engaged over half of the time.

5. Parent and child are socially involved/engaged majority of the time.

II. Balance of Controlling (Initiating)/Passive Behavior

1. Either parent or child dominates interaction (always initiates, controls tasks) the majority of the time.   Other member is mostly passive.

2. Either parent or child dominates interaction more than half of the time.   Other member may initiate some activities, but is passive.

3. Either parent or child dominates interaction half of the time.   Other member attempts to initiate some more activities, but is passive.

4. Either parent or child dominates interaction less than half of the time.   Other member initiates activities and is less passive.

5. Both parent and child initiate and control some tasks.   There is an optimal balance of controlling and passive behaviors.   Neither member is dominant or passive.

III.   Total Interaction Quality Score

1.   Least optimal interaction.

2.   Worse than average interaction.

3.   Average interaction.

4.   Better than average interaction.

5.   Most optimal interaction.

APPENDIX E

Marschak Interaction Method Behavior Rating System
(MIMBRS: revised 10/20/98)

Subject # _____Date_____

Age_____ Child Gender_____ Parent (M,F,Caregiver)_____

Tasks/Domains:

PARENT

1. Facial Expression / Appropriateness of Affect	1	2	3	4	5
2. Quality of Vocalization	1	2	3	4	5
3. Proximity / Body Orientation	1	2	3	4	5
4. Contingent/reciprocal/mutual/social	1	2	3	4	5
5. Gaze Fixation / Aversion	1	2	3	4	5
6. Tendency to Remain Task-Focused	1	2	3	4	5
7. Tendency to Offer/Give Assistance	1	2	3	4	5
8. Playfulness	1	2	3	4	5

CHILD

1. Facial Expression/Affect	1	2	3	4	5
2. Quality of Vocalization	1	2	3	4	5
3. Proximity / Body Orientation	1	2	3	4	5
4. Contingent/Responsive Behavior	1	2	3	4	5
5. Gaze Fixation / Aversion	1	2	3	4	5
6. Task Focus/On-Task Attentiveness	1	2	3	4	5
7. Tendency to Ask For/Accept Guidance	1	2	3	4	5

DYAD

1. Social Involvement	1	2	3	4	5
2. Balance of Control	1	2	3	4	5

(Initiating vs. Passive Behavior)

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OVERALL QUALITY OF INTERACTION	1 Less Optimal	2	3	4	5 More Optimal

Demographic Questionnaire

ASSESSMENT OF ATTACHMENT

Caregiver's Name: _____

Child Name: _____

Child DOB: _____   Child Age: _____   Child Grade: _____

Child's race/ethnicity: _____

Special ED? Y / N   ED? Y / N   OHI? Y / N

Number of Months Child in Home: _____

Caregiver's Relationship to Child: _____

In Therapy? Y / N   Number of Months In Therapy:_____

Type of Therapy: _____

Diagnoses:

Psychological: _____

Medical: _____

Participating Siblings: _____

Caregiver Address:
_____

_____

Agency/Referral Source: _____

REFERENCES

Ainsworth, M. D. (1985). Patterns of attachment. *Clinical Psychologist, 38*(2), 27-29.

Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development, 41*(1), 49-67.

Ainsworth, M. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Oxford: Lawrence Erlbaum.

Behrens, K. Y., Hesse, E., & Main, M. (2007). Mothers' attachment status as determined by the adult attachment interview predicts their 6-year-olds' reunion responses: A study conducted in Japan. *Developmental Psychology, 43*(6), 1553-1567.

Benoit, D., & Parker, K. C. H. (1994). Stability and transmission of attachment across three generations. *Child Development, 65*(5), 1444-1456.

Benoit, D., Zeanah, C. H., Parker, K. C. H., Nicholson, E., & Coolbear, J. (1997). 'Working model of the child interview': Infant clinical status related to maternal perceptions. *Infant Mental Health Journal, 18*(1), 107-121.

Bickell, J. A. (2012). *Levels of attachment security between foster and adoptive dyads using the MIMBRS observational method*. Unpublished doctoral dissertation, Baylor University, Waco, TX.

Bojanowski, J., & Ammen, S. (2011). Discriminating between pre- versus post-theraplay treatment Marschak Interaction Methods using the Marschak Interaction Method Rating System. *International Journal of Play Therapy*, *20*(1), 1-11.

Bowlby J. (1969). *Attachment and loss*: *Vol. 1. Attachment.* New York: Basic Books.

Bowlby J. (1973). *Attachment and loss: Vol. 2. Separation*: *Anxiety and anger.* New York: Basic Books.

Bowlby J. (1980). *Attachment and loss: Vol. 3*. *Loss: Sadness and depression*. New York: Basic Books.

Bowlby J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.

Brand, A. E., & Brinich, P. M. (1999). Behavior problems and mental health contacts in adopted, foster, and nonadopted children. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 40*(8), 1221.

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development, 50*, 3-35.

Brodzinsky, D. M., Radice, C., Huffman, L., & Merkler, K. (1987). Prevalence of clinically significant symptomatology in a nonclinical sample of adopted and nonadopted children. *Journal of Clinical Child Psychology, 16*(4), 350.

Brown, L. S., & Wright, J. (2003). The relationship between attachment strategies and psychopathology in adolescence. *Psychology & Psychotherapy: Theory, Research & Practice, 76*(4), 351-367.

Cassidy, J., & Shaver, P. R. (1999). In Shaver P. R. (Ed.), *Handbook of attachment: Theory, research, and clinical applications*. New York, NY US: Guilford Press.

Cohn, D. A., Cowan, P. A., Cowan, C. P., & Pearson, J. (1992). Mothers' and fathers' working models of childhood attachment relationships, parenting styles, and child behavior. *Development and Psychopathology, 4*(3), 417-431.

Cole, S. A. (2005). Infants in foster care: Relational and environmental factors affecting attachment. *Journal of Reproductive & Infant Psychology, 23*(1), 43-61.

Crandell, L. E., Fitzgerald, H.E. & Whipple, E. E. (1997). Dyadic synchrony in parent–child interactions: A link with maternal representations of attachment relationships. *Infant Mental Health Journal, 18*(3), 247-264.

Crittenden, P. M. (1983). The effect of mandatory protective daycare on mutual attachment in maltreating mother–infant dyads. *Child Abuse & Neglect, 7*(3), 297-300.

Crittenden, P. M., Claussen, A. H., & Kozlowska, K. (2007). Choosing a valid assessment of attachment for clinical use: A comparative study. *Australian & New Zealand Journal of Family Therapy, 28*(2), 78-87.

Crowell, J. A., & Feldman, S. (1988). Mothers' internal models of relationships and children's behavioral and developmental status: A study of mother-child interaction. *Child Development, 59*(5), 1273.

Crowell, J. A., O'Connor, E., Wollmers, G., Sprafkin, J., & Rao, U. (1991). Mothers' conceptualizations of parent-child relationships: Relation to mother-child interaction and child behavior problems. *Development and Psychopathology, 3*(4), 431-444.

Dalen, M. (2007). Educational achievement among international adoptees. *Anuario De Psicología, 38*(2), 199-208.

DiPasquale, L. (2000). The Marschak interaction method. In E. Munns (Ed.), *Theraplay* (pp. 27-51). Northvale, NJ: Aronson.

Dozier, M., & Rutter, M. (2008). Challenges to the development of attachment relationships faced by young children in foster and adoptive care. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications (2nd ed.).* (pp. 698-717). New York: Guilford Press.

Dozier, M., Stovall, K. C., Albus, K. E., & Bates, B. (2001). Attachment for infants in foster care: The role of caregiver state of mind. *Child Development, 72*(5), 1467-1477.

Egeland, B., & Farber, E. A. (1984). Infant-mother attachment: Factors related to its development and changes over time. *Child Development, 55*(3), 753-771.

Egeland, B., & Sroufe, L. A. (1981). Attachment and early maltreatment. *Child Development, 52*(1), 44-52.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Field, T. (1987). Interaction and attachment in normal and atypical infants. *Journal of Consulting and Clinical Psychology, 55*(6), 853-859.

Fonagy, P., Steele, H., & Steele, M.(1991). Maternal representations of attachment during pregnancy predict the organization of infant–mother attachment at one year of age. *Child Development, 62*, 891–905.

Fonagy, P., Steele, M., Moran, G., Steele, H., & Higgitt, A. (1993). Measuring the ghost in the nursery: An empirical study of the relation between parents' mental representations of childhood experiences and their infants' security of attachment. *Journal of the American Psychoanalytic Association, 41*(4), 957-989.

George, C, Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview.* Unpublished manuscript. University of California at Berkeley, Department of Psychology.

George, C., & Solomon, J. (1989). Internal working models of caregiving and security of attachment at age six. *Infant Mental Health Journal, 10*(3), 222-237.

Hautamäki, A., Hautamäki, L., Neuvonen, L., & Maliniemi-Piispanen, S. (2010). Transmission of attachment across three generations: Continuity and reversal. *Clinical Child Psychology and Psychiatry, 15*(3), 347-354.

Hodges, J., Steele, M., Hillman, S., Henderson, K., & Kaniuk, J. (2005). Change and continuity in mental representations of attachment after adoption. In J. Palacios (Ed.), *Psychological issues in adoption: Research and practice.* (pp. 93-116). Westport, CT: Praeger Publishers/Greenwood Publishing Group.

Horwitz, S., Balestracci, K. & Simms, M. (2001). Foster care placement improves children's functioning, *Archives of Pediatrics and Adolescent Medicine 155*, (pp. 1255–1260).

Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In P. R. Shaver (Ed.), *Handbook of attachment: Theory, research, and clinical applications.* (pp. 671-687). New York: Guilford Press.

Howes, C., & Segal, J. (1993). Children's relationships with alternative caregivers: The special case of maltreated children removed from their homes. *Journal of Applied Developmental Psychology, 14*(1), 71-81.

Jernberg, Ann. (1979). *Theraplay.* San Francisco: Jossey-Bass.

Jernberg, Ann (1991). Assessing parent-child interactions with the Marschak Interaction Method. In Schaeffer, Gitlin and Sandgrun (Eds.), *Play Diagnosis and Assessment* (pp. 493-511). NY: Wiley.

Jernberg, A. M., & Booth, P. B. (1999). *Theraplay: Helping parents and children build better relationships through attachment-based play* (2nd ed.). San Francisco: Jossey-Bass.

Joseph, S. (2002). The relationship between adopted young adults and their nonadopted siblings in the perceptions of current family relationships. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 63*(3-B).

Juffer, F. (2006). Children's awareness of adoption and their problem behavior in families with 7-year-old internationally adopted children. *Adoption Quarterly, 9*(2-3), 1-22.

Juffer, F., & Rosenboom, L. G. (1997). Infant-mother attachment of internationally adopted children in the Netherlands. *International Journal of Behavioral Development, 20*(1), 93-107.

Juffer, F., Stams, G. J. M., & Van IJzendoorn, M. H. (2004). Adopted children's problem behavior is significantly related to their ego resiliency, ego control, and sociometric status. *Journal of Child Psychology & Psychiatry, 45*(4), 697-706.

Juffer, F., & van IJzendoorn, M. H. (2005). Behavior problems and mental health referrals of international adoptees: A meta-analysis. *JAMA: Journal of the American Medical Association, 293*(20), 2501-2515.

Kennedy, J. H. (2008). Is maternal behavior in the strange situation related to infant attachment? *Journal of Early Childhood and Infant Psychology, 4*, 83-92.

Kerns, K. A., Abraham, M. M., Schlegelmilch, A., & Morgan, T. A. (2007). Mother-child attachment in later middle childhood: Assessment approaches and associations with mood and emotion regulation. *Attachment & Human Development, 9*(1), 33-53.

Keskin, G. G., & Çam, O. O. (2010). Adolescents' strengths and difficulties: Approach to attachment styles. *Journal of Psychiatric and Mental Health Nursing, 17*(5), 433-441.

Korja, R., Ahlqvist-Björkroth, S., Savonlahti, E., Stolt, S., Haataja, L., Lapinleimu, H., & ... Lehtonen, L. (2010). Relations between maternal attachment representations and the quality of mother–infant interaction in preterm and full-term infants. *Infant Behavior & Development*, *33*(3), 330-336.

Laible, D. (2005). Measuring attachment in middle childhood: Challenges and future directions. *Human Development, 48*(3), 183-187.

Lamb, M. E., Gaensbauer, T. J., Malkin, C. M., & Schultz, L. A. (1985). The effects of child maltreatment on security of infant–adult attachment. *Infant Behavior & Development, 8*(1), 35-45.

Lindaman, S. L., Booth, P. B., & Chambers, C. L. (2000). Assessing parent -child interactions with the Marschak Interaction Method (MIM). In K. Gitlin-Weiner, A. Sandgrund, C. Schaefer, K. Gitlin-Weiner, A. Sandgrund & C. Schaefer (Eds.), *Play diagnosis and assessment (2nd ed.).* (pp. 371-400). Hoboken, NJ US: John Wiley & Sons Inc.

Lipman, E. L., Offord, D. R., Racine, Y. A., & Boyle, M. H. (1992). Psychiatric disorders in adopted children: A profile from the Ontario child health study. *The Canadian Journal of Psychiatry / La Revue Canadienne De Psychiatrie, 37*(9), 627-633.

Main, M., & Cassidy, J. (1988). Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a 1-month period. *Developmental Psychology, 24*(3), 415-426.

Main, M., & Goldwyn, R. (1984). *Adult attachment scoring and classification system.* Unpublished manuscript.

Main, M., & Goldwyn, R. (1998). *Adult attachment scoring and classification system.* Unpublished manuscript.

Main, M., & Hesse, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M. Creenbetg, D. Gicchetti, & E. M. Gummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 161-182). Chicago: University of Chicago Press.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*(1), 66-104.

Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment pattern. In M. W. Yogman (Ed.), *Affective development in infancy.* (pp. 95-124). Westport, CT: Ablex Publishing.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In E. M. Cummings (Ed.), *Attachment in the preschool years: Theory, research, and intervention.* (pp. 121-160). Chicago, IL: University of Chicago Press.

Marschak, M. (1960). A method for evaluating child-parent interaction under controlled conditions. *Journal of Genetic Psychology*, 97, 3-22.

Marschak, M. (1967). Imitation and participation in normal and disturbed young boys in interaction with their parents. *Journal of Clinical Psychology*, 23, 421-427.

Marschak, M. (1980). *Parent-child interaction and youth rebellion*. New York: Gardner Press.

Marvin, R. S., & Britner, P. A. (1999). Normative development: The ontogeny of attachment. In P. R. Shaver (Ed.), *Handbook of attachment: Theory, research, and clinical applications.* (pp. 44-67). New York: Guilford Press.

McFarland-Piazza, L., Hazen, N., Jacobvitz, D., & Boyd-Soisson, E. (2012). The development of father–child attachment: Associations between adult attachment representations, recollections of childhood experiences and caregiving. *Early Child Development And Care*, *182*(6), 701-721.

McKay, J. M., Pickens, J., & Stewart, A. L. (1996). Inventoried and observed stress in parent–child interactions. *Current Psychology, 15*(3), 223-234.

Miller, B. C., & Christensen, M. (2000). Comparisons of adopted and nonadopted adolescents in a large, nationally representative sample. *Child Development, 71*(5), 1458.

Newton, R., Litrownik, A., & Landsverk, J. (2000). Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse & Neglect*, *24*(10), 1363-1374.

Niemann, S., & Weiss, S. (2012). Factors affecting attachment in international adoptees at 6 months post adoption. *Children And Youth Services Review*, *34*(1), 205-212.

O'Conner, T. G., Marvin, R. S., Rutter, M., Olrick, J. T., & Britner, P. A. (2003). Child-parent attachment following early institutional deprivation. *Development and Psychopathology, 15*(1), 19-38.

Pace, C. C. & Zavattini, G. C. (2011). 'Adoption and attachment theory' the attachment models of adoptive mothers and the revision of attachment patterns of their late-adopted children. *Child: Care, Health & Development*, 37(1), 82-88.

Pederson, D. R., Gleason, K. E., Moran, G., & Bento, S. (1998). Maternal attachment representations, maternal sensitivity, and the infant–mother attachment relationship. *Developmental Psychology, 34*(5), 925-933.

Pickens, J. (1997). Marschak interaction method rating scheme and behavioral ratings for the overall MIM: Operational definitions for rating scale. Harrisonburg, VA: James Madison University, Department of Psychology.

Ponciano, L. (2010). Attachment in foster care: The role of maternal sensitivity, adoption, and foster mother experience. *Child & Adolescent Social Work Journal, 27*(2), 97-114.

Rosenblum, K. L., Zeanah, C., McDonough, S., & Muzik, M. (2004). Video-taped coding of working model of the child interviews: A viable and useful alternative to verbatim transcripts? *Infant Behavior & Development, 27*(4), 544-549.

Rutter, M. (2006). *Genes and behavior: Nature–nurture interplay explained*. Oxford, UK: Blackwell Scientific.

Rutter, M., Colvert, E., Kreppner, J., Beckett, C., Castle, J., Groothues, C., et al. (2007). Early adolescent outcomes for institutionally-deprived and non-deprivedadoptees. I: Disinhibited attachment. *Journal of Child Psychology and Psychiatry*, *48*, 17–30.

Schechter, D. S., Kaminer, T., Coots, T., Zeanah, C. H., Davies, M., Schonfeld, I. S., et al. (2008). Distorted maternal mental representations and atypical behavior in a clinical sample of violence-exposed mothers and their toddlers. Journal of Trauma and Dissociation, 9, 123–147.

Schofield, D. W. (2010). Assessment of attachment in foster and adoptive dyads. *Dissertation Abstracts International*, *70*, 8-B.

Shapiro, V. B., & Shapiro, J. R. (2006). The adoption of foster children who suffered early trauma and object loss: Implications for practice. In D. Siskind (Ed.), *Understanding adoption: Clinical work with adults, children, and parents.* (pp. 91-114). Lanham, MD: Jason Aronson.

Sharma, A. R., McGue, M. K., & Benson, P. L. (1998). The psychological adjustment of United States adopted adolescents and their nonadopted siblings. *Child Development, 69*(3), 791.

Simmel, C. (2007). Risk and protective factors contributing to the longitudinal psychosocial well-being of adopted foster children. *Journal of Emotional & Behavioral Disorders, 15*(4), 237-249.

Slade, A., Belsky, J., Aber, J., & Phelps, J. L. (1999). Mothers' representations of their relationships with their toddlers: Links to adult attachment and observed mothering. *Developmental Psychology*, *35*(3), 611-619.

Sokolowski, S. M., Hans, S., Bernstein, V., & Cox, S. (2007). Mothers' representations of their infants and parenting behavior: Associations with personal and social-contextual variables in a high-risk sample. *Infant Mental Health Journal*, *28*(3), 344-365.

Solomon, J., & George, C. (1999). The measurement of attachment security in infancy and childhood. In P. R. Shaver (Ed.), *Handbook of attachment: Theory, research, and clinical applications.* (pp. 287-316). New York: Guilford Press.

Spieker, S. J., & Booth, C. L. (1988). Maternal antecedents of attachment quality. In T. Nezworski (Ed.), *Clinical implications of attachment.* (pp. 95-135). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Sroufe, L. A. (1988). The role of infant-caregiver attachment in development. In T. Nezworski (Ed.), *Clinical implications of attachment.* (pp. 18-38). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Sroufe, L. A., Egeland, B., Carlson, E., & Collins, W. A. (2005). Placing early attachment experiences in developmental context: The Minnesota longitudinal study. In E. Waters (Ed.), *Attachment from infancy to adulthood: The major longitudinal studies.* (pp. 48-70). New York: Guilford Publications.

Stams, G., Juffer, F., & van IJzendoorn, M. (2002). Maternal sensitivity, infant attachment, and temperament in early childhood predict adjustment in middle childhood: The case of adopted children and their biologically unrelated parents. *Developmental Psychology*, *38*(5), 806-821.

Steele, M., Hodges, J., Kaniuk, J., Hillman, S., & Henderson, K. (2003). Attachment representations and adoption: Associations between maternal states of mind and emotion narratives in previously maltreated children. *Journal of Child Psychotherapy, 29*(2), 187.

Steele, M., Hodges, J., Kaniuk, J., & Steele, H. (2010). Mental representation and change: Developing attachment relationships in an adoption context. *Psychoanalytic Inquiry, 30*(1), 25-40.

Steele, M., Kaniuk, J., Hodges, J., Asquith, K., Hillman, S., & Steele, H. (2008). Measuring mentalization across contexts: Links between representations of childhood and representations of parenting in an adoption sample. In E. L. Jurist, A. Slade, S. Bergner (Eds.), *Mind to mind: Infant research, neuroscience, and psychoanalysis* (pp. 115-136). New York: Other Press.

Steele, H., Steele, M., & Fonagy, P. (1996). Associations among attachment classifications of mothers, fathers, and their infants. *Child Development, 67*(2), 541-555.

Stern, D. N. (1995). One way to build a clinically relevant child. In J. A. Incorvaia (Ed.), *The handbook of infant, child, and adolescent psychotherapy: A guide to diagnosis and treatment.* (pp. 17-42). Lanham, MD: Jason Aronson.

Stern-Bruschweiler, N., & Stern, D. N. (1989). A model for conceptualizing the role of the mother's representational world in various mother–infant therapies. *Infant Mental Health Journal*, *10*(3), 142–156.

Stovall, K. C., & Dozier, M. (1998). Infants in foster care: An attachment theory perspective. *Adoption Quarterly, 2*(1), 55-88.

Stovall, K., & Dozier, M. (2000). The development of attachment in new relationships: Single subject analyses for 10 foster infants. *Development and Psychopathology*, *12*(2), 133-156.

Stovall-McClough, K., & Dozier, M. (2004). Forming attachments in foster care: Infant attachment behaviors during the first 2 months of placement. *Development and Psychopathology, 16*(2), 253-271.

Svanberg, P. O. G. (1998). Attachment, resilience and prevention. *Journal of Mental Health, 7*(6), 543-578.

Thompson, R. A. (1999). Early attachment and later development. In P. R. Shaver (Ed.), *Handbook of attachment: Theory, research, and clinical applications.* (pp. 265-286). New York: Guilford Press.

U.S. Department of Health and Human Services. (2011). *Adoption and Foster Care Analysis and Reporting System (AFCARS).* Washington, DC: Administration for Children and Families.

van IJzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the adult attachment interview. *Psychological Bulletin, 117*(3), 387-403.

van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (1996). Attachment representations in mothers, fathers, adolescents, and clinical groups: A meta-analytic search for normative data. *Journal of Consulting and Clinical Psychology*, *64*(1), 8-21.

van IJzendoorn, M. H. & Goldberg, S. (1992). The relative effects of maternal and child problems on the quality of attachment: A meta-analysis. *Child Development, 63*(4), 840.

van IJzendoorn, M. H., & De Wolff, M. S. (1997). In search of the absent father: meta-analysis of infant-father attachment: A rejoinder to our discussants. *Child Development, 68*(4), 604-609.

van IJzendoorn, M. H., & Juffer, F. (2005). Adoption is a successful natural intervention enhancing adopted children's IQ and school performance. *Current Directions in Psychological Science, 14*(6), 326-330.

van IJzendoorn, M. H., & Juffer, F. (2006). The emanuel miller memorial lecture 2006: Adoption as intervention. meta-analytic evidence for massive catch-up and plasticity in physical, socio-emotional, and cognitive development. *Journal of Child Psychology & Psychiatry, 47*(12), 1228-1245.

van den Dries, D., Juffer, F., van IJzendoorn, M. H., & Bakermans-Kranenburg, M. (2009). Fostering security? A meta-analysis of attachment in adopted children. *Children and Youth Services Review, 31*(3), 410-421.

Verhulst, F. C., Althaus, M., & Versluis-den Bieman, H. J. (1990). Problem behavior in international adoptees: An epidemiological study. *Journal of the American Academy of Child & Adolescent Psychiatry, 29*(1), 94-103.

Vreeswijk, C. A., Maas, A. J., van Bakel, H. (2012). Parental representations: A systematic review of the working model of the child interview. *Infant Mental Health Journal*, *33*(3), 314-328.

Ward, M. J., & Carlson, E. A. (1995). Associations among adult attachment representations, maternal sensitivity, and infant–mother attachment in a sample of adolescent mothers. *Child Development, 66*, 69–79.

Ward, M. J., Lee, S. S., & Polan, H. J. (2006). Attachment and psychopathology in a community sample. *Attachment & Human Development, 8*(4), 327-340.

Wulczyn, F., Hislop, K.B., & Goerge, R.M. (2000). *Foster care dynamics 1983–1998*. Chicago, IL: Chapin Hall Center for Children at the University of Chicago.

Zeanah, C., & Benoit, D. (1995). Clinical applications of a parent perception interview in infant mental health. *Child and Adolescent Psychiatric Clinics of North America, 4*(3), 539-554.

Zeanah, C., Benoit, D., Barton, M., & Hirshberg, L. (1996). *Working model of child interview coding manual*. New Orleans: Louisiana State University School of Medicine.

Zeanah, C., Benoit, D., Hirschberg, L., Barton, M., & Regan, C. (1994). Mother's representations of their infants are concordant with infant attachment classifications. *Developmental Issues in Psychiatry and Psychology*, 1, 9–18.

Zimmermann, P., Mohr, C., & Spangler, G. (2009). Genetic and attachment influences on adolescents' regulation of autonomy and aggressiveness. *Journal of Child Psychology & Psychiatry, 50*(11), 1339-1347.