


Spring 2019

Attachment in middle childhood among foster and adopted children: Preliminary validation of a behavioral observation system

Somer George

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Attachment in Middle Childhood Among Foster and Adopted Children:
Preliminary Validation of a Behavioral Observation System

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A Dissertation Submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In Partial Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

Department of Graduate Psychology

May 2019

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Abstract

The study of attachment in middle childhood, especially among foster and adoptive children, is a critical and timely one. An assessment that helps us understand the behavioral manifestations of attachment for these children, while considering the link with caregiving behavior and parental reflective functioning (PRF) can help to provide effective and efficient intervention leading to security and relational healing. This study examines the attachment patterns of 39 foster and adopted children (ages six to twelve) in the Modified Strange Situation Procedure (MSSP), with their caregivers. Association with caregiving patterns, PRF, and caregiver reported child behavior are analyzed using Pearson's Chi-Square. There was a significant association between child attachment classification and caregiver classification in the MSSP. There were also significant associations between child attachment classification in the MSSP and PRF on the Parent Development Interview (PDI), as well as caregiver classification on the MSSP and PRF. We also found that child externalizing behavior was related to child attachment classification, caregiver classification and degree of caregiver PRF. These results are strong and provide preliminary validity data for use of the MSSP with children in middle childhood. They also reveal the importance of observing both child and caregiver behavior, while considering PRF in developing effective intervention with this vulnerable population.

Keywords: attachment, middle childhood, foster children, adopted children, observation, assessment, caregiving, parental reflective functioning, externalizing behavior, internalizing behavior

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Chapter 1: Background and Introduction

Since John Bowlby began his study of mother-infant relationships in the 1940s (Bowlby, 1944), interest in attachment research has grown steadily. The fields of neuroscience, child development, social-personality psychology, and others have begun to recognize the foundational role of attachment theory in explaining much of human relationships and experience. As understanding and knowledge of these intricate processes have grown, the role of attachment in emotion regulation, healthy love relationships, and as safeguard against mental health problems and delinquency, has become increasingly clear (Sroufe, Egeland, Carlson, & Collins, 2005).

Although infancy and early childhood are critical developmental periods for forming secure relationships with caregivers, these relationships continue to be extremely important in the development of children and adolescents. Many children enjoy secure attachments with parents, experiencing the positive benefits of a secure base and safe-haven, but others suffer from loss or difficulty in attachment relationships, leading to emotional and behavioral challenges. Foster and adoptive children are especially at risk for a variety of social, psychological, and behavioral problems (Lawrence, Carlson, & Egeland, 2006; Juffer et al., 2011; Nadeem et al., 2017; Chesmore, Weiler, Trump, Landers, & Taussig, 2017). Understanding more about the formation and behavioral display of attachment in these children and the connection between this and the caregiver's patterns and narrative regarding the child, is critical to providing intervention that meets the challenges that these children face.

Statement of the Problem

Although the emphasis of attachment theory was on infancy and early childhood as critical developmental periods for forming secure relationships through the 1990s, the middle childhood years have been relatively neglected until recently. The result is that there is no ready consensus on the best way to conceptualize and assess attachment processes and development in the middle childhood years (Kerns & Brumariu, 2016). Some approaches draw from observing child-parent interactions, especially in infancy and early childhood (Ainsworth, Blehar, Waters, & Wall, 1978), while other approaches, used primarily with adults, rely on interviews and narrative measures. Main, Kaplan, and Cassidy (1985) proposed that we should be able to find evidence for attachment processes both by looking at attachment behavior and by understanding attachment representations. However, lacking the naturalistic observational data that informed Ainsworth's studies on mother-infant interaction, attachment research in middle childhood has relied heavily on questionnaires given to parents and teachers, story-stem completion tasks adapted from a preschool protocol, or interviews tapping into a child's representation of attachment relationships. Although many of these are valid approaches to measurement, there is a lack of observational data underpinning them, and there continues to be a need for validity data on attachment assessments for children in middle childhood (Kerns & Brumariu, 2016).

This issue is particularly salient for those with children who have experienced loss and maltreatment, especially those with multiple (or changing) caregiving relationships. Deklyn and Greenburg (2016) stated that "further development of measurements appropriate to children in extreme caregiving environments is needed for both theoretical

and practical reasons” (p. 651). Developing these measures will help us to address important clinical questions related to foster and adopted children. Zeanah, Berlin, and Boris (2011) explained that it is critical for us to understand both internal and external components of these relationships, with a focus not just on the child, but on the child in the context of the caregiving relationship. This involves considering both the caregiver’s behavior, as well as their ability to reflect on the child’s experience, and is relevant to both non-adoptive (Fonagy, Steele, Moran, Steele, & Higgitt, 1991) and adoptive parents (Steele, Henderson, Hodges, Kaniuk, Hillman, & Steele, 2007). Understanding the relationship between these variables can help us to formulate and implement more effective interventions for this particularly vulnerable population.

Purpose of the Study and Research Question

There are several variables associated with child patterns of attachment, including caregiving behavior (Oosterman, Schuengel, 2008), parental reflective functioning (Borelli, St. John, Cho, & Suchman, 2016; Slade, 2005), and child externalizing and internalizing behaviors (DeKlyen, & Greenberg, 2016). The purpose of this study is to examine the validity of child attachment classification derived from the Modified Strange Situation Procedure (MSSP; Cassidy & Marvin, 1992) with children in middle childhood and their caregiver. We will consider whether these classifications accurately represent attachment to specific caregivers, and if they are associated with caregiver classifications derived from the MSSP (Britner, Marvin, & Pianta, 2005), and parental reflective functioning (PRF) as measured by the Parent Development Interview (PDI). We will also consider whether these scores are associated with child internalizing and externalizing behavior as measured by the Child Behavior Checklist (CBCL).

The research questions are as follows:

Group 1: Attachment Classification and Parental Reflective Functioning

- Is there a relationship between the child's attachment classification and the adult's caregiving classification in the Modified Strange Situation Procedure (MSSP)?
- Is there a relationship between the child's attachment classification and the caregiver's degree of Parental Reflective Functioning (PRF)?
- Is there a relationship between the caregiver's attachment classification in the MSSP and the caregiver's PRF?

Group 2: Child Behavior

- Is the child's attachment classification in the MSSP related to the child's internalizing and externalizing behavior in the home (as reported by the parent)?
- Does the caregiver's attachment classification in the MSSP relate to the child's internalizing and externalizing behavior in the home?
- Is the child's reported internalizing and externalizing behavior in the home related to the caregiver's degree of PRF?

Significance and Strengths of the Study

The call made by Weinfield (2005) over ten years ago remains: The need exists for measures that look at secure base behavior, one of the most foundational concepts of attachment theory. We know that in infancy the goal of attachment behavior is to gain or keep proximity to the caregiver. In early childhood, this shifts to a focus on the availability of the caregiver, rather than just proximity (Bowlby, 1988). With this change, the ability to observe attachment behavior or patterns of attachment behavior becomes more subtle and complex. No longer is it enough to notice whether the child cries, is

soothed, avoids or resists contact, but we must also look at patterns that unfold in the dynamic interchanges between parent and child, with special attention to body positioning, eye-contact, tone of voice, and other relational and affective behavior (Cicchetti, Cummings, Greenberg, & Marvin, 1990).

This study provides a look at a separation-reunion procedure that considers the context of behavior of a child toward the caregiver, and provides an understanding of basic attachment patterns as they appear in foster and adoptive children. It contributes not only a potentially valid way to assess attachment patterns in middle childhood, but also leads us to a deeper (and much needed) understanding of child and caregiver behavior. In addition, it provides data about the link between child attachment behavior, caregiving behavior, parental reflective functioning, and child internalizing/externalizing behavior. All of the measures that are used in this study have validity data and are associated with attachment patterns in children.

This study also attempts to forge new territory by looking at associations between parental reflection functioning of non-biologic caregivers, caregiver attachment patterns, and child attachment patterns. Most research on PRF has exclusively focused on parents of infants and young children, and no studies have explored the association between PRF and observed child attachment security (Borelli et al., 2015). Additionally, many studies of child attachment have used low-risk samples, so this clinical sample provides a look at often neglected group and can contribute important information useful for intervention with these families.

Organization of the Study

Chapter 1 provides a brief overview of attachment theory and outlines the need for more research in the areas of middle childhood and adopted/foster children, as well as the importance of using observation as part of the assessment process. This chapter also explains the purpose of this research project and the questions that are being studied.

Chapter 2 is a thorough review of the existing literature regarding the history of attachment theory and research, attachment assessments, attachment in middle childhood, caregiving, parental reflective functioning, and foster and adoptive children. It describes the research that exists currently in these fields of study, and exposes areas that are lacking.

Chapter 3 describes the methodology of this study. This includes a brief introduction, the purpose and research questions, information about the population, and the process of collection of the archived data. Included in this chapter are detailed descriptions of each measure and information about the data-analysis that will be used.

Chapter 4 will report on results from the study. These results include associations between child attachment classification, caregiver classification, parental reflective functioning, and child behavior.

Chapter 5 is a summary of the findings along with discussion and conclusions based on the results of the study. This chapter also includes suggestions for further research.

Chapter 2: A Review of the Literature

This review will include a history and overview of attachment research to date, including ways of assessing patterns of attachment. It will then focus on the literature regarding attachment in the middle childhood years, and research regarding attachment in high risk populations, specifically foster and adoptive children. The chapter will include a review of literature regarding caregiving patterns and parental reflective functioning (PRF) and their relationship to child attachment patterns. It will conclude with a summary of the literature that ties together the previous topics.

A Brief History of Attachment Theory

John Bowlby's interest in the importance of parent-child relationships began during his undergraduate studies when he volunteered at a residential school for maladjusted children, and continued as he became a child psychiatrist and worked at the London Child Guidance Clinic. In his first systemic research project, he compared 44 juveniles charged with theft with a control group and discovered that a prolonged separation or deprivation of the mother was much more common among the juveniles charged with theft than the control group (Bowlby, 1944). This struck him as being quite important, and he continued to research the impact of maternal separation on children's development.

Through observation and study of various theoretical perspectives, Bowlby began to develop his theory of attachment, suggesting that a baby's focus on the primary caregiver, generally the mother, was demonstrated through behaviors such as crying, suckling, smiling, following, and clinging. He recognized that infant behavior began to organize into patterns during the 2nd half of the first year (Bowlby, 1958). He emphasized

the active nature of these responses and began to consider attachment behavior to be a major component of human behavior, on par with eating and sex, with protection as its biological function. Attachment behavior has the biological purpose of increasing the child's proximity to the primary attachment figure and thus the child's safety (Cassidy, 2016).

Bowlby also suggested that attachment systems were not only active in infancy, but throughout the lifespan (Bowlby & Ainsworth, 1991). The attachment relationship may remain over time, while the specific attachment behaviors may change with age, and the developmental need for safety and protection is less focused on proximity and more on availability (Sroufe & Waters, 1977). An attachment bond is a term used to refer to the connection that one person has to another who is perceived to be stronger and wiser, and is part of a larger group of bonds referred to as affectional bonds by Bowlby and Ainsworth (1991). These bonds persist across time, involve a specific person, and are emotionally significant, leading to a desire to maintain proximity or contact. Separation may cause distress, and additionally, in the case of an attachment bond, the person will seek comfort and security in the relationship with that specific person (Ainsworth, 1989).

Mary Ainsworth's Contribution

In the early 1950s, Mary Ainsworth joined Bowlby's research team at the Tavistok Clinic. She shared his interest in the adverse impact of mother-child separation (Bowlby & Ainsworth, 1991). After being involved in various studies on this topic, Ainsworth began naturalistic observation of the behavior of infants with their mothers in Uganda. She discovered evidence that infants began to use the mother as a secure base from which to explore the world and as a haven of safety. This was indicated by crying,

smiling, vocalizing, and proximity-seeking behavior. The formation of attachment was obvious when the baby showed distress and following behavior upon separation from the mother, then by a greeting and proximity seeking upon mother's return (Bowlby & Ainsworth, 1991). As Bowlby's theory and observations converged with what Ainsworth observed, the two continued to correspond and work together.

Certain patterns of attachment behavior were recognized by Mary Ainsworth in her studies of mother-infant relationships. She noticed three different groups of infants, one of which she considered to have insecure patterns with their mothers, which included a lot of crying even in the mother's presence. Secure babies cried little unless their mothers were away or leaving them, and seemed to move freely between proximity seeking and exploratory behavior. She also recognized some infants seemed to be "unattached" and frequently left alone and that the infants' patterns corresponded to maternal behavior (Bowlby & Ainsworth, 1991).

In later years, Ainsworth replicated this study in Baltimore, MD, again observing mother-child dyads and analyzing the extensive notes taken through observation in the home. She saw that the patterns she had discovered in the Uganda dyads were very similar to the ones in the Baltimore dyads (Ainsworth, Bell, & Stayton, 1971). When mothers responded consistently and promptly, infant crying reduced and by the end of the first year, these infants appeared to be securely attached (Ainsworth & Bell, 1969). These infants seemed to expect that the mother would be available and responsive to their needs. Infants who had mothers that were rejecting or insensitive at home during the first year were irritable and fussy at home, but appeared to be indifferent to their mother upon her departure in the Strange Situation Procedure, a short procedure that was used to study

infant separation-reunion behavior in a laboratory setting. This procedure would reveal the same patterns of behavior that Ainsworth discovered in her extensive naturalistic observation in the homes. This discovery led to an explosion in attachment research, as it provided a relatively simple and accurate way to assess the relationship of an infant to his/her caregiver (Stayton & Ainsworth, 1973)

Ethology

As these studies reveal, in the early years of attachment, much of the theory was based on behavioral observations, and was partly rooted in the discipline of ethology. Ethology is the study of animal behavior that combines both field science and laboratory work and is focused on the behavioral process and type of behaviors that appear in various species (Ethology; Retrieved from:

<https://www.britannica.com/science/ethology>). According to John Bowlby and Mary Ainsworth (1991), the primary characteristic of attachment theory that sets it apart from other developmental theories is the ethological approach to personality development.

Bowlby was unique among his peers as he drew from a variety of disciplines, including cognitive theory, information processing, evolutionary theory, and systems theory (Bowlby & Ainsworth, 1991), and yet the ethological contribution remained central. Bowlby's study of animal behavior through the work of Konrad Lorenz, Robert Hinde, Niko Tinbergen, and others strongly influenced his understanding of human behavior and the development of his theory regarding mother-child relationships (Hinde, 1982). According to Robert Hinde, a renowned ethologist and well-respected colleague of Bowlby's, the concept of imprinting, as well as Harlow's work with primates, lent confirmation to Bowlby's theory that attachment was not dependent upon food as many

psychoanalysts believed, and that early relationships were significant in a child's developmental process (Van Der Horst, Van Der Veer, & Van Ijzendoorn, 2007). These ideas put Bowlby at odds with many psychoanalysts of his day as he emphasized the importance of real-life events and the parent's interaction with child on personality development (Bowlby, 1991).

Attachment Behavioral System

In response to criticisms that regard attachment theory as a type of instinct theory, Waters, Bretherton, & Vaughn (2015) pointed out that the central concept is not that the attachment system is innate. Instead it is an ethological evolutionary concept regarding not the heritability of attachment, but the capacity for attachment and the ability to construct a system that uses the caregiver as a secure base. A child's attachment system may be activated by an internal state (i.e. hunger, pain, etc.), or an environmental stimulus (stranger, loud noise, etc.), and will flexibly respond to gain proximity to the caregiver, with the attachment behavior ending when in the presence of a terminating stimulus (i.e. contact or proximity with the attachment figure). Bowlby (1969/1982) suggested that the attachment behavioral system exists as a way of protecting infants from danger because of their vulnerability. However, this continues to be important during later development, especially through the childhood years, as the child begins to increase the scope of exploration (Marvin, Britner, & Russell, 2015).

The attachment behavioral system is not only important for protection by helping the child maintain proximity, but also for supporting exploration and learning (Waters, Bretherton, & Vaughn, 2015). Ainsworth's longitudinal Baltimore study emphasized this concept of the caregiver as secure base, referring to the infant's movement away from the

mother to explore, and then return to mother, which Ainsworth described as an “attachment-exploration balance” (Ainsworth, Bell, & Stayton, 1971). The attachment system and exploratory system appear to be intricately linked. Infants tend to flexibly respond to specific situations based on the environment and caregiver’s availability. When the attachment system is activated, the child stays near the caregiver and exploration decreases. On the other hand, when a child feels comfortable and certain of the caregiver’s proximity and availability, the child tends to explore the environment more freely (Bowlby, 1973).

As the child grows older, the attachment behavior system begins to function primarily as a “goal-corrected partnership” (Bowlby, 1969/1982) in which the child and parent influence each other’s behavior through verbal communication (Marvin, Britner, & Russell, 2015), and by age three, most children can include a parent’s goal into their own plan and wait until the appropriate time to execute the plan (Marvin, 1977). Bowlby also described the close connection of the fear behavioral system and the sociable behavioral system to the child’s attachment responses. Fear often activates the attachment system (less so when the parent is nearby and responsive), while sociable behavior tends to be activated when the attachment system is not (Bowlby, 1969/1982).

Bowlby suggested that the attachment behavioral system involves cognitive components or mental representations of the self, others and the world, formed by repeated experiences with caregivers. He referred to these as “Internal Working Models” (IWM). The child’s behavior is guided simultaneously by the IWM and by ongoing interaction patterns preserving of those models of attachment (Main, Kaplan, & Cassidy 1985). While rooted in infancy and childhood, the IWM is integral to the attachment

behavioral system, influencing the way an individual interprets an experience and by guiding their subsequent behavior (Bowlby, 1969/1982b). These mental representations are both flexible and adaptable, and are based on the child's real and repeated daily experiences with a caregiver (Bowlby, 1973). They can be restructured, but this is not an easy process. Once the internal working model has been organized, it tends to operate without conscious awareness of the individual and often remains stable, and resists change (Bowlby, 1980). However, with changes in concrete experiences and within a specific relationship, an individual's IWM may change. Although the IWM is considered fairly stable, it is not a template, but instead is a way that the mind organizes information about self and others, either through obtaining information, interpreting information, or limiting access to information (Main, Kaplan, & Cassidy, 1985). This is an important concept when considering both assessment and intervention for individuals who have experienced insecure patterns of attachment. Sroufe and Waters (1977) explained that because attachment behaviors become organized across situations in this way, it is more valuable to focus on the meaning of the behavior and not simply its occurrence or frequency.

Assessing Attachment

Since the early days of attachment research and the focus on naturalistic observation, there has been much attention given to the question of how to best assess attachment. From behavioral observation to representational play or interviews, to self-report questionnaires, there are so many choices for a researcher or clinician to choose from. One question is whether these various measures are capturing the same construct (Bureau & Moss, 2010). Another important question is regarding the continuity of

attachment from infancy to adulthood, for which there seems to be slight, but not definitive evidence (Pinquart, Feubner, & Ahnert, 2013). The results depend partly on the type of assessment, at what age, and whether the assessment is dimensional or categorical (Groh et al., 2014). The following section provides a brief overview and analysis of some of the most commonly used measures from infancy to adulthood, preschool, and middle childhood.

Assessing Infant Attachment

Assessing attachment in infancy is based on observing evidence of attachment security or insecurity with a particular caregiver. Attachment behaviors are intended to increase proximity or to maintain contact with a caregiver and are the observable part of the attachment behavioral system, which has the function of protecting the child and providing felt security (Bowlby, 1973). When an infant's attachment system is activated, the infant can be expected to seek proximity to the caregiver, returning to exploration once the need is met or the threat is gone (Waters, Bretherton, & Vaughn, 2015). Secure-base behavior occurs when there is low-activation of the attachment system and allows the child to explore while periodically checking in, and using the caregiver as a "secure-base" (Bowlby, 1973). The following approaches are used to assess a child's security based on behavioral observation at home, and in a laboratory procedure.

Strange Situation Procedure (SSP). The Strange Situation Procedure, developed by Mary Ainsworth, has long been the gold standard for measuring attachment patterns of an infant at the age of 12 or 18 months to the primary caregiver, usually the mother (Ainsworth, Blehar, Waters, & Wall, 1978). In this brief, structured laboratory procedure, the infant experiences two brief separations from the mother with the goal of activating

the attachment system and the automatic behavioral response to separation and reunion. Upon reunion, the child is observed and classified based on the behavior toward the caregiver. Infants classified as secure, are active (and successful) in their attempt to gain proximity, while insecure-avoidant infants ignore or avoid their parent. Insecure-resistant infants tend to seek proximity, but often display anger and an inability to be soothed and return to play (Ainsworth et al., 1978). An additional classification of Disorganized may be given when the child displays confusing, frightened, or dissociative behavior that implies disorientation in the presence of the parent (Main & Solomon, 1990).

Studies have repeatedly shown that infant Strange Situation classifications, while not fixed, capture important qualities of the infant-child relationship that can have far reaching consequences (Solomon & George, 2015). They have also been found to correlate quite strongly with the mother's similar classification category on the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996; Main, Kaplan, & Cassidy, 1985) and with measures of caregiver sensitivity and responsiveness (Solomon & George, 2015).

Attachment Q-sort (AQS). The Attachment Q-sort was developed by Everett Waters (1995) as a way of observing secure-base behavior of infants and children in the home. It consists of 90 items that reflect either secure-base or other child behavior for ages 1-5. These items are sorted into piles, either by trained observers, or by parents, based on whether they are characteristic or not characteristic of a child's behavior. The child receives a security summary score, rather than an attachment classification. One meta-analysis (Van IJzendoorn, 2004), looked at 139 studies of the AQS with infants (age 12 months) to children (age 5), and found that in some studies, security scores on the

AQS differentiate secure and insecure infants in the SSP, however other studies had differing results.

Assessing Adult Attachment

John Bowlby (1969/1982) believed that attachment was important throughout the lifespan, and was often quoted in saying that attachment characterizes the human experience “from the cradle to the grave” (p. 208). In the 1980’s the Adult Attachment Interview (AAI) was created to assess the security of the adults internal working model of attachment (George, Kaplan, & Main, 1984, 1985, 1996). Later, Hazan and Shaver (1987; Shaver & Hazen, 1988) began considering how attachment theory, and the classification scheme used in infancy might relate to adult romantic relationships. These two lines of investigation developed independently and led to variety of different measures. Although they do not necessarily converge when looking at empirical evidence, and should not be used interchangeably, they were all inspired and relate to attachment theory (Crowell, Fraley, & Roisman, 2016).

The Adult Attachment Interview (AAI). The AAI is a semi-structured autobiographical interview administered and scored to determine an individual’s state of mind regarding attachment. When scoring the AAI the focus is on coherence of discourse, not just content of speech, and involves noting inconsistencies and contradictions in the narrative (Hesse, 2016). Each interview is transcribed and analyzed, then given a classification that is parallel to the infant classifications discovered by Ainsworth and used in the SSP (Ainsworth et al., 1978). The patterns that display organized strategies for talking about attachment include: secure/autonomous,

preoccupied/ambivalent, and dismissing/avoidant. Two additional categories include unresolved/disorganized and cannot classify (Hesse, 2015)

The development of the AAI reflected a move from behavioral based assessments of attachment to more representational measures, derived from Bowlby's idea of the internal working model (IWM) of attachment. As a result, various ways of assessing attachment representations were created, and researchers began looking for links both to infant behavior in the SSP, and to other behavioral markers. In a meta-analysis done by VanIjzendoorn (1995), he found a 75% secure-insecure correspondence between the parent's security and security of the infant, even when the interview was done before the first child was born. In another study, just a year later (1996), and again in 2008, VanIjzendoorn & Bakermans-Kranenburg, found that assessing adult attachment using the AAI could discriminate between clinical and nonclinical populations. Further, mothers who are classified as secure-autonomous on the AAI have been observed to be more responsive, perceptive and sensitive to their infants (Adam, Gunnar, & Tanaka, 2004; DeOliveira, Moran, & Pederson, 2005; Haft & Slade, 1989), and caregivers who are secure tend to show more sensitivity and provide greater help and support during various tasks and separations (Crowell & Feldman, 1988, 1991)

Self-report measures. Self-report measures are often used to assess attachment within adult romantic relationships, and are derived from social and personality theory, rather than developmental research. These were originally developed by Hazan and Shaver (1987) using descriptions for adults that mirrored Ainsworth's original three categories, avoidant, secure, and resistant (Crowell, Fraley, & Roisman, 2015). Later, Bartholomew (1990), challenged the three-category model and suggested that people may

have two different representations, “Model of Self” and “Model of Others” from which four different patterns could be derived. These include the secure, preoccupied, dismissing-avoidant, and dismissing fearful.

One of the assessments using this construct is called the Relationship Styles Questionnaire (RSQ), a 30-question inventory, developed by Griffin and Bartholomew (1994a). After an extensive debate about whether adult attachment should be measured in categorical or dimensional terms (Crowell, Fraley, & Roisman, 2015), and there were an incredible number of various self-report instruments already being used, Brennan, Clark, & Shaver (1998) gathered these and analyzed them. They found two major factors were revealed through the analysis: attachment-related anxiety and attachment-related avoidance. They used this to develop a questionnaire called the Experiences in Close Relationships (ECR), which uses 36 items to tap into dimensions of anxiety and avoidance and predict relevant outcomes (Brennan, Clark, & Shaver, 1998). This, along with the ECR-R (Fraley, Waller, & Brennan, 2000), a revised version, is currently the most commonly used self-report measure of adult attachment (Crowell, Fraley, & Roisman, 2015)

Behavioral observation of adult couples. The Secure Base Scoring System (SBSS) is one example of a behavioral assessment of attachment in couples using a standard interaction task that is videotaped and scored (Crowell, Treboux, Gao, et al., 2002). During the discussion, when a partner raises a concern, that partner is rated on secure-base use from high quality to low quality based on four subscales. These include “clarity of the initial signal”, “maintenance of the signal”, “approach to the partner for help”, and “ability to be comforted” (Crowell, Fraley, & Roisman, 2015, p. 598). The

partner is scored on “interest in the partner”, “recognition of distress or concern”, “interpretation of distress”, and “responsiveness to distress.” Often the partners’ summary scores are highly correlated (Crowell, Treboux, & Gao, et. al. 2002).

Assessing Preschool Attachment

During the preschool years, there are several different approaches to assessing attachment: those based on behavioral observation, and those based on representation. There have been clearly established links between the quality of parent-child interaction in childhood and adult representation in adults. For children, security includes coherence in behavior, such as open and direct ways of communicating feelings and the expression of active and persistent attachment behavior (Solomon & George, 2016). This section will describe both observational procedures and representational measures that are used to assess preschooler’s attachment patterns.

Observational procedures. In behavioral observation systems for preschool age children, similar patterns of behavior that exist in the infant system are expected. However, given the developmental changes since infancy, both this, and the context in which behavior takes place should be considered when attempting to interpret behavior. Preschoolers will behave differently than infants regarding crying or need for physical proximity upon separation. However, with a developmentally appropriate coding system, clear patterns of attachment are captured using a basic separation-reunion behavior (Cicchetti, Cummings, Greenberg, & Martin, 1990).

Preschool Attachment Classification System (PACS). Cassidy and Marvin, with the MacArthur Attachment Working Group, (1992) adapted a classification for six-year-olds based on a separation and reunion procedure adapted from Ainsworth’s SSP to be

used with preschoolers. This approach focuses on the way that a parent and child negotiate around the separation and reunion as one way to assess the quality of a child's goal-corrected partnership that emerges during toddlerhood (Bowlby, 1969/1982). The Preschool Attachment Classification System (PACS; Cassidy et al., 1992), looks at the preschooler's behavior in context, and pays special attention to body orientation, eye contact, tone of voice, and other behavioral markers. Preschoolers are classified as secure, anxious-avoidant, or anxious-ambivalent, which correspond to the infant categories of attachment. This system includes several "disorganized" patterns, that include controlling-caregiving and controlling-punitive, based on theory and research showing that disorganized infants began to display a more organized pattern as they reach the preschool years, often showing up as a form of controlling or role-reversed behavior (Main & Cassidy, 1988). An additional category of insecure-other (I/O) is included to accommodate additional patterns that do not conform to any of the identified insecure categories.

The PACS has shown a relationship with the AQS Security subscale (Waters & Deane, 1985) according to one meta-analysis (VanIjzendoorn et al., 2004), however one study reported that there was not a significant difference between attachment classification and AQS security (Posada, 2006). The PAC has been found to correlate with several representational measures, such as the Attachment Story Completion Task (ASCT; Bretherton, Oppenheim, Buchsbaum, Emde, & the MacArthur Narrative Group, 1990; Bretherton, Ridgeway, & Cassidy, 1990; Shouldice & Stevenson-Hinde, 1992). More recently Groh, et.al (2014) found significant correlations between security on the PACS and parent's dismissive and preoccupied classifications on the AAI. Children rated

as secure and insecure in the PACS also showed a clear difference in the quality of their interaction with caregivers, with security related to warmer, more sensitive caregiving (Dexter, Wong, Stacks, Beeghly, & Barnett, 2013) and less maternal hostility with higher respect for the child's autonomy (O'Connor, Bureau, McCartney, and Lyons-Ruth, 2011). Resulting from these and other more recent studies, Solomon & George (2016) called for the Cassidy and Marvin (1992) system to be considered the preferred measure of assessing attachment in 3- and 4- year olds.

Preschool Assessment of Attachment (PAA). Another observational procedure for preschoolers is the Preschool Assessment of Attachment (PAA) also known as the “dynamic-maturational model” created by Crittenden (1992a, 1992b) which also uses a modified SSP, but is focused on the dynamic changes that take place in the child's attachment to parent over time, and emphasizes the inferences made about the function of the child's behavior. Crittenden's Preschool Assessment of Attachment (PAA; Crittenden, 1992a) shares similarities with the Preschool Attachment Classification System (PACS; Cassidy et al., 1992), but also maintains some significant differences in its approach to understanding and interpreting certain child behavior. Studies have not found these two systems to have comparable classifications when used with low risk samples (Hautamaki, Hautamaki, Neuvonen, & Maliniemi-Piispanen, 2010; Rauh, Ziegenahin, Muller, & Wijnroks, 2000; Spieker & Crittenden, 2010).

Attachment Q-Sort (AQS). Another approach to measuring attachment, the Attachment Q-Sort (AQS) was developed in the 1980s by Waters and Deane (1985) and has been used extensively in determining security and insecurity of attachment in infants and preschoolers (Van Ijzendoorn, Vereijken, Bakersman-Kranenburg, & Riksen-

Walraven, 2004). Using the AQS, an observer spends time in the home, paying special attention to secure base behavior. After the visit, a list of child behavior on cards are sorted into piles based on whether they are 'characteristic, 'neither characteristic nor uncharacteristic', or 'uncharacteristic' of the child. A security score is then derived from these (Waters & Deane, 1985). A meta-analysis (Van Ijzendoorn, 2004) of studies using the AQS found that there was sufficient validity when the AQS was sorted by an observer, but not when scored by the parent. However, as the age of the child increases, there seems to be less validity (both convergent and predictive) and this may be due to the lack of age-specific criteria of the items.

A study done by Posada (2006) looked at whether there was a relationship between a child's strange situation classification using PACS and their secure base behavior at home, as measured by the AQS. There were 45 participants ages 36-43 months from a non-clinical population. Two home visits (two to three hours each) were conducted, and a strange situation procedure took place in a laboratory after the home visits were completed. These were video-taped and coded. *T*-tests were conducted to investigate the relationship between the two assessments related to the way that secure base behavior was organized. However, they did not find a significant difference in the AQS scores for children classified as secure and insecure in the SSP. This raises the question as to whether there is a flaw in the preschool coding system developed by Cassidy and Marvin (1992), or whether the lack of congruence may be due to each instrument getting at a different variant of attachment. The latter conclusion seems more likely, as the attachment categories derived from Cassidy and Marvin's (1992) system are significantly related to other variables that would be expected such as maternal reports

about behavior problems and caregiving behavior (Achermann et al., 1991; Barnett et al., 1998, Moss et al. 1998, 2004; Stevenson-Hinde & Shouldice, 1995).

Representational measures. According to Solomon & George (2016), by the preschool years, children have formed mental representations of their attachment relationships, akin to Bowlby's internal working model (1969/1982). No certain method of assessing this representation in preschoolers has been systemically validated, but there are several measures that are widely used (Solomon & George, 2016). These include picture response measures and various doll-play approaches.

Separation-Anxiety Test (SAT). In one picture-response protocol, called the Separation Anxiety Test (SAT; Klagsbrun & Bowlby, 1976) children are shown pictures of parent-child interaction and asked to talk about each one, describing how the child in the picture feels and what they will do. Their responses are rated on a 9-point scale and then an overall scale rating is calculated. Children are assigned the best fitting classification system: secure/valuing of attachment, dismissing/avoidant, or enmeshed/preoccupied/ambivalent. Kaplan (1987) classified children's verbal responses and derived attachment classifications based on the child's emotional openness and their ability to come up with solutions to separation that are constructive. This was related to the 6-year-old's infant attachment classifications, and is related to child reunion behavior, AQS security scores and other correlates (Ackerman & Dozier, 2005; Clark & Symons, 2000; Jacobsen & Hoffmann, 1997). This approach has also been used with adolescents (Shouldice and Stevenson-Hinde, 1992), 6-7 year olds (Main et al., 1985), and 10-14 year olds (Resnick, 1993).

Attachment Story Completion Task (ASCT). Although there are various doll-play protocols that have been developed, much of the work in this area is based on Bretherton's work on representation in the preschool period, the Attachment Story Completion Task (ASCT; Bretherton et al., 1990). The ASCT was designed to assess attachment security in 4-year-olds and includes four stories. The adult introduces each story (a child spills juice, child hurts her knee, child discovers a "monster" in the bedroom, and parents go for an overnight trip and return the next day), and asks the child to complete the story using the standardized dolls. Transcripts are made of the child's verbal and non-verbal behavior and a classification is given (A, B, C, or D) based on summary scores. In one study there were significant correlations with secure and insecure classification in the PACS, but not for the specific type of insecurity (Bretherton, 1992). Security scores were also correlated with earlier AQS scores (Bretherton, 1992; Wong et al., 2011).

Assessing Attachment in Middle Childhood

Although middle childhood was historically neglected in attachment research, Bosman and Kerns (2015) point out that there are a wide variety of methods and measures that have been developed in recent years to assess attachment in middle childhood. Still, there has yet to appear a dominant conceptual or methodological approach, as with other ages (SSP for infancy, observation and narrative techniques for preschool, self-report questionnaires and autobiographical interviews for adults & adolescents). Only a few studies use observational measures, and most have used representational measures based on internal working models, such as interviews (Kriss, Steele, & Steele, 2012; Shmueli-Goetz, Target, Datta, & Fonagy, 2004), story stems

(Granot & Mayseless, 2001; Kerns, Brumariu, & Seibert, 2011), or script story assessments (Bosmans & Kerns, 2015, Psouni & Apetroaia, 2014; Waters, Bosmans, Vandevivere, Dujardin, & Waters, 2015). Others use questionnaires that are based on a child's direct report about their experiences with attachment figures (Kerns, Aspelmeier, Gentzler, & Grabill, 2001; Kerns & Brumariu, 2016). The questionnaires generally capture conscious representations, where the other approaches tap into both conscious and unconscious representations of attachment and caregivers. There is some overlap between the two, but it is quite modest (Granot & Mayseless, 2001; Kerns, Brumariu, Seibert, 2011).

Kerns and Brumariu (2016) suggested that middle childhood is a developmental period that challenges assumptions that underlie measures for other periods of development. One important consideration when assessing attachment in middle childhood is whether it is intended to assess the quality of a specific relationship, or a more general representation of attachment. Most attachment assessments in infancy and early childhood are relationship-specific, while many adult and adolescent measures are focused on an individual's state of mind regarding attachment in a more general way (Kerns, Schlegelmilch, Morgan, & Abraham, 2004). Separation-reunion procedures, story-stem completion tasks, autobiographical interviews and questionnaires usually focus on a specific attachment relationship, while script story assessments and interviews focusing on narrative coherence are designed to determine more general representations regarding attachment and the IWM (Kerns & Brumariu, 2016).

Observational procedures. Some attachment researchers are skeptical of using an observational procedure with a behavior rating during middle childhood, because of

the increased complexity of development, and the fact that short separations from the caregiver may not elicit enough distress to activate the attachment system (Main & Cassidy, 1988). However, Main et al. (1985) suggested that attachment processes should be observable and not only representational, and some studies do use behavioral observation techniques (Bureau & Moss, 2010; Easterbrooks, Bureau, & Lyons-Ruth, 2012).

According to Cassidy and Marvin (1992), there is little evidence that the representational assessments actually reflect the observed behavior in a particular attachment relationship, and suggest that behavioral scales adapted for school age children are needed to fill in this gap. Until the late 1980s there was no behaviorally-based method of classifying a child's attachment patterns with a parent, and instead only classification based on the child's representation of attachment relationships when the parent is not even present (Kaplan & Main, 1987). More recently however, attempts at validation of behavioral observation in middle childhood has been pursued (Brumariu et al., 2018; Bureau, Easterbrooks, & Lyons-Ruth, 2009), while others continue to use behavioral observation of parent-child relationship in middle childhood primarily for intervention purposes.

Six-year old system. Because of the lack of behavioral assessments for children, Main & Cassidy (1988), developed a system of classification with six-year-olds that looked at attachment behavior in response to reunion with a parent after an hour-long separation as part of a laboratory procedure. A 6-year-old's language ability, along with an increased repertoire of responses create a challenge for the observer in interpreting behavior and determining a classification (Main & Cassidy, 1988). Because classification

is based on a five-minute reunion episode, Main and Cassidy (1988), recommended that when determining a disorganized category, the assessor should not rely on one reunion observation and instead include two sessions and other assessments that include the child's representation of the relationship with the parent.

While Main and Cassidy's (1988) six-year-old system has been relatively successful in determining a child's attachment patterns based on behavior with a parent, the lack of behaviorally-based assessments for children in the middle childhood years (7-11) continues to be a concern. Some suggest that this is a problem not in the lack of observable attachment behavior, but of the need for coding systems to include context and developmentally appropriate behavioral markers (Cicchetti, 1990). Predictive validity of this system in regard to socio-emotional and academic adaptation has been demonstrated in several studies (Cassidy, 1988; Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998; Solomon et al, 1995; Speltz, Greenberg, & DeKlyen, 1990).

Middle Childhood Attachment Strategies Coding System (MCAS). The MCAS assesses the child's attachment pattern, based on observing mother child interactions during conversation as they discuss a conflict in their relationship (Brumariu, Kerns, Bureau, & Lyons-Ruth, 2014). Using this system, the child's behavior is coded in context of the parental behavior and a score is assigned based both on the behavior and the child's affect. Each child is given a rating on a scale for security, ambivalence, avoidance, disorganized-disorientation, caregiving/role-confusion, or hostile/punitive.

In a recent study to validate the MCAS (Brumariu et al., 2018), MCAS security scores were significantly and negatively related to the insecure ratings, with the disorganized ratings being the most strongly related. Those with more secure behavior on

the MCAS also reported higher security on the security scale (Kerns et al., 2001) and more security in the story-stem interview (Kerns et al., 2011). Children with more secure behavior had mothers that were lower in psychological control and higher in warmth/engagement. Children who were more securely attached were reported by their mothers to be more socially competent and to have fewer behavioral problems than children who were less securely attached. The authors concluded that all of the organizations of attachment behavior described for younger children and for adults can be reliably coded in middle childhood during an short interaction with a caregiver (Brumariu et al., 2018).

Middle Childhood Disorganization and Controlling (MCDC). Because of a lack of a valid coding system for behavioral markers of disorganization in middle childhood, Bureau, Easterbrooks, Killam, & Lyons-Ruth, (2006) developed the middle childhood disorganization (MCDC) system. It is based on the preschool coding systems developed by Cassidy and Marvin (1992), as well as theory and literature on attachment disorganization. The MCDC scales describe controlling-punitive, controlling-caregiving, and disorganized behavior and interactions are coded after a 1-hour separation. Bureau, Easterbrooks, and Lyons-Ruth (2008) attempted to validate this construct by looking at inter-judge reliability for each scale as well as construct validity related to a variety of other measures, including disorganization in infancy, disorganized representation of attachment in childhood, and behavior problems. They found that children who were classified as punitive or disorganized based on observation had higher scores of disorganization based on the representative measure (Separation Anxiety Test; SAT). They also found that children who were classified as disorganized or punitive-

disorganized had higher externalizing and internalizing behavior problems as reported by their mothers on the CBCL. Mother disrupted communication in infancy predicted child punitive and caregiving behavior at age 8, as did infant disorganization.

Other studies using observation. In a study by Oppenheim, Koren-Karie, and Sagi-Schwartz (2007), a group of 99 children and their mothers, were assessed with the SSP at age one, and then in an observation of mother-child interaction at age four and a half and seven and a half years. These observations were coded using the Autobiographical Emotional Events Dialogue (AEED; Koren-Karie et al., 2003) and the Separation-Reunion Narrative Co-Construction (SRNCC; Oppenheim, Nir, Warren, & Emde, 1997). In this study, a child's attachment in infancy was associated with their ability to engage in emotionally matched dialogue at both ages. In fact, this study found that the infant classification accounted for more variance in the seven year old dialogues than the four year old dialogues, pointing to how robust these assessments were in terms of their association with attachment. Rather than just a representational approach, where meaning making is an individual construction residing inside the parent or child (Oppenheim, 2006), this is a dynamic and interactional perspective, demonstrating the meaning that takes place not just inside the individual, but between the child and caregiver, and can be observed in their interaction with each other (Koren-Karie, & Sagi-Schwartz, 2007).

Parent-child dyads that are secure were found to be more likely to discuss emotional topics openly and expressively than those who were insecure in a study by Dubois-Comtois, Cyr, and Moss (2011). Eighty-three children were assessed at age five and a half years during a separation-reunion procedure and during a mother-child

conversation. At age eight and a half, the same children were assessed using an attachment narrative. There was significant correlation between the attachment behaviors at age five and a half years and the attachment representations at eight and a half years. The affective quality of the conversations between mother and child predicted both attachment behavior and representation. This suggests that we should consider mother-child discourse when classifying attachment patterns of child with caregiver during middle-childhood as well.

In one recent study, attachment behavior of children ages 7-13 was observed, and these observations of maladaptive attachment behavior were reliable and valid when compared with other measures when it came to diagnosing RAD or DSED (Giltaij, Sterkenburg, Schuengel (2017). Another recent study used a new preliminary observational approach to assessing attachment called the Iowa Attachment Behavior (IAB), and found associations with other attachment measures, parenting, and child adjustment (Boldt, Kochanska, Grekin, Brock, 2016).

Representational measures. Even young infants have a working model of relationships, and yet to them the attachment figure exists only in the context of the event relevant relationship. Therefore, each relationships will be represented differently from the beginnings of representation (Bureau & Moss, 2010). Most representational measures used in middle childhood focus on either questionnaires or narrative storytelling assessments (Bureau & Moss, 2010), however children may have limited ability to reflect on relationships, which could be problematic with the main focus on representational measures, like questionnaires and narrative storytelling (Bureau & Moss, 2010; Bosman & Kerns, 2015). However, because of the potential bias of self-report assessments, story

stem procedures (such as those created by Bretherton, et.al, (1990), previously used with preschool age children, were adapted to be used with older children (Granot & Maysseless, 2001).

Semi-structured interviews. In recent years, measures have been developed that are based on analyzing attachment narratives, using a semi-structured interview similar to the Adult Attachment Interview (AAI). This assumes that children will talk about their attachment relationships differently depending on whether these relationships are secure or not. Two such interviews include the Friends and Family Interview (FFI; Steele & Steele, 2005; Steele, Steele, & Kriss, 2009; Kriss, Steele, & Steele, 2012), and the Child Attachment Interview (CAI; Shmueli-Goetz, Target, Datta, & Fonagy, 2004). These interviews are semi-structured and are designed to capture the child's IWM of their attachment relationships (Shmueli-Goetz, et. al., 2004). Evidence for the validity and reliability of the CAI is emerging (Shmueli-Goetz, 2014; Shmueli-Goetz et al, 2008; Venta, Shmueli-Goetz, & Sharp, 2014). This approach to assessing middle childhood attachment is consistent with the tradition of assessing adult attachment via semi-structured interview (Steele, 2015), although some argue that it does not directly assess a child's IWM (Waters, Bosmans, Vandevivere, Dujardin, & Waters, 2015). Attachment security on the CAI is associated with lower emotion reactivity (Borelli, David, Crowley, Snavelly, & Mayes, 2013; Borelli, Siley et al., 2014), and insecurity on the FFI is associated with poor interpersonal functioning (Barcons et al., 2012). Both interviews are related to the parents AAI classifications (Shmueli-Goetz et al., 2008; Steele & Steele, 2005).

Secure Base Script Assessment (SBSA). Yet another measure for middle childhood is a version of the Secure Base Script Assessment, which asks children to develop a story from a list of words. Securely attached children recognize the implied secure base script and create a story accordingly (Psouni & Apretroiaia, 2014). Some suggest that this method is directly assessing the child's IWM (Waters et al., 2015), while others suggest it is heavily reliant on certain cognitive skills.

Self-report measures. Self-report measures ask the child to respond to questions related to their parent's behavior toward them (Kerns, Klepac, & Cole, 1996) or their general feelings and behavior related to attachment relationships (Brenning et al., 2011). The Kerns Security Scale is the most widely used in middle childhood, and is guided by the idea of the secure-base, with questions about whether the child believes that a specific caregiver is responsive and available at times of stress. Children who reported greater security on the Kerns Security Scale, had healthier friendships and had mothers more willing to serve as a secure base than children who reported less security (Kerns et al., 1996). There are significant associations between scores on the Security scale and other measures of attachment, such as story completion tasks (Granot & Mayseless, 2001).

Projective assessments. Often doll stories such as the ASCT (Bretherton & Ridgeway, 1990) are used with preschoolers to assess their representation of attachment relationships. They have also been adapted to use with six-year-olds (Gloger-Tippelt & Koenig, 2007; Main & Cassidy, 1988). Although there have been adaptations made for school age children, few have been empirically validated with behavioral precursors and correlates. Granot and Mayseless (2001), found that ten-year-old children classified as avoidant or disorganized in the doll play narrative had higher levels of reported

behavioral problems, and those who were classified as secure demonstrated better adjustment to intellectual, social, emotional, and behavioral demands of school.

Bureau and Moss (2010) conducted a study that assessed children at age four, six, and eight years of age. A separation-reunion procedure was used at age six to classify a child's attachment behavior toward a caregiver. At age eight, several stories were used from the ASCT (Bretherton & Ridgeway, 1990) to assess the child's representation of attachment and were coded into four groups, including confident (secure), casual (avoidant), busy (ambivalent), and frightened (disorganized). The correlations between the measures were significant for three of the pairings (secure, avoidant, and disorganized), in the absence of a significant negative life event. Children at age six who had disorganized behaviors, and children at age eight who had fearful/disorganized representations, were scored significantly higher by teachers on externalizing behavior. Bureau and Moss (2010), point out that their study would have been improved had a behavioral measure been used at time two. However, the lack of a validated measure for that age kept them from including this. This speaks to the importance of having a measure of attachment behavior that has been validated for use in the middle childhood years.

Concurrence of measures in middle childhood. One basic tenet of attachment theory is that a child's attachment representations are based in behavioral patterns of attachment, and therefore these should correspond (Bureau & Moss, 2010). It has been suggested recently that the field of attachment does not need any new representational measures, but instead needs information to help determine which current assessments are the most useful and how they converge with each other. It must be demonstrated that an

attachment measure relates to the quality of care the child receives and not just the child's adjustment (Kerns & Brumariu, 2016). One longitudinal study by Dubois-Comtois, Cyr, and Moss (2011) found that there was moderate correspondence between a child's attachment behavior and their representation of attachment for both the secure and insecure groups. Others have found similar results (Ammaniti, Speranza, & Fedele, 2005; Bureau & Moss, 2010; Gloger-Tippelt 2002; Granot & Mayseless, 2001)

The question remains as to which of these approaches should be considered the "gold standard" measure for middle childhood attachment. Which approaches are expected to be correlated and which measure should be used to validate new measures? Bosman and Kerns (2015), proposed that this is the wrong question to ask. Rather than asking which measure is the best, maybe we should be asking instead, "which component or aspect of the attachment construct is measured?" (p.9). This would involve considering what each of the attachment measures have in common and in what ways are they different or unique. Bosman and Kerns (2015), along with Waters and Cummings (2000) suggest that any measure of attachment should focus on the construct of a secure base, and should reflect whether an individual is able to organize their experiences and behavior in a way that uses an attachment figure as a safe haven and secure base.

When considering treatment of children who have suffered relational trauma and loss, perhaps no one measure is sufficient. The 2016 practice parameter of the American Academy of Child and Adolescent Psychiatry for the assessment and treatment of children and adolescents with RAD and DSED (DSM-5) recommended taking a comprehensive history of the child's caregiving environment (foster care, adoption, institutional care or severe deprivation, and maltreatment), a history of the child's

patterns of attachment behavior plus direct clinical observation of children with familiar caregivers as well as with a stranger (Zeanah et al., 2016).

Attachment in Middle Childhood

When considering how to conceptualize and measure attachment in middle childhood, we must start by recognizing what characterizes this phase of development. Kerns and Brumariu (2016) suggested that four features define middle childhood attachment processes. First, the goal of the attachment system is no longer proximity, but the availability of an attachment figure. The child does not necessarily need physical contact to feel secure, but instead needs the option of making contact and reuniting with their attachment figure when needed. This is not a new idea, and was reported by Bowlby (1988) as an important developmental change.

Although older children may not always need proximity to their parent to feel secure, when they experience a threat to availability it activates attachment processes. This may come because of disrupted communication, a long separation, signs of rejection, or emotional disengagement. These experiences can create anxiety and sadness that is similar to what a young child experiences upon a physical separation from the attachment figure (Kobak & Madsen, 2008).

The second feature of middle childhood is that parents remain the primary attachment figures to their children (Kerns & Brumariu, 2016). This period is a time where children's social worlds are growing and expanding, with more time away from parents and more contact with peers and other adults. Children are also becoming increasingly self-reliant and self-aware. Seibert and Kerns (2009) found that while children prefer to play with peers over parents, even 11- and 12-year-old children still have a strong preference for parents when it comes to fear, sadness, or separation. In another study by Vandevivere, Braet, and Bosmans (2015), 11- and 12-year-olds were

asked to write about a time that they needed their mother. One hundred responses were written and analyzed, with seven conditions emerging regarding the need for maternal support. The three most common responses were about physical discomfort, separation from attachment figure, and fear regulation, each of which are conditions earlier proposed by Bowlby (1969/1982) as activating the attachment behavioral system.

A third characteristic of middle childhood, according to Kerns and Brumariu (2016), is an increase of co-regulation regarding secure base contact between parent and child. Although parents often take responsibility for maintaining contact when the child is younger, by middle childhood, the child takes more responsibility for the communication. At this age, the child and parent form what Kerns and Brumariu (2016) referred to as a “collaborative alliance”, where the child still relies on the caregiver who is wiser and stronger, but also seeks out the caregiver, and uses the caregiver as a resource.

Lastly, the parent continues to serve as both a secure base to support the child’s exploration (which is much broader than in earlier years), and as a safe-haven in times of distress (Bosmans & Kerns, 2015; Kerns & Brumariu, 2016). Coordinating and balancing these needs is a critical part of middle childhood. While each parent may provide these, they may emphasize a slightly different role, with mothers tending to provide more safe-haven support, and fathers providing more secure base support. However, children’s perception of secure base and safe haven support of an individual parent are correlated (Kerns, Matthews, Koehn, Williams, & Siener-Ciesla, 2015).

Attachment Patterns in Middle Childhood

Patterns of attachment behavior in middle childhood correspond to patterns of attachment in preschoolers, but with increased possibility for goal-corrected partnership,

conversation, and verbal co-regulation (Whelan, personal communication, November 2018). Although with infants and preschoolers much of the focus is on physical proximity seeking and maintaining, children in middle childhood tend to use verbal discussion to address emotional partnership and needs because of their increased verbal and conceptual ability. In secure dyads this is clearly apparent, but with insecure dyads, its absence can be glaring and verbal exchange tends to focus only on problem solving or achievement, and less around emotional or attachment related needs. In spite of the increased cognitive development and verbal capabilities, however, much of the emotional and relational communication is still largely nonverbal. Physical manifestations of comfort versus anxiety are often evident in a child's physical orientation, affect, facial expression, and tone of voice, going beyond just the content of speech. Children who are secure tend to display congruence and smoothness between all modes of communicating (i.e. verbal exchanges and body language), whereas children with insecure patterns, often show a lack of congruence (Whelan, personal communication, March 21, 2019).

Secure. Dubois-Comtois, Cyr and Moss (2011), found that secure children tended to have verbal exchanges with their parents that displayed integration of affective information with high degrees of coherence. Secure children generally respond to the parent with confidence and openness (Main & Cassidy, 1988), and are more likely to maintain a positive affect than their insecure counterparts while making smooth transitions from one affect state to another (Cassidy & Marvin, 1992). Secure children participated freely in a goal-corrected partnership, negotiating the separation and reunion with ease and respect. This has also been described as a "supervision partnership" in middle childhood, and relates to the caregivers actual and perceived availability and

accessibility, the willingness to communicate and the mutual recognition of the other's rights (Koehn & Kerns, 2016). Secure children tend to display a range of emotions that are well regulated and seek and accept comfort from the caregiver. Secure children are generally confident, comfortable, and responsive to parental instructions or conversation (Boldt, Kochanska, Grekin, & Brock, 2016).

Anxious-avoidant. Children in middle childhood with this pattern tend to avoid their caregivers physical and affective contact during a separation-reunion procedure, and parents tend to be less involved in exchanges or negatively evaluate themselves or the child (Dubois-Comtois, Cyr, & Moss, 2011). Bowlby (1980), described this as deactivation, which is a defense created resulting from the child's experience or perception of parental rejection. These children may also minimize affect in conversation (Dubois-Comtois, Cyr, & Moss, 2011), and there is likely to be diminished communication except when discussing a task or achievement (Bosman & Kerns, 2015). In middle childhood, there is often a subtle but marked attempt to remain neutral about the relationship, by avoiding intimate or highly personal interaction. These children tend to strongly inhibit their emotional needs and may avoid interaction by focusing on toys or activity.

Anxious-ambivalent. Children who have not had consistent caregiving tend to use what Bowlby (1980) describes as cognitive disconnection, in which their attention focuses on the distress, rather than the cause of the distress, and may displace the negative feelings that emerge as a result of the parent's inconsistency. The child may exaggerate their distress to illicit comfort from the parent (Main, 1990; Dubois-Comtois, Cyr, & Moss, 2011). In conversation, mothers of ambivalent children, tend to amplify

affective states and use distraction when the child displayed discomfort (Cyr, Dubois-Comtois, & Moss, 2008). The child may have an undercurrent of anger along with displays of helplessness or dependency. Anxious-ambivalent children may appear immature, petulant and irritable at times, while sometimes acting in a “pseudo-secure” manner by exerting considerable effort to demonstrate how close the dyad is (Main & Cassidy, 1987).

Disorganized. Among the insecure groups, children with disorganized/controlling patterns are at the highest risk for externalizing behavior problems (Moss & Lecompte, 2105), and display the most varied forms of behavior. As in the preschool years, patterns of controlling, role-reversed behavior (including caregiving and punitive), have been identified, as well as other forms of disorganization that are similar to infants classified as disorganized, which include odd, bizarre or atypical features (Main & Solomon, 1986). Children who are clearly insecure, but do not fall into any of the insecure categories may be classified as insecure-other, and are often combined with other types of disorganization for research purposes (Cassidy & Marvin, 1992).

There is much still to be understood about attachment disorganization in the middle childhood years, and there has only recently been developed a behavioral coding system, the Middle Childhood Disorganization and Control (MCDC; Bureau, Easterbrooks, Killam & Lyons-Ruth, 2006). Using the MCDC scales, children with controlling punitive, caregiving and disorganized behavior in mid-childhood had greater internalizing and externalizing behavior at age 8 as reported by mother (Bureau, Easterbrooks, & Lyons-Ruth, 2009). Aspects of maternal availability (sensitivity, non-

hostility, non-intrusiveness) were associated with child's controlling and disorganized behavior in middle childhood, behavior problems at school and self-reported depressive symptoms (Easterbrooks, Bureau, & Lyons-Ruth, 2012). The development of a particular controlling pattern of behavior is likely related to individual, relational, and social variables. Use of a controlling strategy, punitive or caregiving, is an attempt to reduce the anxiety that the child has in the face of unpredictability by taking charge of the interaction (Easterbrooks, Bureau, & Lyons-Ruth, 2012). Children with a controlling-caregiving pattern may appear to helpfully guide, orient, or cheer up the parent, and may appear to be a super competent child, able to care for both members of the dyad, and often includes over-bright greetings. A child with controlling-punitive behavior often speaks to the parent in a hostile manner, telling the parent what to do, and controlling the flow of interaction (Cassidy & Marvin, 1992).

Attachment in High-Risk Populations

Foster Care and Adoption

In 2016 in the United States, there were over 400,000 children in foster care, with 57,000 adoptions from the foster care system during the year. The average age of children in foster care is 7.2 years (U.S. Department of Health and Human Services [DHHS]), 2017. Around one-third of children in foster care are living with a relative or "kinship placement," nearly half are with a non-relative foster family, and the remaining children and adolescents are in group homes or institutional settings (U.S. Department of Health and Human Services [DHHS], 2017). Additionally, approximately 4,000 international adoptions took place in the US during 2016 (U.S. Department of State, 2017).

Children enter foster care for a variety of reasons, including neglect, parental drug abuse, caretaker's inability to cope, abuse, and incarceration (U.S. Department of Health and Human Services [DHHS], 2017). Many of these children have experienced trauma and repeated loss, not just with the biologic parent, but also of foster parents with whom they have formed relationships. According to Dozier and Rutter (2016), the first several years of a child's life is when the initial selective attachments are formed and probably have the most biologic significance. Neglect, maltreatment and separation during the first year of life may have devastating long-term consequences for the child's development. Studies have shown that children in foster care have significantly higher rates of mental health and behavior problems than other at-risk children who do not have a history of abuse (Zima et. al., 2000). There is also a significant risk of insecure attachment for children who are adopted after their first birthday (Van den Dries, Juffer, Van IJzendoorn, & Bakermans-Kranenburg, 2009).

Attachment in Foster and Adopted Children

Bowlby (1980) suggested that separation of a child from their attachment figure, through death or other reasons, has a significant impact on the child. While we know that for children in the child welfare system, separation from birth parents may be necessary for the child's health and protection, it is still likely that a child will react to this separation with protest and searching behavior. For many children, this gives way to anxiety, anger, denial, and eventually hopelessness and despair (Bowlby, 1980). Eventually, the child will move into a phase where he or she appears to be recovering and shows interest in new relationships, which Bowlby referred to as "detachment" or "reorganization" (Fraley & Shaver, 2016). This process is complex and fraught with

challenges for children who have experienced abuse and neglect in their birth family and are subsequently removed and placed with new caregivers.

Is it possible for these children to form secure relationships and experience healthy developmental pathways? Several studies have found that it is not only possible, but likely (Dozier, Stovall, Albus, & Bates, 2001; Nelson et al., 2014). There are quite a few genetic and prenatal factors that influence how children adapt and cope with adversity, including things like exposure to alcohol, premature birth, maternal substance use, and certain gene-environment interactions (Dozier & Rutter, 2016), as well as factors like the age that the child enters foster care, the severity of neglect and maltreatment, and various caregiver characteristics (Bovenschen et al., 2015). Although some children continue to show deficits after being placed in foster and adoptive homes following neglect or maltreatment, many others show rapid catch-up across physical, cognitive and social domains after being placed in a stable home environment (Bakermans-Kranenburg, Steele et al., 2011; Nelson et al., 2014) which appears to be the most powerful intervention for these children. In one study of children who had been adopted from Greek orphanages, many of the children were classified as disorganized in infancy, by the age of 13 most of the children developed organized relationships with their caregivers at similar rates of those that had continuous parental care (Vorria, Ntouma, Vairami, & Rutter, 2015). This lends support to Bowlby's theory that internal working models are persistent and tend to resist change, while recognizing that change is possible at any point in the lifespan (Bowlby, 1973)

Children who live with biological parents almost always form an attachment relationship; and it is the *quality*, not the *strength*, of that relationship that is measured

with the SSP and other assessments (Sroufe, 2005). However, for children in foster or adoptive homes, there must be consideration both of quality, but also of the strength of the attachment and whether the child has formed an attachment relationship with the new caregiver. This is especially salient for children who have experienced early institutionalized care, and may fail to display specific attachments to subsequent caregivers. For children who were not institutionalized, Zeanah, Smyke, Koga, and Carlson (2005) found that 100% formed specific attachments to new caregivers. This of course does not speak to the quality of those attachment relationships, but simply to the fact that they have formed.

Most children in foster or adoptive care have already formed a selective attachment to a biologic caregiver during infancy, but the process of forming a new attachment relationship may look different because of the child's developmental stage (Dozier & Rutter, 2016). To understand this better, Stovall and Dozier (2000) had foster parents keep a diary about experiences with their children, including the child's behaviors, their own reactions, and the child's responses to them. They found that within a couple of weeks, most infants who came into care before age one developed consistent patterns of response to the caregiver, however for children over one year at placement, it seemed to take much longer. A meta-analysis done by Van den Dries, Juffer, Van IJzendoorn, and Bakermans-Kranenburg (2009) also concluded that children adopted before the age of one are likely to develop similar rates of security as children in the general population, however, children adopted after age one are more likely than their peers to be insecurely attached and are especially at risk for disorganization. Pace, Di Folco, Guerriero, Santona, and Terrone (2015) also found that security of late-adopted

children in adolescence, was highly dependent on the adoptive mother's state of mind regarding attachment.

Assessing attachment in foster and adopted children. Steele et al., (2007) noted the importance of having an approach to assessing children who are in foster or adoptive care that is akin to the observations of infants in the SSP. She suggested that many late-placed adopted children (ages 5-7 years) indicate their need for attachment figures in both verbal and nonverbal ways that are not always direct. Often the child's behavior appears erratic, confusing, or even aggressive and has developed as a result of repeated patterns with previous caregivers who themselves had insecure or disordered patterns of attachment behavior and representation (Steele et al., 2007).

One study found that late placed adopted children (4-7 years) showed significant changes in classification between the first assessment (near beginning of placement) and the second assessment six months later (Pace & Zavattini, 2010). Classifications of a control sample of children with their biologic moms remained highly stable across this time. The Secure adoptive mothers had children with attachment strategies that changed from insecure to secure. A similar study with late adopted children assessed the child's attachment patterns using a separation-reunion procedure 40 days after placement, and again 6 months later (Pace, Zavattini, & D'Alessio, 2012). Ten out of 24 insecure children moved to secure, which was statistically significant, while all those who were secure, stayed secure. Many children still had disorganized narratives 6 months in, but 48% displayed secure patterns with their caregiver, versus 14% who were secure at 40 days. This suggests that changes in behavior may precede a change in narrative, which can be best captured using an observational procedure. Spangler and Zimmermann

(1999) suggested that attachment behavior and attachment representation are not the same system, and are functionally autonomous and independent, yet nevertheless coordinated. For foster children, this seems especially relevant, in that a child's attachment behavior is often specific to the child's experience with a particular caregiver, especially considering the conflicting (and often contradictory) experience they have had.

Joseph, O'Connor, Briskman, Maughan, and Scott (2014) considered whether adolescents with previous severe maltreatment could form secure attachments using a semi-structured interview (CAI) and an observation of parent-child interaction tasks ($n=112$). Although very few adolescents had secure attachment representation with their birth mother (9%), nearly 50% had secure representations with both foster mother and foster father. Also, the rate of secure attachment of adolescents to their foster mothers did not differ significantly from adolescents living with a biologic parent. The discrepancies between rates of secure attachment with birth versus foster parents suggests the importance of providing a relationship-specific assessment that includes observing the foster child's behavior, rather than a broader representational measure.

Caregiving

Dozier and Rutter (2016) suggested that characteristics of the new caregivers can have the most significant impact on the child's ability to "catch-up" developmentally and to form strong, positive attachment relationships. For any child, having a caregiver who can both respond to emotional and physical needs, while supporting autonomy is invaluable, and leads to a healthier developmental path. Caregiving is inextricably linked to attachment, and the interplay between the systems of caregiving, attachment, and exploration are important to understand as they are sometimes complex and significantly

influence each other (Bowlby, 1969/1982). Caregiving includes a variety of behaviors that support both attachment behavior and exploratory behavior in the relationship partner (Bowlby, 1969/1982). While this is important in every parent-child relationship, the importance and complexity are heightened in children who have a history of loss and relational trauma.

Good enough caregiving provides a safe haven by supporting the child's attachment behavior and a secure base by supporting the child's exploration of the environment (Feeney & Woodhouse, 2016). A caregiver who provides a safe haven will support behavior that moves closer, using the relationship as a way to receive comfort and security and restore a feeling of safety. This requires both sensitivity and responsiveness to the child's needs and distress cues, both direct and indirect (Ainsworth, Blehar, Waters, & Wall, 1978; Feeney & Collins, 2014). Sensitive and responsive caregiving is flexible and considers the child's particular needs, feelings, and perspectives, and adjusts accordingly through attunement to verbal and nonverbal signals of the child. The caregiver determines the most appropriate response for the individual in the specific situation and monitors and modifies their own behavior and response accordingly (Bowlby, 1988). The child tends to adapt their responses to the caregiver and a well-functioning partnership evolves over time. However, a caregiver who is insensitive may not notice, or may misinterpret or ignore attachment behaviors in the child, and may reject or respond inappropriately or not at all, (Bowlby, 1969/1982, 1988), leading to the child to inhibit attachment behavior or become dysregulated or controlling (Main & Cassidy, 1988).

Caregivers who provide a secure base, support the child's behavior as they move away and explore the environment (Bowlby, 1988). This encourages the child to try things, to learn and create, and ultimately to gain confidence in their ability to interact with the world around them. Three characteristics of a caregiver who provides a secure base are availability, avoiding unnecessary interference (non-intrusiveness), and encouragement and acceptance (Feeney & Thrush, 2010). An insensitive caregiver may not notice the child's goals and desires, may become intrusive or concerned about exploration, and may discourage or impede autonomy (Feeney & Woodhouse, 2016). Children who are used to having a secure base may not even recognize that it exists, however, should it become unavailable or inaccessible, it becomes quickly apparent (Bowlby, 1988). Children who have been in foster care may lack confidence and have high levels anxiety related to exploration which may be confusing for the caregiver to interpret and respond to appropriately.

Since the early days of attachment research, the sensitivity construct has been a focus of research. Ainsworth (1978) defined sensitivity as the caregiver's ability to perceive and accurately interpret infant cues and respond promptly and appropriately to both attachment and exploration needs (Ainsworth, Bell, & Stayton, 1971; Ainsworth et al., 1978) first reported evidence that sensitive maternal caregiving is linked to infant attachment, and since then other studies have established that link (DeWolff & VanIjzendoorn, 1997), as well as the effectiveness of attachment interventions focusing on improving parental sensitivity (Bakermans-Kranenburg, Van Ijzendoorn, & Juffer, 2003).

Caregiver Attachment Patterns

Many things can influence parental behavior, one of which is the parent's own representations regarding attachment. Even autonomous caregivers may initially tend to match their behavior to the child's behavior, sometimes perpetuating difficult patterns of interaction (Stovall & Dozier, 2000). However, when foster children are placed with parents who have an autonomous state of mind regarding attachment, the child's previous experiences (including abuse and neglect) do not seem to impact their ability to form an organized attachment relationship with that caregiver (Dozier et al., 2001; Pace, Zavattini, & D'Alessio, 2012). This lends strength to the idea that attachment formation is relationship-specific, at least in young children and infants.

Children who are placed with non-autonomous caregivers are more likely to have disorganized attachment relationships, suggesting that children who have experienced early adversity need a good deal of nurturing care, preferably from secure caregivers (Dozier et al., 2001; Whelan, 2011). Pace, Zavattini, and D'Alessio (2012), also found that parents who scored high on coherence of transcript (on the AAI) had children with scores that increased significantly on the security scale over time.

As mentioned previously, much of the attachment literature is focused on caregiving of infants and toddlers, and less attention given to caregiving in middle childhood, especially among the foster and adopted population. Marvin and Britner (1996) developed an observational coding system that can be used to assess caregiving behavior with preschool aged children and to be used as a complement to the Preschool Strange Situation procedure. It consists of 5 classification categories and ten, 9-point behavior rating scales, and is intended to be used during a separation reunion procedure to measure and understand a parent's caregiving strategies and how these relate to the

strategies of their child (Britner, Marvin, & Pianta, 2005). There is yet to be a dyadic system of measurement developed for this purpose, so these complementary systems are currently the most appropriate way of measuring caregiver behavior, and are useful in assessing caregiver behavior with older children as well. Although Britner, Marvin, and Pianta (2005), acknowledge the importance of internal working models and attachment representation, the quality and type of attachment-caregiving interactions is the focus on this system, and refer to the caregiver's strategy with a particular child at a particular time rather than a trait-like characteristic of the parent.

Britner et al. (2005) categorized caregiving patterns in the following way: Secure (Beta) parents tend to show relaxed and intimate patterns of behavior with their children. They monitor their child's play, but also provide comfort and support as needed. These parents are generally warm, responsive and respectful, while maintaining their role as parent. Avoidant (Alpha) parents are dismissing of intimate interactions with their child and tend to restrict their interaction to exploration, problem solving or discipline and correction. These parents maintain neutrality by focusing on teaching or physical tasks, and avoiding emotional or personal interaction. Ambivalent (Gamma) caregivers tend to encourage the child's attachment behavior and dependency, while also displaying annoyance or irritation. They may interfere with the child's exploration and appear anxious or conflicted about the child's need for autonomy as well as for soothing and emotional co-regulation. Disorganized (Delta) caregivers often abdicate their caregiving role to the children and do not take an executive role in the relationship, often appearing passive or more sibling-like than parental. Caregivers classified as Insecure-Other (Iota) do not fit into any of the previous categories, but may display a combination of the

identified patterns, and do not offer the child a safe haven when distressed or a secure base from which to explore. They may be frightened or frightening during interactions with the child

Associations between child classification and caregiver classification were highly significant in the expected directions (Britner et al., 2005). When caregiver classifications were analyzed with caregiving scales they found that Secure mothers displayed parental delight, affection, sensitivity, and support for their child's exploration. Mothers classified as Avoidant used minimizing strategies in regard to attachment or intimate topics, and included times of rejecting, neglecting or pressuring, with a focus on exploration rather than soothing. Ambivalent caregivers demonstrated intrusiveness, and Disorganized mothers displayed role-reversed or abdicating behavior.

Caregiver Characteristics

Characteristics such as caregiver emotional investment and acceptance are a critical part of a foster child's healing and ability to deal with separations from that caregiver, and impacts their mental representation of self and others at the age of five (Ackerman & Dozier, 2005). Another critical characteristic of the foster or adoptive parent is the degree of commitment to the child. This is often taken for granted in biologic families, but there is much variation in commitment levels among foster and adoptive families, and some studies suggest it may be even more foundational to the child's sense of security than caregiver responsiveness (Dozier & Lindhiem, 2006). Caregiver behavior, stress level, and reflective functioning capacity are other important characteristics addressed below.

Caregiver behavior. Studies have repeatedly shown that responsive and warm care is related to secure attachment (Kerns, Brumariu, & Seibert, 2011; Moss, St.-Laurent, Dubois-Comtois, & Cyr, 2005; Sroufe, 2005). Considering what sensitive and responsive caregiving looks like in middle childhood is important, and Kerns et al., (2011) suggested one aspect of sensitive care involves allowing the child to express their own feelings and opinions.

When Steele and colleagues (2007) observed both child and caregiver verbal and nonverbal behavior during a five-minute interaction task using a micro-analytic approach, they found that children's negative facial expression was correlated to parent's negative facial expression, non-supportive parental touch, and parental looking behavior. Some attachment promoting parental behaviors included talking about shared experiences, using the child's name, and using the pronouns "we" and "us" when talking with the child. Although some of the children showed higher avoidance in response to these behaviors initially, the avoidance behavior appeared to decrease during the duration of interaction, pointing to the importance of the parent's behavior.

Oosterman and Schuengel (2008) found a link between parental sensitivity and child security, when disordered attachment symptoms were taken into an account. Children with higher security of attachment on the AQS had less externalizing behavior. Children with symptoms of RAD and secure base distortions predicted higher levels of both externalizing and internalizing behavior. Dubois-Comtois (2015) found that although foster caregivers' representations of attachment were interrelated, they were not associated with their children's behavior problems. However, higher-quality of parent-child interactions were related to fewer externalizing and internalizing problems.

Additionally, Joseph et al. (2014) also found that mothers of secure adolescents were more positive in their interactions, with this being a reciprocal interaction, but there was no relation between negative interactions and security. Current quality of observed parenting behavior was a reliable and independent predictor of attachment security as assessed from the CAI even for high-risk, late-placed adolescents. This was similar in the foster care and comparison sample. Secure attachments with the foster mother were associated with fewer symptoms of disruptive behavior according to parent report.

Caregiver stress. The degree of parenting stress is one environmental risk factor that may contribute to parent and child related variables (Neece, Green, & Baker, 2012). The question of whether the child's behavior is what primarily impacts parental stress or whether parental stress is contributing to negative child behavior is an important one. Research has shown a bi-directional relationship (Neece, Green & Baker, 2012), but a recent study found that parental distress has a significant direct effect on total child behavior problems (Sanner & Neece, 2018). The reasons behind this are not entirely clear, but it may be that parents with higher levels of parental stress tend to be either under-involved or over-involved with their children and tend to lack warmth in interactions (Sanner & Neece, 2018).

One study with 48 parent-foster child dyads assessed at 2 months and 6 months after placement using a variety of measures, investigated the links between foster parent sensitivity, child's attachment security, behavior problems, and parental stress (Gabler et al., 2014). They found that parental stress was not associated with parent sensitivity, but that lower parental stress, and higher parental supportive presence was related to more attachment security in their foster children at 6 months into placement. Also, the child's

externalizing and internalizing behavior scores both at placement and 6 months in were positively correlated with foster parents' stress, which may be a bidirectional effect. Parents with unresolved states of mind had a higher degree of parent stress post-adoption, especially in the category of the relationship being difficult (Lionetti, Pasotre, & Barone, 2015).

Another large study of mother-child dyads ($n=206$) found that parental stress predicted socio-emotional problems in children with insecure attachments, but not in children who are securely attached. Secure attachment may serve as a buffer for the negative impact of parental stress on the child's emotional and behavioral problems (Tharner et al., 2012).

Caregiver reflective functioning. Awareness and understanding of one's own thoughts and those of others is an important part of human existence and relationships. The ability to do this allows us to get along with each other and add meaning to emotion and behavior. It also helps us to regulate emotion and behavior in light of that understanding and awareness. Fonagy, Gergely, Jurist, and Target (2005), referred to this as "mentalization".

The development of the ability to mentalize begins in infancy as the parent and child interact from moment to moment, and the infant's emotional states are mirrored as the parent maintains a sense of reality that is reflected to the child through facial expression, tone, and body language (Slade, 2005; Fonagy et al., 2002). Eventually the child begins to recognize these as self-states and they become integrated into the sense of self. When the parent fails to mirror the infant's affect appropriately it may be frightening to the child, as in the case where the parent's own fear is strong, or it may misrepresent

the child's true experience, leaving him with a sense of emptiness or confusion (Fonagy et al., 2002). According to Slade (2005), "the centrality of the parent as mediator, reflector, interpreter, and moderator of the child's mind cannot be overemphasized." (p. 273).

Fonagy, Target, Steele and Steele (1998) began to assess the capacity to mentalize, also referred to as "reflective functioning" (RF), based on transcripts from the AAI (AAI; George, Kaplan, & Main, 1984). They focused on the adult's ability to reflect on the relationship with parents during childhood. They found that parents who had a high reflective functioning score on the AAI were more likely to be classified as secure/autonomous, and also were more likely to have children who had secure attachments at one year (Fonagy, Steele, Moran, & Steele, & Higgitt, 1991). Likewise, parents with low reflective functioning scores were more likely to be classified as insecure and have children who were also insecure (Fonagy et al., 1991).

While the parent's ability to reflect on themselves and their own parent's mental states is clearly an important capacity, others began to wonder if the parent's capacity for reflection on her child's experience and her own experience as parent would prove to be a clearer link to the transmission of attachment. Slade (2005) described parental reflective functioning (PRF) as "the parent's capacity to reflect upon and hold the inner life of her child" (p.270). PRF is assessed using the Parent Development Interview (PDI: Aber, Slade, Berger, Bresgi, & Kaplan, 1985; PDi-R: Slade, Aber, Bresgi, Berger, & Kaplan, 2004), which is a semi-structured clinical interview with 45 items that are designed to consider parent's representation of their children, themselves as parents, and their own relationship with their children. An adaptation of the reflective functioning scale

(Fonagy, et al. 1998) allows us to examine how the parent reflects on the child's emotional experience and his or her own experience as a parent, providing an effective way to evaluate PRF (Slade, Bernbach, Grienenberger, Levy, & Locker, 2004).

Studies using the PDI to determine PRF have found that parental representation of the child is linked to adult attachment classification and mothering variables, and suggest that the way a parent represents the child is related to the way that parent thinks about attachment, and to their actual parenting behavior. (Slade, Belsky, Aber, & Phelps, 1999; Slade, 2005). Slade (2005) explained that the PDI taps into experiences that are live and immediate and relationships and representations that are in the process of being constructed. She also asserted that it is important to consider PRF in context of the child's development. Borelli, et al., (2016), divided PRF into self-focused (the ability to understanding their own mental states underlying parenting behavior and impact on the child) and child-focused (the ability to understanding the child's mental states underlying behavior and their impact on the parent). They found that child-focused PRF was positively associated with child attachment security on the CAI, although not associated with parent self-reported attachment security.

When parents have a low degree of PRF they may have a hard time recognizing that their infant or child has their own internal experience, with personal thoughts and feelings. They may also deny their own internal experience of parenting, dismissing commonly felt emotions related to parenting, such as guilt, joy, and anger (Slade, 2005). Someone who scores in the mid-range of PRF would recognize her child's basic mental states and emotions, but may not be able to link this to other states or to behavior of herself or the child. A parent with high PRF is able to recognize the complexity between

mental states of herself and the child, as well as how it is linked to the behavior of each. (Slade, 2005). This understanding influences her behavior, and is therefore linked to her ability to respond to her child with sensitivity (Grienenberger, Kelly, & Slade, 2005; Zeegers, Colonnesi, Stams, & Meins, 2017), and it is theorized that higher levels of PRF lead caregivers to respond with more sensitivity (Suchman, DeCoste, Leigh, Borelli, 2010). However, there remains the question of whether PRF and mentalization are independent of sensitivity or whether they contribute to the parent's sensitivity (Laranjo et al, 2008). Zeegers et al., (2017) found that while some parents do not verbally reflect their infants' states, they may be able to show their awareness of these states and respond non-verbally (Shai & Belsky, 2011).

Research on PRF in the context of foster and adoptive families is scarce, although highly relevant, and has recently begun to be explored (Leon, Steele, Palacios, Roman, & Moreno, 2018) using an approach to scoring the PDI for PRF that was adapted for use with adoptive parents (Steele, Henderson, et al., 2007). Adoptive and foster children in middle childhood have had many experiences previous to, and outside of, the current parent-child relationship, making PRF especially important in this population (Borelli, et al., 2016). Because so many of these children have experienced trauma and loss, it is critical for new caregivers to see beyond their child's behavior and consider the experiences and emotions that motivate the behavior.

Conclusion

While there is clearly an extensive amount of research pertaining to attachment and its correlates, the gap that exists when looking at the behavior of high-risk populations in middle-childhood interacting with a caregiver is evident. Bowlby's

original ethological focus on observation has been largely lost, as a focus on individual differences and attachment representation has taken its place. While this is critical to understanding a child's internal working model, it leaves a gap in understanding the actual behavior of a child toward the caregiver, and the importance of specific attachment relationships.

Joseph et al. (2014) found large discrepancies between rates of secure attachment in the foster and birthparents, suggesting that it is important to investigate not only generalized representations of attachment relationships, but also foster children's attachment behavior with each caregiver. This study provides a preliminary look at these relationships, through the behavior that can be observed, along with various caregiver variables that may influence (or be influenced by) this behavior. The purpose of this study is to examine the validity of scores resulting from an observational measure of attachment in middle childhood, by considering how scores relate to other measures associated with attachment. An additional purpose is to observe and analyze attachment behavior of foster and adopted children with their caregivers and consider how this relates to caregiver attachment patterns, parental stress, and parental reflective functioning capacity.

Chapter 3: Methodology

Overview

According to Bosman & Kerns (2015) there is a lack of understanding and research regarding attachment in middle childhood relative to other developmental stages. The studies that have been done are primarily focused on attachment representation and are reliant on narrative or self-report. In 2008, Marvin and Britner concluded that there is an urgent need for attachment research based on observation of parent child interactions for children in middle childhood, and this need remains, especially as we seek to understand children in high-risk populations. This study uses a behavioral observation of high-risk children in middle childhood and caregiver behavior in response to this need. It considers whether classifications obtained from the MSSP are valid by looking for convergence with other measures related to attachment and caregiving, and with a focus on caregiver reflective functioning. We expect that child classifications and caregiving classifications will be related to each other, and that secure children will be more likely to have secure caregivers with higher reflective functioning, and to display fewer behavior problems than their non-secure counterparts. This study is also intended to increase our understanding of attachment processes in middle childhood among a high-risk population.

Population

Participants in this study are drawn from archival data of assessments done by the Virginia Child and Family Attachment Center (VCFAC) in Charlottesville, VA between 2014 and 2018. The population is at-risk children who are involved with the child welfare system and are living with a caregiver other than a biologic parent (i.e., in foster,

adoptive, or kinship care). Families were referred by regional Departments of Social Services for attachment concerns or child behavior and emotional problems. Thirty-nine caregiver-child dyads were selected based on age (6-12 yrs, $M= 8.8$ yrs), caregiving status (foster, adopted, relative placement), and permission given to participate in research. When children were seen with more than one caregiver, the female parent was chosen. If more than one child participated with a caregiver, the child in the center of the age range was selected.

Included in this study were 24 boys and 15 girls and one of their primary caregivers. Approximately half of the children were ages six to eight years and the other half were ages nine to twelve. Although information on race was not available for three subjects, approximately half were Caucasian, 18% African American, 8% Hispanic, and 15% bi-racial. Forty-four percent of subjects were living with a foster parent ($n=17$), 31% with a relative ($n=12$), 21% with an adoptive parent ($n=8$). One child lived with a step-parent, and one with a legal guardian. For analysis, the last two were included in the category of adoptive parent, due to the lack of biologic relative as well as the permanency of their placement. See Table 1.

Table 1
Characteristics of Participants

Gender	<i>n</i>	percent
Male	24	62%
Female	15	38%
Total	39	100%
Caregiver	<i>n</i>	percent
Adoptive	8	20%
Foster	17	44%
Relative	12	30%
Other	2	5%
Total	39	100%

Age	<i>n</i>	percent
6-8 years	19	49%
9-12 years	20	51%
Total	39	100%
Race	<i>n</i>	percent
Caucasian	20	51%
African-American	7	18%
Hispanic	3	8%
Bi-racial	6	15%
Unknown	3	8%
Total	39	100%

Measures

Modified Strange Situation Procedure (MSSP)

The Strange Situation Procedure (SSP; Ainsworth, M. D. & Bell, S. M., 1970), is a separation-reunion procedure considered the gold standard in the field of attachment for assessing the attachment patterns of an infant or young child to their primary caregiver. Not only does it yield a good deal of rich descriptive data, but when child behavior on separation and reunion is coded, a specific classification is assigned that matches the attachment pattern that is displayed—secure (B), avoidant (A), ambivalent (C), or disorganized (D). While the SSP was originally used only with infants (12-18 months) and their mothers, it has been adapted for use with preschoolers (Cassidy & Marvin, 1992), and with six year-olds (Main & Cassidy, 1988). Additional categories are included for older children are the disorganized category (e.g., controlling-caregiving/organizing, and controlling-punitive), and insecure-other (A/C mix, emotional dysregulation, compulsive compliance). While the infant strange situation has strong established validity, there is an increasing body of data suggesting that the preschool system (Cassidy & Marvin, 1992) also has good validity, and is related to social competence, behavior

problems, parents AAI classification, and other risk factors, and is recommended by Solomon & George (2016) to be used as the preferred method of assessing attachment in preschoolers.

The VCFAC uses a similar modification of the SSP with children ages 6-18 years. Classification of child attachment pattern with the caregiver correspond to the infant classification and preschool classification of secure (B), insecure-avoidant (A), insecure-ambivalent (C), disorganized or controlling (D), and insecure-other (I-O). This modification varies from the Main & Cassidy (1998) six year-old system, in that it includes two short separations (approximately five minutes each), rather than an hour-long separation. Evaluation experience at the Virginia Attachment Center indicates that information gathered with a short separation provides ample evidence for assigning classification of attachment patterns. Although some have raised the concerns that separations in middle childhood may not be stressful enough to activate the attachment system, years of observing and working with a high-risk population, have led the Virginia Attachment Center staff to believe this is not the case (Whelan, personal communication, 2018). Instead, many of these children appear to be distressed and emotionally affected by the separations and reunions displaying clear evidence of one of the major attachment classification patterns.

Each MSSP is scored by staff who have received training and become reliable on the Preschool Classification System. For this dissertation 20% of the videotaped MSSPs were double-coded by another reliable coder, reaching seventy-five percent agreement. Scores that differed were conferenced by the coders to agreement.

Neither the child attachment classification, nor the adult caregiver classification, included any subject in the “ambivalent” category, so that category was removed. The disorganized and insecure-other categories were collapsed because of the small sample size, and because they are theoretically similar. This resulted in a total of three groups: “A” (avoidant), “B” (secure), and “D” (disorganized-I/O).

Caregiving Classification System

Marvin and Britner’s (1996) caregiving system was designed to rate a caregiver’s behavior during a separation-reunion procedure with their child. It consists of five categories, and a set of ten (nine point) behavior rating scales. This system was created with the understanding that dyadic patterns of interaction between parent and child are critical, and that separate, yet complementary approaches to classifying parent and child are the best way to capture these interaction without a dyadic measurement system (Britner, Marvin, & Pianta, 2005). According to Marvin and Britner (1996), “the child’s attachment system and the parent’s caregiving system function as a self-organizing and self-regulating dyadic system, the function of which is to keep the child safe from harm while he is developing the skills necessary to protect himself.” Parent’s caregiving patterns are observed and noted through the MSSP, with special attention given to leave-taking and reunions. This caregiving system looks at a parent’s behavior with the child during the MSSP, recognizing that the parent’s strategy may be specific to that child, rather than a ‘trait-like characteristic.’ Caregivers are independently assigned a classification associated with their caregiving behavior toward the child that may or may not correspond to the child pattern in the observational procedure. These include Beta (B-Secure), Alpha (A-Avoidant), Gamma (C-Ambivalent), Delta (D-

Disorganized/Controlling), and Iota (I/O-Insecure-Other). Britner, Marvin, and Pianta (2005) found a high concordance rate between child attachment classification and caregiver behavior classifications. Whelan (2010) also found high concordance between child attachment patterns and caregiver patterns in a study of 137 foster care dyads with children from one year to six years of age.

Caregiving patterns in the MSSP are coded by clinic staff who were trained by Bob Marvin in the Parental Caregiving Classification System. Twenty percent of the tapes were double-scored by the researcher (also trained by Bob Marvin). There was 88% agreement, and with those that lacked agreement, coders reviewed the video-recording together and agreed on a classification.

Parental Development Interview

Parental Reflective Functioning (PRF) is often assessed with the Parent Development Interview (PDI; Aber, Slade, Berger, Bresgi, & Kaplan, 1985; Slade, Aber, Berger, Bresgi, & Kaplan, 2003), a semi-structured interview for caregivers. This interview considers the way that parents think about their children, about themselves as a parent, and the relationships they have with their child. Each parent participated in this interview after completing the MSSP with their child as part of the clinic assessment.

The Addendum to the Reflective Functioning Scoring Manual (Slade et al., 2004) is a companion to the RF coding manual for the AAI developed by Fonagy, Target, Steele, and Steele, 1998, but was developed specifically to use with the PDI. Scores are assigned on an 11-point scale, where scores under five indicate negative, absent or low RF, and scores of above five indicate evidence of RF ability.

In this study a collapsed version of this scoring was used, rating PRF on a scale of one to four. The rater received training in RF by Howard Steele, and used the PRF section of the PDI Coding System developed by Henderson, Steele, and Hillman (1993) for use with adoptive parents. Although interviews were scored one to four, only two interviews received a rating of four, so ratings of three and four were collapsed into a single category for analysis. A score of one indicates very low reflection, two indicates low-moderate reflection, and three indicates moderate-high reflection.

Child Behavior Checklist

The Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) was developed by Thomas M. Achenbach as part of the Achenbach System of Empirically Based Assessment (ASEBA) and is widely used to identify problematic behavior in children. Caregivers rate approximately 111 items pertaining to child behavior on a three-point Likert scale ranging from zero to two. The CBCL is used to help diagnose emotional, behavioral, and psychological disorders in childhood, and will generate a score based on internalizing and externalizing behaviors. Each caregiver filled out the school age version of the CBCL on the day of the assessment. Each child was assigned a T-score for internalizing and externalizing behaviors.

Procedure

Data Collection

All information used for this study is archived from assessments done at the VCFAC clinic within the last six years. Most families were referred by a local or regional department of social services because of child behavior, emotional, and attachment or caregiving concerns. Some of the referrals were made with the purpose of intervention

following the assessment, and others were requested to help inform decision-making regarding best placement for the child. Intervention and placement evaluations were conducted in a similar way, with less data collected during the assessment for intervention, as some of it would be done later in the home. If there were questions regarding placement and risk, a formal report was written summarizing assessment results for the referring agency, and was reviewed with the caregivers upon request.

Each family completed the battery of measures in one day, with an occasional two-day period needed to complete all the requirements. Each caregiver was asked to sign a form indicating their consent for the evaluation and video-recording. In this study, only data from caregivers who signed an additional release to use the results for research is used. When custody was not with the caregiver, additional signatures were procured as well.

After an initial interview, where the purpose of the evaluation was clarified, and paperwork completed, each caregiver participated in a Modified Strange Situation Procedure (MSSP) with their child. The Parent-Stress Index (PSI), Child Behavior Checklist (CBCL), and various other paper and pencil measures are filled out by each caregiver on the day of the assessment. After the MSSP was completed, each parent participated in the Parent Development Interview (PDI), a semi-structured interview where the caregiver is asked to reflect on the child, their own experience as a parent, and their relationship with the child. The caregiver also participated in the Adult Attachment Interview (AAI) or a similar interview regarding their own history. Analysis of AAI data is not included in this research project.

Video recordings from the MSSP and interviews are stored on an SD card in a locked file cabinet in a locked room, and on an encrypted desktop computer. Transcripts from the interview are stored on an encrypted computer. Paper and pencil measures are kept in a locked file cabinet. Classifications and scores from the various measures are stored in a data base on an encrypted computer. Confidentiality of the data is insured and it is believed that use of data in this research project creates no risk to the participants.

Data Analysis

Videos were scored by a trained reliable coder, with both children and caregivers being assigned a classification based on their behavior in the MSSP. Twenty percent of these were double-coded by another trained coder in order to ensure reliability. There was 75% agreement for child classification and 88% for parent classification. When there was disagreement, coders reviewed the video together and assigned an agreed-upon classification. The PSI and CBCL were scored by hand and recorded in a data-base.

The PDI was scored for PRF by a coder trained in RF by Howard Steele. Each interview was read all the way through, and passages were marked that displayed evidence of RF and assigned a score from one to four. These were averaged to come up with a total PRF score of one to four. If little or no evidence of PRF was noted, the interview was scored a one. Interviews receiving a score of “one”, had caregivers who tended to focus only on behavior or personality traits without acknowledging their own mental states or those of their children. They also lacked reflection on how the child’s past experiences influence current emotions and behavior, and the influence that they have on the child. Example: “He just manipulates everyone in order to get his way” or “She’s just my good little girl”. Interviews were scored “two” if there was some

acknowledgement of the child's mental states or an attempt to understand or explain the child's emotions. However, there was little or no elaboration, and explanations regarding the link between experiences, emotion, and behavior were limited. Example: "She always gets upset at bedtime, which is probably because she doesn't want to miss out on anything." "He steals because he's worried he won't have food the next day, but you have to teach him right from wrong so hopefully he'll be independent one day." A score of "three" includes higher levels of reflective ability, often acknowledging the child's mental state as well as the caregivers. These caregivers recognize that mental states underlie behavior and attempt to understand how the child is feeling and why they act the way that they do. They do not elaborate or explore this as much as someone who scores a four. Example: "I was feeling kind of annoyed by the noises he was making, but I actually think he was feeling ignored. Normally we are talking together in the car, and he could feel that I was distracted, and was probably just wanting to get my attention so he could feel connected." Caregivers with a PRF of "four", are deeply reflective about themselves and their child. They are able to connect the child's experiences to their emotions, and emotions to behavior. They are also aware of the impact of the interaction between themselves and their child, and tend to speak about the child with understanding and empathy, while acknowledging their own difficulties in the relationship. Example: "I have learned about things that trigger her and may even be scary for her, and that's when she lashes out. I think sometimes I experience her strong feelings and then I feel angry and react, and it can take some effort to get us reconnected after that. But I know she is really dealing with a lot of emotion and confusion from her past and it seems to go much better for both of us when I can be more of a non-judgmental support."

The research questions were analyzed using chi-square (X^2) in order to compare observed and expected frequencies in discrete categories. These categories include observed child attachment classification, observed caregiver classification, parental reflective functioning, and child internalizing/externalizing behavior. The frequency counts for each variable were compared to each of the other categories. Because groups are not equal, I determined the expected frequency for each group and compared the observed frequency with the expected frequency and calculated a statistic that determines whether the differences between these are significant.

Chi-square is a global statistic of overall model fit, therefore in order to investigate where the specific relationships are I examined the standardized residual (SR). Anything greater than 1.96 is considered to be statistically significant. A positive SR (>1.96) suggests that the observed count was statistically significantly higher than expected. A negative SR (<-1.96) suggests that the results are statistically significantly lower than would be expected by chance.

Chapter 4: Results

Descriptive Statistics

This sample is of children who have experienced trauma and loss, have a caregiver other than a biologic parent, and have been referred for a clinical assessment. As a result, they represent a different distribution of attachment categories than what is seen in the general population. When observed in the MSSP, this sample ($n=39$) included 17 children (43.6%) who had a Disorganized pattern with their caregiver, 14 (35.9%) with an Avoidant pattern, and eight (20.5%) with a Secure pattern. See Table 2. A similar distribution was found in the caregiving classifications, with only 20.5% of caregivers displaying Secure caregiving behavior, 61.5% Avoidant caregiving behavior, and 17.9% Disorganized caregiving behavior. See Table 3, and Figure 1. When divided into two groups Secure/Non-secure, we found that approximately 80% of children were Insecure, and 80% of caregivers were Insecure. See Figure 2.

Approximately 15.4% of caregivers had very low reflective functioning (score of 1), 51.1 % had moderate (score of 2), and 33.3% had high (score of 3 or 4) parental reflective functioning. See Table 4 and Figure 4.

Table 2
Child Attachment Classification

	Frequency	Percent	Cumulative Percent
Disorganized	17	43.6	43.6
Avoidant	14	35.9	79.5
Secure	8	20.5	100
Total	39	100	

Table 3
Caregiver Caregiving Classification

	Frequency	Percent	Cumulative Percent
Disorganized	7	17.9	17.9
Avoidant	24	61.5	79.5
Secure	8	20.5	100
Total	39	100	

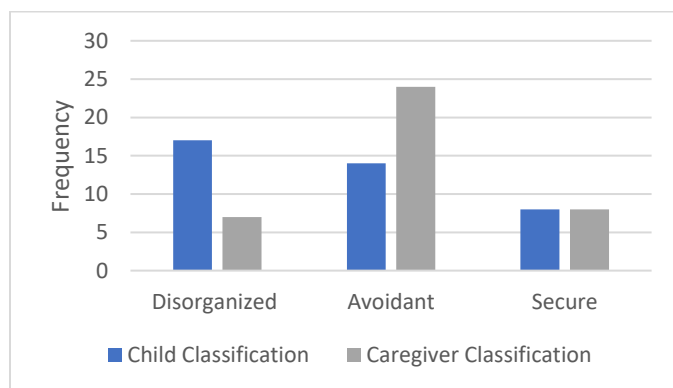


Figure 1. Three-way Child and Caregiver Classifications.

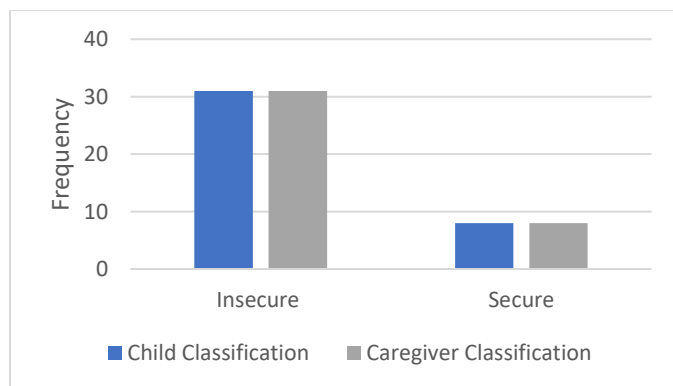


Figure 2. Two-way Child and Caregiver Classifications

Table 4
Parental Reflective Functioning

	Frequency	Percent	Cumulative Percent
low	6	15.4	15.4
moderate	20	51.3	66.7
high	13	33.3	100
Total	39	100	

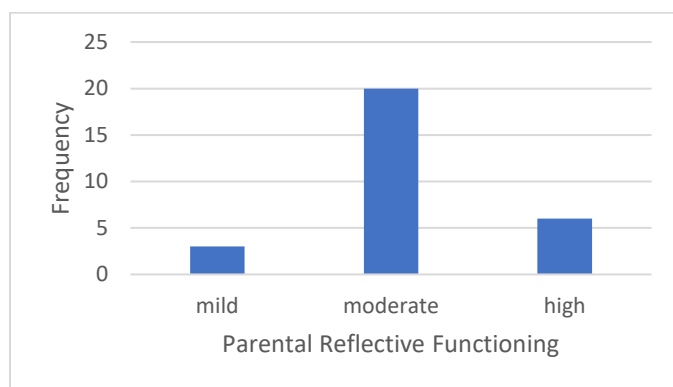


Figure 3. Degree of Parental Reflective Functioning Among Caregivers.

In summary, both the children and the caregivers in this clinical sample were much less likely to evidence secure behavior than the general population. Although children and caregivers had the same percentage of secure/non-secure classifications, there were more disorganized children than caregivers. Approximately half of the caregivers had moderate reflective functioning, with fewer having high reflective functioning and even fewer with low reflective functioning. When analyzed using Chi-Square, no significant associations were found between gender, age, or race and any attachment classification, caregiving classification, or PRF.

Research Question One

Is there a relationship between the child's attachment classification and the adult's caregiving classification in the Modified Strange Situation Procedure (MSSP)?

There was a statistically significant association between the child's attachment classification and the adult's caregiving classification in the MSSP, χ^2 , (4), 36.44, $p < .001$. Effect size was estimated using Cramer's V, with a value of .685, which is a large effect size (Cohen, 1998). This indicates a strong relationship between child's attachment classification and parent's caregiving classification in the MSSP.

Calculating standardized residuals helps us determine if the observed value in each cell differs from the expected value of that cell, and is then compared to the critical z -value (1.96) to determine whether the difference is statistically significant ($p < 0.05$). We found that for children assessed as Secure, significantly more parents were assessed as Secure than expected. For children classified as Disorganized, significantly more parents had a caregiving classification of Disorganized. Although the observed count was greater than expected, the association between Avoidant children and Avoidant caregivers did not reach the level of significance. See Table 5 and Figure 4.

Table 5
Child Classification and Caregiver Classification Crosstabulations

Child		Caregiver Classification			Total
		Avoidant	Secure	Disorganized	
Avoidant	Count	13	1	0	14
	Expected Count	8.6	2.9	2.5	14
	SR	1.5	-1.1	-1.6	
Secure	Count	1	7	0	8
	Expected Count	4.9	1.6	1.4	8
	SR	-1.8	4.2*	-1.2	
Disorganized	Count	10	0	7	17
	Expected Count	10.5	3.5	3.1	17
	SR	-0.1	-1.9	2.3*	
Total	Count	24	8	7	39

* $p < 0.05$ SR=Standardized Residual

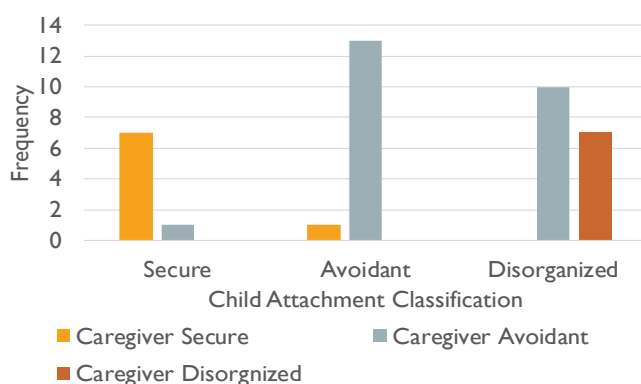


Figure 4. Child Attachment Classification by Caregiver Classification

The relationship between child attachment and caregiving classification was also analyzed using only Secure and Insecure categories. There was a statistically significant relationship between the child's attachment classification and the adult's caregiving classification in the MSSP, $\chi^2(2), 27.698, p < .001$. Effect size was estimated using Cramer's V, with a value of .843, which is a large effect size. This indicates a very strong association between the child's attachment classification and parent's caregiving classification in the MSSP. In this case we would expect six of the Insecure children to

have Secure parents if there were no relationship between them and based on the proportion of insecure and secure children. However, only one had a Secure parent ($SR = -2.1$). For Secure children, we would expect one parent to be Secure, but there were actually seven parents who were Secure ($SR = 4.2$). See Table 6 and Figure 5.

Table 6
Secure-Insecure Child and Caregiver Crosstabulations

Child		Caregiver		
		Insecure	Secure	Total
Insecure	Count	30	1	31
	Expected Count	24.6	6.4	31
	SR	1.1	*-2.1	
Secure	Count	1	7	8
	Expected Count	6.4	1.6	8
	SR	*-2.1	*4.2	
Total	Count	31	8	39

* $p < 0.05$ SR=Standardized Residual

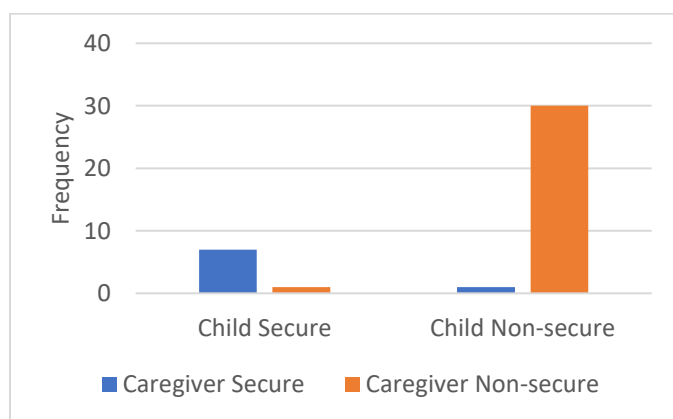


Figure 5. Two-Way Child Attachment Classification by Caregiver Classification

In summary, there was a statistically significant relationship between Secure attachment in children and Secure caregiving behavior, with a large effect size when divided into either two or three categories. There is also a significant association between Disorganized children and Disorganized Caregiving behavior.

Research Question Two

Is there a relationship between the child's attachment classification and the caregiver's degree of Parental Reflective Functioning (PRF)?

There was a statistically significant relationship between the child's attachment classification and the caregiver's PRF, $\chi^2(4), 16.378, p < .005$. Effect size was estimated using Cramer's V, with a value of .458 which is a large effect size (Cohen, 1998). This indicates a strong relationship between child's attachment classification and caregiver's PRF.

When analyzing crosstabulations, we found that when a child with Avoidant classification was crossed with the caregiver PRF, there were more caregivers with low PRF than would be expected and fewer with low or high PRF. This was not statistically significant. When child Disorganized classification was crossed with caregiver PRF, there were more caregivers with very low PRF than would be expected, and fewer with high PRF than would be expected, although this was not statistically significant. When looking at child Secure classification, there were fewer caregivers with very low or moderate PRF. There are statistically significantly more than expected Secure children who have caregivers with high PRF. See Table 7 and Figure 6.

When divided into two child attachment classifications (secure and insecure) and two levels of PRF (low=1 & 2, high = 3 & 4), there was a statistically significant relationship between the child's attachment classification and the caregiver's PRF in the MSSP, $\chi^2(1), 13.288, p < .001$. Effect size was estimated using Cramer's V, with a value of .584 which is a large effect size. This indicates a strong relationship between child's attachment classification and caregiver's PRF. There were significantly more children

classified as Secure who had a caregiver with high PRF than would be expected. Out of 8 secure children, seven (88%) had caregivers with high PRF, and only one (12%) had a caregiver with low PRF. Of the children who were non-secure 81% had a caregiver with low PRF, and only 19% had a caregiver with high PRF. See Table 8 and Figure 7.

Table 7
Child Classification and PRF Crosstabulations

Child		PRF			Total
		low	moderate	high	
Secure	Count	0	1	7	8
	Expected Count	1.2	4.1	2.7	8
	SR	-1.1	-1.5	2.7*	
Avoidant	Count	1	10	3	14
	Expected Count	2.2	7.2	4.7	14
	SR	-0.8	1.1	-0.8	
Disorganized	Count	5	9	3	17
	Expected Count	2.6	8.7	5.7	17
	SR	1.5	0.1	-1.1	
Total	Count	6	20	13	39

*p < .05 SR=Standardized Residual

Table 8
Child Classification and Two-Way PRF Crosstabulations

Child		Two-way PRF			
		high	low	Total	
Insecure	Count	6	25	31	
	Expected Count	10.3	20.7	31	
	SR	-1.3	1		
Secure	Count	7	1	8	
	Expected Count	2.7	5.3	8	
	SR	2.7*	-1.9		
Total		Count	13	26	39

* $p < .05$

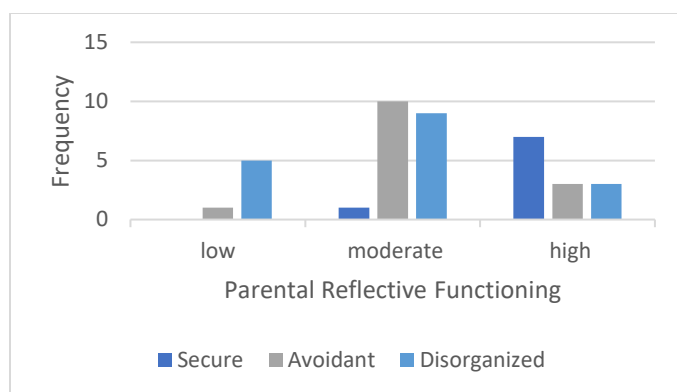


Figure 6. Parental Reflective Functioning by Child Attachment Classification.

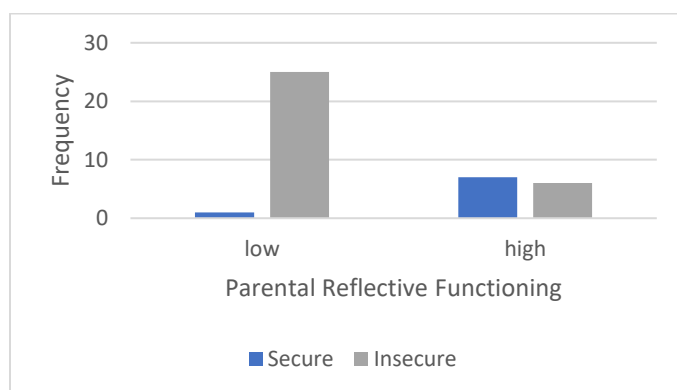


Figure 7. Two-Way Parental Reflective Functioning by Child Attachment Classification.

In summary, children with Secure attachment classification in the MSSP appear to have caregivers with higher levels of PRF. Children with an Avoidant pattern are likely to have a caregiver with moderate or low PRF, and children with a Disorganized pattern are most likely to have a caregiver with low PRF.

Research Question Three

Is there a relationship between the caregiving classification and the caregiver's PRF?

There was a statistically significant relationship between the caregiving classification and the caregiver's PRF, $\chi^2(4), 30.808, p < .001$. Effect size was estimated using Cramer's V, with a value of .628, which is a large effect size. This indicates a strong association between caregiver classification and caregiver PRF.

When looking at crosstabulations, we see that caregivers with an Avoidant caregiving pattern had more frequently than expected scores of moderate PRF, and less frequently than expected scores of high PRF, although not statistically significant. Caregivers with a Secure caregiving pattern have significantly fewer than expected moderate scores of PRF, and significantly more than expected high PRF scores. Disorganized caregivers have lower than expected scores of moderate and high PRF, and significantly higher scores of low PRF. See Table 9 and Figure 8. When analyzing crosstabs of two-way groupings (secure/insecure) and (high/low PRF), we also found that Secure caregivers have significantly more often ($p < 0.05$) high PRF than would be expected, and significantly ($p < 0.05$) lower number of low PRF than would be expected. See Table 10 and Figure 9.

Table 9
Caregiver Classification and PRF

Caregiver		Parental Reflective Functioning			
		low	moderate	high	total
Avoidant	Count	2.0	18.0	4.0	24
	Expected Count	3.7	12.3	8.0	24
	SR	-0.9	1.6	-1.4	
Secure	Count	0	0	8.0	8
	Expected Count	1.2	4.1	2.7	8
	SR	-1.1	-2.0*	3.3*	
Disorganized	Count	4.0	2.0	1.0	7
	Expected Count	1.1	3.6	2.3	7
	SR	2.8*	-0.8	-0.9	
Total	Count	6.0	20.0	13.0	39

* $p < .05$ SR=Standardized Residual

Table 10
Two-Way Caregiver Classification & PRF Crosstabulations

Caregiver		Two-Way PRF		
		low	high	Total
Insecure	Count	26.0	5.0	31
	Expected Count	20.7	10.3	31
	SR	1.2	-1.7	
Secure	Count	0	8.0	8
	Expected Count	5.3	2.7	8
	SR	-2.3*	3.3*	
Total	Count	26	13	39

$p < .05$ SR=Standardized Residual

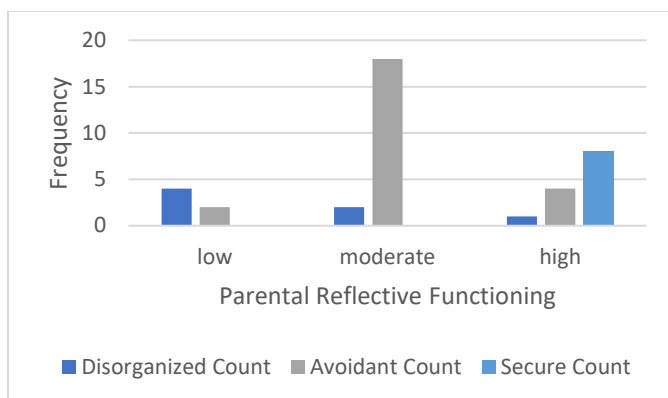


Figure 8. Parental Reflective Functioning by Caregiver Classification.

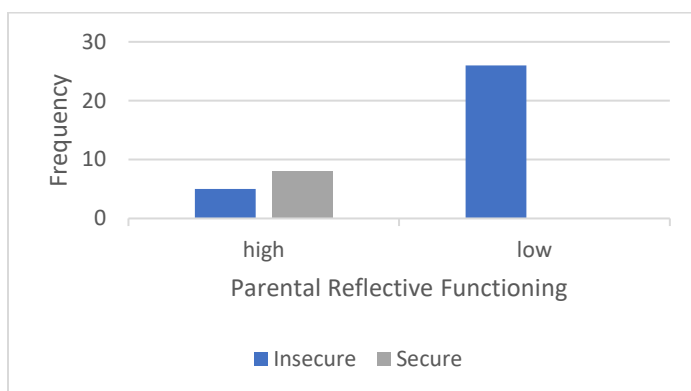


Figure 9. Two-Way Parental Reflective Functioning by Caregiver Secure/Insecure.

In sum, there was a significant association between caregiver classification in the MSSP and PRF as assessed by the PDI. Secure caregivers were most likely to have high PRF, and Non-secure caregivers are more likely to have low PRF, with Disorganized caregivers having the lowest levels of PRF.

Research Question Four

Is the child's attachment classification in the MSSP related to the child's internalizing and externalizing behavior in the home (as reported by the parent)?

To analyze the association between the child's attachment classification, and the parent-reported child internalizing and externalizing scores, I looked at the difference in

mean scores on the CBCL, along with standard deviations and the confidence interval (See Table 9.) I also used ANOVA, with Welch for correction because of the difference in variance after the Levine test suggested heterogeneity of variance. In order to get a more conservative estimate, Games Howell was selected for post hoc tests because of the small sample size and difference in variance between groups. Although there were differences in the means between groups, only the externalizing behavior was statistically significant ($p < 0.05$) using a conservative adjustment. Externalizing behavior reported for secure children was $M = 58.86$, $SD = 17$. For avoidant children it was $M = 69.56$, $SD = 10.3$, and for disorganized children it was $M = 76.07$, $SD = 6.3$. See Table 11 and Figure 10. Internalizing behavior scores for secure children were $M = 57$, $SD = 13.565$, for avoidant children it was $M = 65.33$, $SD = 5.47$, and for Disorganized children it was $M = 67.71$, $SD = 8.29$. See Table 11 and Figure 11.

Table 11

Descriptive statistics for externalizing and internalizing behavior by child attachment

	Child Attachment	<i>N</i>	<i>Mean</i>	<i>SD</i>	95% CI
Externalizing					
	Avoidant	9	69.56	10.33	61.61-77.5
	Secure	7	58.86	16.99	43.14-74.57
	Disorganized/I/O	14	76.07	6.26	72.46-79.68
	Total	30	70.10	12.43	65.46-74.74
Internalizing					
	Secure	7	57.00	13.57	44.45-69.55
	Avoidant	9	65.33	5.48	61.12-69.54
	Disorganized	14	67.71	8.29	62.93-72.5
	Total	30	64.50	9.79	60.84-68.16

$p < 0.05$

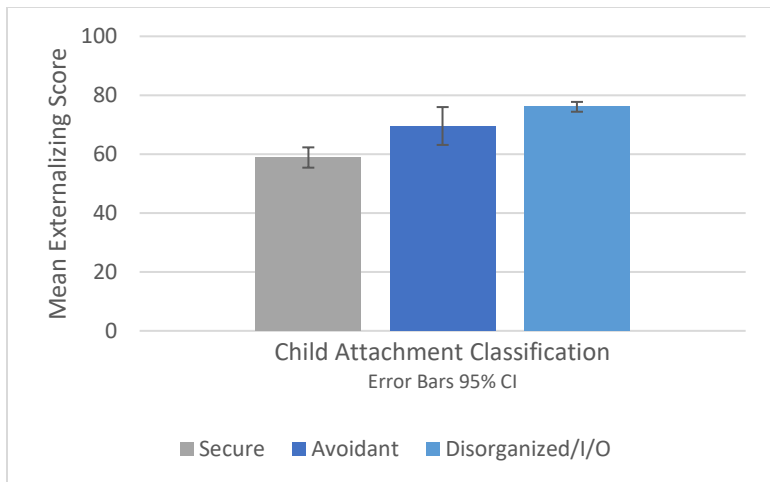


Figure 10. Mean externalizing score by child attachment classification.

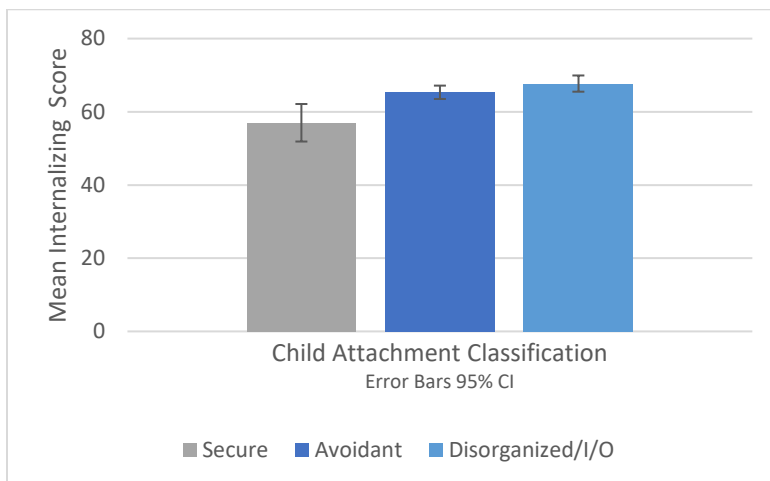


Figure 11. Mean internalizing score by child attachment classification.

Research Question Five

Does the caregiver's classification in the MSSP relate to the child's internalizing and externalizing behavior in the home?

Using Welch's ANOVA because of a small sample size and because there is a lack of homogeneity of variance, we found that caregiver classification in the MSSP has a significant association with child externalizing behavior ($p < 0.05$); however, comparisons of internalizing behavior between groups was not statistically significant.

When analyzing means, however, we found that the mean internalizing behavior scores for children of Secure parents ($M = 58$, $SD = 7.5$) was lower than either Avoidant ($M = 67.24$, $SD = 7.5$) or Disorganized parents ($M = 64.33$, $SD = 6.7$). See Table 10 and Figure 12. For Secure parents the mean externalizing score for children is $M = 58.20$, $SD = 16.5$, for Avoidant parents $M = 72.47$, $SD = 9.5$, and for Disorganized parents $M = 77.17$, $SD = 2.6$. See Table 12 and Figure 13.

Table 12

Descriptive statistics for internalizing and externalizing behavior by caregiving classification

	Caregiver Classification	N	Mean	SD	95% CI
Internalizing	Avoidant	17	67.24	7.529	63.36-71.11
	Secure	7	58	14.318	44.76-71.24
	Disorganized	6	64.33	6.653	57.35-71.32
	Total	30	64.5	9.794	60.84-68.16
Externalizing	Avoidant	17	72.47	9.52	67.58-77.37
	Secure	7	58.29	16.459	43.06-73.51
	Disorganized	6	77.17	2.639	74.4-79.94
	Total	30	70.1	12.433	65.46-74.74

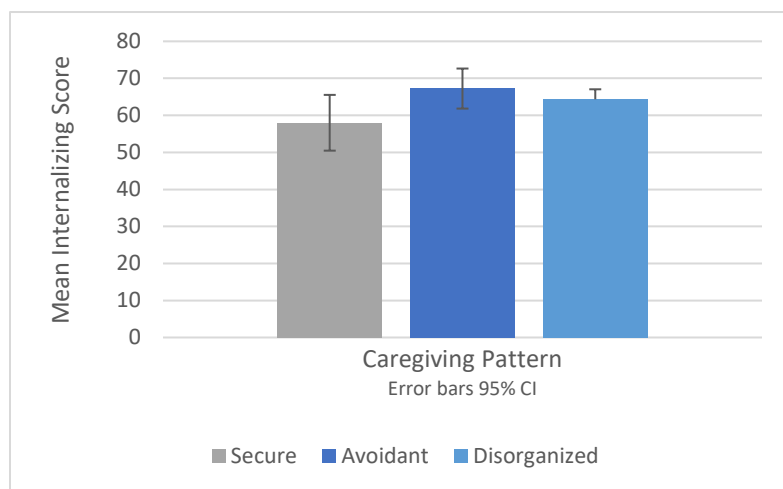


Figure 12. Mean internalizing score by caregiver classification.

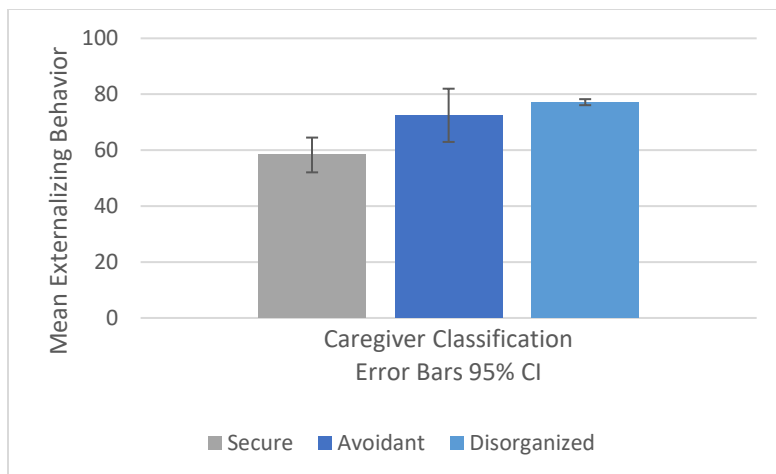


Figure 13. Mean externalizing score by caregiver classification.

In summary, caregiver classification appeared to be related to externalizing behavior in children, with disorganized caregivers having children with higher scores of externalizing behavior. Caregivers with secure classifications tend to have children with fewer externalizing behaviors. The mean Internalizing behavior score is lower for children with Secure caregivers, but this was not statistically significant.

Research Question Six

Is the child's reported internalizing and externalizing behavior in the home related to the caregiver's degree of PRF?

When looking at the mean scores of internalizing behaviors reported by caregivers on the CBCL, we found that parents with a moderate degree of PRF reported the highest levels of internalizing behavior ($M = 67.71$, $SD = 7.1$) compared to parents with low PRF ($M = 60.33$, $SD = 7.8$) or high PRF ($M = 60.30$, $SD = 12.7$). See Table 13 & Figure 13. Parents with low PRF reported the highest levels of externalizing behavior in their children ($M = 77$, $SD = 3$), which was similar to reports of those with moderate PRF ($M = 75.41$, $SD = 5$). However, parents with high levels of PRF reported fewer externalizing problems ($M = 59$, $SD = 15.6$). See Table 13 & Figure 14.

Table 13
Descriptive statistics for internalizing and externalizing behavior by PRF

		N	Mean	SD	95% CI
Internalizing	low	3	60.33	7.767	41.04-79.63
	moderate	17	67.71	7.139	64.04-71.38
	high	10	60.3	12.658	51.24-69.36
	Total	30	64.5	9.794	60.84-68.16
Externalizing	low	3	77	3	69.55-84.45
	moderate	17	75.41	5.05	72.82-78.01
	high	10	59	15.642	47.81-70.19
	Total	30	70.1	12.433	65.46-74.74

When using Games-Howell for post-hoc testing in order to have a conservative estimate because of small sample size and difference in variance, there was a statistically significant difference ($p < 0.05$) in the externalizing behavior of children with parents who had high PRF and those that had either moderate or low PRF.

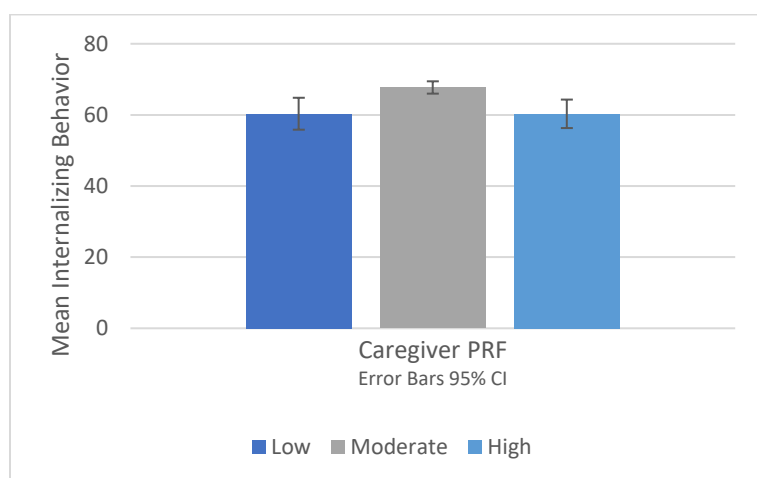


Figure 14. Mean Internalizing Behavior Score by PRF.

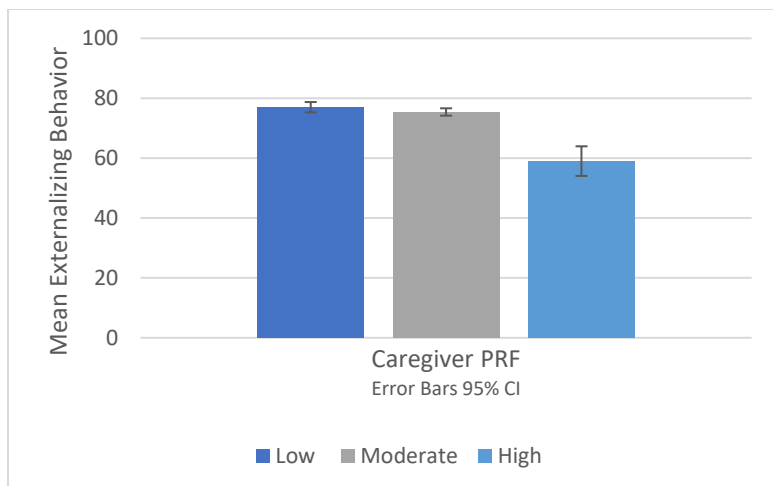


Figure 15. Mean Externalizing Behavior Score by PRF.

In summary, caregivers with low and moderate PRF reported the most externalizing behavior in children, while caregivers with high PRF reported the least number of externalizing behaviors.

Additional Results

There was a statistically significant relationship between the caregiver type (foster, adoptive, relative), and the caregiver's PRF, $\chi^2(4), 9.995, p < 0.05$. Effect size was estimated using Cramer's V, with a value of .357, which is a large effect size (Cohen, 1998).

When examining crosstabulations of caregiver type with PRF, relatives were much more likely to have low reflective functioning than expected, which was statistically significant. However, the association between caregiver type with child classification, and caregiver type with caregiver classification, were not statistically significant. Adoptive parents had the highest percentage of secure children (40%), foster parents were next (18%), and relatives had the fewest number of secure children (8%).

However, because of the small sample size and variation in group size, these results should be interpreted with caution.

Chapter 5: Discussion

This study considered a variety of associations between observed child attachment classification in the MSSP, observed caregiving patterns in the MSSP, PRF during the Parent Development Interview, and parent-reported child behavior at home. Results indicate that there are associations between certain subgroups in these various categories, with several reaching levels of statistical significance. Potential explanations, implications, and directions for future research will be considered and discussed.

Demographics

In this study, only 20% of the sampled children were classified as Secure, 36% of children were Avoidant, and 44% were Disorganized. The proportions in this sample are very different than those found in low risk samples in which approximately 60% of children are Secure and only 15% Disorganized (Van IJZendoorn et al., 1999). One meta-analytic study found slightly lower rates of security and higher rates of disorganization in adopted children with 47% Secure and 31% Disorganized although for those adopted before the age of 12 months, rates of security are similar to children raised by biologic caregivers (van den Dries, Juffer, IJzendoorn, & Bakermans-Kranenburg, 2009). For those in institutional care, the rates of disorganization are much higher (up to 71%; Zeanah et al., 2005). Vasileva and Petermann (2018), studied foster children under the age of 7 years, in 5 studies ($n=255$), and reported approximately 43% insecure, and 22% disorganized using the SSP.

The question of why our sample had less security and more disorganization is an important one. A likely reason is that families are referred to our clinic specifically because of attachment or behavioral concerns, so we would not expect it to reflect the

general distribution among foster children, since securely attached children are less likely to be referred to our clinic. Therefore, we would expect higher rates of both insecurity and disorganization than is generally found among foster or adopted children. Our sample did have higher rates of security than those found in a study of adolescents in foster care with biologic parents, and lower rates of security than with foster parents in that same study (Joseph, O'Connor, Briskman, Maughan, & Scott, 2014). Other studies have found that the greater number of risk factors for a child increased the probability of a disorganized attachment (Cyr, Euser, Bakermans-Kranenburg, & VanIJzendoorn, 2010)

Not only was there a different distribution of child attachment classification, but caregiving classifications were also different than what is found in the average population. For the child's attachment classification, these results are understandable, as this is a clinical population with high rates of separation, loss, and abuse. Caregivers, however, may or may not share this kind of history. This finding leads us to the question of whether adoptive, foster, and relatives raising someone else's children are likely to have higher rates of insecurity or disorganization than the rest of the population. These results are similar to a study by Whelan (2011) with foster and adoptive children and their caregivers. They found that approximately 54% of parents were insecure, which is higher than the general population, although still not reaching the rate of insecurity and disorganization in the current study.

It is important to note that this study is looking at older children, most of whom have experienced multiple placements, and none of whom were placed prior to 12 months old. It is possible that the dynamic interplay of the child's difficult patterns that are carried over from their own history of relationships are impacting the responses of the

caregivers. It is also worth considering whether adoptive parents, foster parents, or relative placements are more likely to have insecure patterns than the general population. Are there aspects of security that might discourage individuals from making this decision, such as awareness of their own limitations? It may also be that the children we see in our clinic are there because they have been placed with a non-secure caregiver, which in turn does not promote the child's relational healing so that emotional and behavioral issues continue.

A factor that seems to indicate higher rates of disorganization is the particular type of placement (foster, adoptive, or relative). In analyzing demographic information, we found higher rates of disorganization among children placed in the home of a relative, with nearly 67% of children classified as disorganized. Approximately 30% of adoptive parents, and 35% of foster parents had a child with a disorganized classification. Although the sample size is small, and findings were not statistically significant, this is still worth noting. It seems likely that these higher rates of disorganization may be due to patterns of disorganization and dysfunction throughout the extended family system, influencing the child's ability to form a secure attachment with the relative.

Another explanation arises when examining crosstabulations of caregiver type with PRF. We found that relatives were much more likely to have low reflective functioning than would be expected statistically. This finding was statistically significant and may explain the higher rates of insecurity and disorganization among children in this group because PRF and child attachment are theoretically linked. The question remains as to why relatives might be more likely to have lower rates of PRF. This could be related to extended family patterns of attachment and reflection, but may also be related to

socioeconomics, education or other variables. However, child attachment pattern in this study was unrelated to gender, race/ethnicity, or age.

Although our sample had high rates of avoidance and disorganization, there were no children or caregivers with an ambivalent (C or Gamma) pattern. This classification is rarely seen at VCFAC among children in the middle childhood years, which warrants consideration of whether ambivalence manifests differently in this age range or whether the construct itself fits better within a different category of attachment. Moss, Pascuzzo, and Simard (2012) suggested that the exaggerated dependency displayed by a young children with an ambivalent pattern, becomes increasingly maladaptive by the time the child reaches middle childhood, with avoidance strategies become more adaptive, allowing the child to have greater independence and integrate into settings outside of the home. Additionally, once children begin attending school, teachers may provide a sort of antidote to the child's ambivalent pattern because of the increased focus on competence and achievement.

Sroufe, J. (personal communication, February 2018) also has observed that children with the ambivalent classification seem to disappear in middle childhood. She hypothesized that over time these children may grow frustrated and become cynical regarding their parents' inconsistent behavior and shift their focus away from the relationship, becoming more avoidant or controlling. This would fit within the natural developmental tendency to begin seeking independence and competence during the middle childhood years.

Another study exploring attachment in middle childhood, and using an observational measure, also found that findings related to the ambivalent category were

less robust and there was lower inter-coder reliability than for other dimensions (Boldt et al., 2016). They suggested that normal emotional lability may be difficult to distinguish from ambivalence during the middle childhood years, and ambivalent behaviors may be less distinct in a setting that is only mildly stressful at this age. They also suggested that because of the overlap between ambivalence and disorganized behavior, that disorganization may diminish the role of ambivalence, which would fit with the fact that even in infancy, those classified as ambivalent, often receive a disorganized classification as well (Alan Sroufe, personal communication, August 2016).

Child Attachment Classification and Caregiver Classification

In this study, we found that our hypothesis was supported; child attachment classification and parental caregiving classification were significantly and meaningfully associated. The similarities we found between child and caregiver classification in this study are neither new nor surprising (Britner, Marvin, & Pianta, 2005; Whelan, 2011; Zeanah, 2012), but do add support to a growing body of evidence showing that caregiving behavior and child attachment are inextricably linked, even among foster and adoptive parents of high risk children (Bovenschen et al., 2016; Joseph et al., 2014). The fact that interaction of both parent and child can be seen on the level of behavior also lends strength to these findings, in that it goes beyond speculation to concrete, observable data.

When analyzing the specific patterns of child attachment, we found that there is a statistically significant association between Secure children and Secure caregivers, as well as between Disorganized children and Disorganized caregivers. Although Avoidant children were mostly likely to have an Avoidant caregiver, this did not reach the level of

statistical significance. Even though 13 of the 14 Avoidant children had Avoidant caregivers, 10 out of 17 Disorganized children also had Avoidant caregivers.

The findings related to children who had Secure patterns were especially striking, in that all but one had a Secure caregiver. Only one Avoidant child had a Secure caregiver, and none of the Disorganized children had a Secure caregiver. Ninety-two percent of Avoidant children had Avoidant caregivers, and the Disorganized children had either Avoidant or Disorganized caregivers. These results help emphasize the importance of children being placed with Secure caregivers, and the potential risk of Avoidant and Disorganized children being placed in Non-secure caregiving environments.

Although we do not have longitudinal data one possible conclusion is that the Secure children have become Secure as a result of being placed with a Secure caregiver. This is a theoretically sound conclusion, as we would expect that caregivers who are Secure interact with their children in ways that encourage Security and build trust and openness. The Disorganized children who are placed with Disorganized or Avoidant caregivers, may continue to be Disorganized or Insecure because they either adjust to their foster or adoptive caregivers pattern of relating, or else continue to interact in ways that were adaptive in their past relationships. Considering that Avoidant caregivers do not display the emotionally sensitive and responsive behavior needed for relational healing, old patterns of Disorganization (such as Controlling or Emotional Dysregulation) are likely to continue.

Another possibility interpretation is that the children's level of Disorganized attachment behavior influences the parent's response to them, causing the caregiver to abdicate or become overly harsh or punitive. For example, caregivers may show sensitive

and supportive caregiving behavior toward their biologic children, but when experiencing high levels of stress and exhaustion that they begin to mirror back the Disorganized or Insecure patterns of their adopted or foster child. This would then cause the dyad to remain entrenched in problematic interactions that do not allow for co-regulation and healing to take place on an emotional level.

Although we expected to see a strong match between attachment and caregiving as is common in normative samples, our sample was different than many in that the children are late placed with a non-biologic parent, and most have a long history of disrupted and dysfunctional relationships. We also chose to use two observational classification systems, because of our belief that both attachment and caregiving can be recognized on the level of behavioral interaction. We did not include representational measures with adopted children, because previous studies have found that representations of attachment are slower to change than patterns of behavior with a new caregiver (Pace, Zavattini, & D'Alessio, 2012), and other studies have found that the observed parenting behavior is a reliable and independent predictor of attachment security (Joseph, O'Connor, Briskman, Maughan, & Scott, 2014). These findings are consistent with theory, as well as with the results of this study.

Child Attachment Classification and Caregiver PRF

There was a statistically significant relationship between the child's attachment classification in the MSSP and the caregiver's PRF score on the PDI, with a large effect size. When analyzing crosstabulations, we discovered that seven out of eight children that were Secure, had caregivers with high PRF, which is significantly more than the

expected count. Of the eight Secure children, none of them had a caregiver with low RF, and only one had a caregiver with moderate PRF.

When the child Avoidant classification was crossed with caregiver PRF, there were fewer parents with very low or high PRF than we would expect if there was no association, and more than expected caregivers with moderate PRF (71%). When Disorganized child classification was crossed with caregiver PRF, there were more parents with very low PRF, and fewer with high PRF than would be expected statistically. In fact, 14 out of 17 caregivers of disorganized children had low or moderate PRF.

When divided into two child attachment classifications (Secure and Insecure) and two levels of PRF (low & high), there was a statistically significant relationship between the child's attachment classification in the MSSP and the caregiver's PRF in the PDI, again with a high effect size. For children classified as Non-secure, most had a caregiver with low PRF (81%), and of the eight Secure children, only one had a caregiver with low PRF. Overall, most children with Secure patterns had caregivers with high PRF, children with Avoidant patterns tended to have caregivers with moderate PRF, and children with Disorganized patterns had caregivers with low PRF.

These results indicate a significant association between child attachment classification and PRF. One question that arises is whether caregiving behavior and classification moderate the link between PRF and child attachment. Theory and research indicate that the caregivers' ability to be thoughtful about their child's experience and reflect on the emotions, thoughts and behaviors should influence the way that they interact with their child, leading to more sensitive behavior. This in turn may create a

greater sense of safety, allowing the child to act in ways that are more secure toward the caregiver. Rostad and Whitaker's (2016) study supported this idea, as they found that reflective functioning was related to greater involvement and communication with the child, more positive discipline practices and parent satisfaction, which would reflect the quality of parent-child relationship, contributing to secure attachment relationships.

Caregiver Classification and Caregiver PRF

It was hypothesized that caregivers with higher levels of PRF are more likely to display Secure caregiving behavior and to have children with a Secure pattern, and that caregivers with low levels of PRF are more likely to show Disorganized or Insecure caregiving patterns and have children that are more likely to be Disorganized or Insecure in their attachment patterns. This study supports these hypotheses. Caregivers with a Disorganized pattern of caregiving were more likely to have low levels of PRF. Caregivers with an Avoidant pattern were more likely to have moderate PRF and caregivers with Secure patterns were much more likely to have high levels of PRF than would be expected by chance.

We would suggest that caregivers with high PRF think about their child in a compassionate way, entertaining ideas about the thoughts and feelings that motivate their child and themselves as caregivers. Adolescents and adults with secure attachment also have higher levels of RF (Fonagy et al., 2002), so we would expect caregivers with high PRF to show more secure behavior toward their child.

Although all of the caregivers classified as Secure also received a high PRF score, there was one Disorganized caregiver and four avoidant caregivers who also received a high PRF score. In this case it is important to consider why the caregivers' ability to

reflect on the child does not translate into Secure caregiving. One possibility is that the child's disordered pattern is influencing the caregivers' responses due to increased stress or other factors. This may be related directly to the child's difficult behavior, or because the parent is feeling overwhelmed or burned out over other stressors.

Theoretically, it makes sense that caregivers with Non-secure patterns of caregiving would have lower PRF scores. These caregivers often seem unaware or insensitive to the child's emotional needs, and struggle with co-regulation and staying in the executive role. Often concrete thinking and lack of insight or awareness of mental states leave them without a strategy for dealing with what is often confusing or intense behavior from a child who has experienced trauma and loss.

The implications of this and the previous findings (regarding child attachment and PRF) are significant, particularly when it comes to intervention. Recognizing the association between PRF and both Caregiving behavior and Child classification highlights the need for intervention that targets these behaviors and provides opportunity for growth. Interventions that are aimed at increasing the caregiver's PRF are useful not only for parents of infants or biologic parents, but also for caregivers of foster and adoptive children, a population that is often underserved. Caregivers need support in exploring their own internal working models and mental states, as well as those of the child. In the context of a therapeutic relationship, helping caregivers consider and expand on questions such as "How do you think he was feeling?" "What do you think she needed from you at that moment?" are powerful ways to build both reflective capacity and create actual observable behavioral change. These changes are related both to behavior and

representation and can lead to greater security and can lead to healing for children and their caregivers.

Attachment Patterns and Parent Reports of Child Behavior

As we would predict, and as other studies have found (Bureau, Easterbrooks, & Lyons-Ruth, 2009), this study revealed that children who have a Secure relationship with a caregiver (as determined by observation in the MSSP) display fewer internalizing and externalizing behaviors at home when compared to those who have Avoidant or Disorganized attachments. Mean differences between externalizing scores of Secure and Non-secure children were statistically significant. Internalizing scores were in the expected direction, but differences were not statistically significant. This finding is similar to other studies that found higher levels of externalizing behavior in Insecure and Disorganized children (Bureau, Easterbrooks, & Lyons-Ruth, 2008; Moss & Lecompte, 2015). Children who have suffered from trauma and loss (such as those in our study) and have insecure attachment relationships with caregivers, most likely have a difficult time regulating their emotion, and are more likely to act out behaviorally. When considering that Disorganization (including I/O) is classified as a result of observations of controlling behavior, role-reversal, and dysregulation or fear, these results make sense. It is also possible that caregivers perceive the child's behavior to be especially problematic because of the lack of a secure attachment.

Most scores, regardless of the child's attachment classification, were in the clinical range. As nearly all of the children referred to the clinic have behavioral concerns, this is not surprising. Most, if not all, have experienced significant loss and/or trauma, and although a secure relationship certainly has an impact on acting out behavior,

other factors outside of the particular relationship being assessed may contribute to elevated scores. Secure children may continue to display difficult behaviors as a result of their history of trauma and disorganization, but are better able to use caregivers for help and soothing than non-secure children.

Although a larger sample size and less variance between groups would add strength to these results, they are in line with other studies about child attachment and behavior. Externalizing behavior is a known correlate to attachment behavior, and these results lend support to the observational procedure as an accurate measure of attachment patterns.

Caregiving Classification and Parent Reports of Child Behavior

Because of our small sample size and heterogeneity of variance between groups, our statistical analysis was limited. However, even using a conservative estimate, we found that the caregiver's classification had a significant association with reported child externalizing behavior, although not with reported child internalizing behavior. Mean scores for internalizing behavior were lower for Secure parents than Avoidant and Disorganized parents. For both internalizing and externalizing behavior, Disorganized parents have children with the highest scores, and the children of Secure parents had the lowest scores.

One question that arises from these results is whether the parent's caregiving patterns tend to influence their perception of the child or vice-versa. We would suggest that the association between child attachment pattern, caregiving pattern, and the child's internalizing and externalizing behavior fit together. Secure children with Secure parents may occasionally display difficult behavior, but are more likely to go to their caregiver

for help and soothing, and caregivers are more likely to be effective in providing comfort and support. Avoidant children tend to inhibit their emotional needs in times of distress and mislead caregivers about their needs, often drawing attention away from the relationship. Insecure parents are unlikely to respond sensitively to emotional cues, which often leads to acting out behavior. Disorganized children may act in ways to control the parent and take charge of the relationship, or may be affectively dysregulated or fearful. Disorganized parents are more likely to abdicate their caregiving role, allowing the child to lead the relationship in a complex dyadic interplay. Disorganized children tend to have many emotional needs that are not well regulated, and an avoidant parent is unlikely to attend to these, which causes the child to become more dysregulated or controlling, which may also help to explain the number of Disorganized children with an Avoidant parent.

Parental Reflective Functioning and Child Behavior

Caregivers who had a moderate degree of PRF reported the highest levels of internalizing behavior. It is possible that caregivers with low PRF are less aware of their child's internalizing behavior or more likely to idealize the child or brush over any behavior that is not highly disruptive. Caregivers with higher PRF tend to be more aware of the child's inner life, and their understanding may lead to supportive responses, causing the child to have fewer internalizing problems, as the child feels understood and able to express needs more directly.

Caregivers with low PRF reported the highest levels of externalizing behavior in their children, while caregivers with high PRF reported significantly fewer externalizing problems. Again, this is likely related to the caregiver's ability to be aware of, and to help

the child with emotional needs, leading to fewer behavior concerns. A parent who is able to empathically and accurately reflect on the child's experience is more likely to respond in an effective way based on their awareness and understand. This leads to better outcomes in terms of child behavior, and should be a significant part of intervention with caregivers.

Limitations

The information gathered in this study is primarily with foster and adopted children and may not be reproducible among low-risk samples of parent-child dyads in middle childhood. As a clinical sample, we had an unusually high number of children with Disorganized or Avoidant attachment classifications, which is quite different from studies with low-risk populations or non-clinical foster and adopted children (van den Dries, Juffer, IJzendoorn, & Bakermans-Kranenburg, 2009; Van IJzendoorn et al., 1999). Caregiver behavior also indicated a higher number of insecure caregivers than other studies have found (Britner, Marvin, & Pianta, 2005).

No longitudinal data exists on these children that would help us to recognize consistency or change in patterns over time. Both longitudinal data and qualitative data should be collected and analyzed in the future to better understand patterns of behavior and connections between the various measures.

Another challenge with this study was that both child and caregiver classifications were derived from the same assessment using the same coders, so are not truly independent ratings. Although there was an attempt to code these separately, nonetheless, we do believe that much of attachment and caregiving is a dynamic dyadic process of interaction, so certainly the behavior of child influences the parent and vice-versa.

Further studies should be done using separate recordings or different coders for child attachment and caregiving behavior.

Conclusion

The findings from this study are exciting for several important reasons. Not only are caregiver classifications and child attachment classifications strongly associated, but there is also an association with the separate measure of PRF. This lends moderate to strong support for using the modified MSSP with older children, and children who are high risk. These results provide additional evidence that parental reflective functioning and caregiving behavior are important and related, but also support the usefulness of observing behavior during the middle childhood years. With so many current practitioners focusing entirely on behavioral principles or on representation of attachment, combining these approaches acknowledges both the inner working of the caregiver and child, while observing the actual moment to moment interaction that occurs. It also helps to capture interactions where caregivers show awareness of their child's state and respond automatically and non-verbally, and that may not be recognized with any other measure (Zeegers et al., 2017).

For children who have had a history of trauma, loss, and familial chaos, changing these behavioral patterns as a result of sensitive and secure caregiving behavior is critical for intervention. This study highlights the need for caregivers to become more reflective about their child's behavior, allowing their awareness and understanding to change their actual behavior with the child, as they guide the parent-child dance of attachment, leading to healing and security.

Using an observational procedure such as the MSSP allows the researcher or clinician to have rich descriptive information about interactional patterns of security, avoidance, and disorganization. This goes beyond a simple classification, in that the actual observable moment to moment interactions can be used or translated into practical intervention with caregivers. This process provides an opportunity for the caregiver to reflect on the behavior and experience of themselves and their child with a clinician who supports them in exploring new ideas and experiences, while welcoming feelings of distress. In this way, intervention is more than teaching parenting skills, but instead provides an experience that serves to increase PRF and transform caregiving behavior, leading to attachment security. Caregivers can learn about their strengths in caregiving and recognize when their own behavior is complementary or helpful to the child. They also can recognize their own struggles and limitations and where they may be missing the child's need or responding in ways that are not helpful. As clinician and caregiver watch together and co-reflect on what they are seeing, this can lead to powerful results regarding the caregiver's conceptualization of the child's emotions and behavior, as well as their own.

These results are also useful for informing foster care prevention and training. Considering the importance of attachment-facilitating caregiver behavior and parental reflective capacity, the child welfare system would do well to prioritize these aspects of caregiving in order to create stronger and more stable placements. Finding approaches that will help increase potential caregivers' reflective functioning will help families provide more secure relationships for children in their care. Also, an observational procedure like the one used in this study can be provided early in the child-caregiver

relationship to help identify automatic attachment and caregiving patterns and results can be used to individualize treatment, leading to a decrease in problematic child behavior and parental stress.

The field of attachment was built on ethological foundations of observing human behavior and seeking to understand the meaning behind it. Although the move to representation was an important one that helped us to explore the depth of human experience and attachment, it is critical that we not leave behind the skill of observation as we seek to understand and intervene. Marilyn vos Savant is often cited as stating, “To acquire knowledge, one must study, but to acquire wisdom, one must observe.” Although likely intended for a more general audience, as researchers and clinicians, we would do well to remember this principle, as we combine study and observation with the goal of gaining a deeper understanding of the intricate and foundational processes of attachment.

Recommendations for Further Study

Additional studies, with larger samples, are needed to establish validity and reliability for using an observational procedure to assess attachment for children in the middle childhood years and their caregivers. Test-retest reliability could be done by repeating the measure again after 3 months, and having it scored by a someone without knowledge of the original classifications. In-home observations, along with the laboratory procedure (MSSP), would be an important way of providing further validation of the classifications that are gleaned from the MSSP and would also help to pinpoint and describe developmental changes that can be observed during the middle childhood years. Additionally, coding of the AAI for each caregiver should be conducted to look for the association between caregiver AAI, PRF, and observed child and caregiver classification

in the MSSP. Dozier, et al., (2001) found that foster parents' own state of mind in regard to attachment on the AAI was one of the strongest predictors of whether a foster child will become securely attached to them, and this data would likely add strength to the results of this study. It would also be valuable to see how child classifications are related to other types of child functioning and an autobiographical interview measure of attachment like the FFI (Steele, Steele, & Kriss, 2009) or the CAI (Schmueli-Goetz, Target, Fonagy, & Datta, 2008), and to consider the child's time spent in the current home, and the age that they were first placed in foster care.

Given the high rates of disorganization in this study, there is also a need to explore this construct further, especially among the foster and adoptive population. How do the different types of disorganization manifest in the middle childhood years and what parent and child variables are they associated with? The MCDC has had promising results in assessing various scales related to disorganization in childhood (Bureau, Easterbrooks, & Lyons-Ruth, 2008), and may serve to be a helpful tool in considering disorganization in the foster and adoptive population.

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