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Entitled Child Attachment Security, Attachment Representations and Social Competence in Early School Years

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CHILD ATTACHMENT SECURITY, ATTACHMENT REPRESENTATIONS AND  
SOCIAL COMPETENCE IN  
EARLY SCHOOL YEARS

A Dissertation

Submitted to the Faculty

of

Purdue University

By

Garene Kaloustian

In Partial Fulfillment of the

Requirements for the Degree

of

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## ABSTRACT

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The purpose of the study was to examine the association between attachment security (as assessed with scores derived from Q-sort descriptions of the child's interactions with the mother), attachment representations (as derived from children's verbal narratives) and social competence (as reported by mother, teacher and friend) in a normative sample of 39 dyads with children between 6-7 years of age. Attachment security, attachment representations, and mother reports on social competence (SCBE) were associated. Gender differences were identified in mother and teacher reports on child social competence. The mediating role of attachment representations was examined in the association between attachment security and social competence. Attachment representation partially and significantly mediated the association between attachment security and social competence. Security however, significantly predicted social competence even after entering representations last into the model. Findings, limitations and future directions were discussed.

## CHAPTER 1: INTRODUCTION

Early attachment relationships have been hypothesized to impact an individual's development. Specifically, Bowlby (1982) stated that child-mother attachment relationships will influence a child's interactions and relationships with others and that those early relationships will impact children's representations about the world. This paper will explore two areas in attachment for which research has been lacking. First, although there is substantial empirical support for the link between infant attachment security and children's socialization outcomes, there still remains a gap in the literature that points to the lack of research conducted on attachment processes and socialization outcomes beyond infancy i.e., in preschoolers (e.g., Cicchetti, Cummings, Greenberg, & Marvin, 1990; Crittenden, 1992; DeMulder, Denham, Schmidt, & Mitchell, 2000). Only recently has there been attention directed to the origins of and factors affecting the development of social competence in preschool age children (Rose-Krasnor, Rubin, Booth, & Coplan, 1996; Russell & Finnie, 1990).

Second, as a result of the lack of empirical support for the said link in preschoolers, the mechanisms through which this transfer of interactions from attachment relationships to social competence, if it does take place, are not so apparent. One such mechanism proposed by attachment theory is concerned with the construct of internal

working models of attachment (Bowlby, 1982). This refers to mental representation of information about attachment relationships. In fact, very few researchers have attempted to examine the representational processing of attachment-related information in the preschool years (Miljkovitch, Pierrehumbert, Bretherton, & Halfon, 2004).

Using attachment as the theoretical framework, the first objective of this study is to examine the relationship between preschoolers' attachment security derived from children's secure base organization, and children's socialization outcomes (i.e., social skills when interacting with peers; Ladd, 1992; Rudolph, Hammen, & Burge, 1995). The second objective, given the assumption that children learn interaction skills used in other social arenas by participating in secure/insecure relationships, is to investigate the associations between secure base behavior and internal working models of attachment relationship, and their ability to predict socialization outcomes with peers in preschool. Those representations are an important concept as they have been suggested to be a mechanism through which early family socialization patterns may be transmitted to other relations (e.g., peer relations).

In line with theoretical predictions, it is expected that during the preschool year's children's (1) organization of secure base behavior will be found to be associated with ratings of social interactions in the preschool setting; and (2) attachment representations will be associated with (a) their organization of secure base behavior and (b) their social interactions in preschool settings and further, (3) it is expected that attachment representations will mediate the associations between secure base behavior organization and social interactions.

There are various reasons to address these issues. As the child's social world begins to expand beyond the family environment during the preschool period, children's social skills become a critical developmental goal (Cole & Zahn-Waxler, 1992; Denham, 1986; Denham & Almeida, 1987; Harrist, Pettit, Dodge & Bates, 1994). Researchers have suggested that young children develop social (and emotional) competence through interactions with others in two major contexts in which they spend time: home – e.g., parent-child relationships, and preschool – e.g., peer relationships (e.g., Anthony, Anthony et al., 2005; DeMulder et al., 2000). Of interest here is the idea that parent-child relationships are an important factor contributing to peer interactions and relationships. Moreover, relatively recently, researchers have speculated that children's social interaction skills derive in large part from both the quality of maternal care and attachment security (Cohn, 1990; Kerns, 2000; Rose-Krasnor et al., 1996).

In summary, the specific model that I am proposing is the link between attachment security, attachment representations and social competence. From early experiences with his/her significant relations, the child learns how to handle situations in the 'home' environment e.g., negotiating problems, finding solutions to conflict situations. When child moves to the school setting, a major developmental task for the child is to manage adaptation within social interactions while successfully moving into the world of peers (Waters & Sroufe, 1983). Sroufe and others have suggested that there is continuity in adaptation across key developmental stages, including during the transition from early home environment to the preschool depending also on the child's attachment history.

The development could be explained by referring to the mediating role of the child's internal working models developed in early significant caregiver relations that

could have a substantial influence on social behaviors that emerge in early/elementary school years. For example, a child with a history of secure attachment to parents, reflecting a perception of relationships as mutual and supportive, may be empathic, responsive, and invested in their peers and caregivers (e.g., Sroufe & Fleeson, 1986). Early parent–child relationships where the child may have experienced insensitive care, where needs were unmet (i.e., traits of an insecure attachment) may have the expectation that other relationships will have these characteristics as well.

It is through repetitive interactions with significant others, that the child organizes representations that become prototypical scripts of relations experienced in the home (e.g., mother, father, siblings, grandparents, relatives). These representations are a way of elaborating these experiences and are used when coping with similar situations in a different context where the child establishes patterns of relationships. These latter are likely to include the types of interactions with primary caregivers, contributing thus to a sense of coherence within the self (Sroufe, 1992). Those working models are assumed to provide a mechanism through which the relationship with the attachment figure can continue to have its influence on the child’s adaptive competence in situations in which the attachment figure is not present (Rose-Krasnor et al., 1996).

Delving further into attachment issues during the early school years may be a necessary step if one is to understand the links between attachment security and other socialization outcomes, and the mechanisms through which those relationships may impact other interactions and relationships. In addition, through this study, I hope to provide further support to the literature in better understanding connections between security, representations and social competence conceived as a product of interactions

between parent-child, as opposed to conceiving other alternative hypotheses. For example, those interactions with both mothers and peers are child-driven, that is, due to child characteristics, e.g., temperament. The nature of this study, including assessments of child's secure base behaviors with mother, assessment of their representational narratives, and multiple raters to report on child's social competence may add some insight into the proposed model versus the alternative hypothesis.

## CHAPTER 2: LITERATURE REVIEW

### *Attachment Security and Social Competence*

Attachment theory is unique in that it emphasizes a child's social/emotional adaptation in the context of ongoing interpersonal relationships. Indeed, some of the most compelling evidence that children's relations with peers (as well as teachers and adults) are associated with the underlying quality of the infant-mother relationship has been inspired by the formulations of attachment theory (Cohn, 1990; Ladd, 1992). Studies have in fact suggested that children engage in qualitatively different social interaction with peers depending upon the quality of their attachment relationships with their mothers, and a significant body of literature supports the association between infant attachment security and children's peer interactions (e.g. Cohn, 1990; Kerns, 1996, 2000; Lieberman, 1977; Park & Waters, 1989; Youngblade & Belsky, 1992).

Numerous studies have shown that the infant-mother attachment relationship is significantly associated with important social outcomes in early and middle childhood and that infant attachment patterns can help predict behaviors in the preadolescent years such as their levels of peer competence (Shulman, Elicker, & Sroufe, 1994). Longitudinal studies using Ainsworth's Strange Situation have consistently shown associations

between the quality of the infant-mother attachment relationships and social interactions with peers (e.g., Cohn, 1990; Lieberman, 1977; Pastor, 1981). Securely attached infants engage in more positive interactions with peers as toddlers, and are recipients of more positive behaviors from peers than infants whose attachment relations with their mothers had been insecure (Cohn, 1990; Park & Waters, 1989; Pastor, 1981; Youngblade & Belsky, 1992).

Other findings still, indicate that security in the infant is related to the way children work their way, interact, and maintain their status in the peer group, and how children interact with adults at 1, 3 and 4 years of age (e.g., Kerns, 2000; Park & Waters, 1989). Empirical evidence has also shown that children's ability to maintain acceptable and positive social interactions during play and their abilities in social problem solving (e.g., the ability to generate alternate solutions for resolving conflict, perspective taking, and knowledge of consequences of one's social behavior) are important skills that have been linked to pro-social behaviour and school adjustment among preschool children (Denham, 1986; Harrist et al., 1994; Kerns, 2000). A considerable number of empirical studies in early childhood have identified coordinated interaction and positivity of social exchanges in secure mother-infant attachments, as being the central dimensions of positive preschooler-peer interactions (Belsky & Cassidy, 1994; Bost, Vaughn, Washington, Ceilinski, & Bradbard, 1998; Kerns, 1996; Youngblade & Belsky, 1992; Youngblade, Park, & Belsky, 1993).

Moreover, compared with insecurely attached infants, securely attached infants have been found to receive more positive behaviour from unfamiliar peers, or to be better liked by peers, and further, to be rated by teachers as more competent with peers, and

with fewer behaviour problems (Elicker, Englund, & Sroufe, 1992; Erickson, Sroufe, & Egeland, 1985; Kerns, Klepac, & Cole, 1996; Youngblade & Belsky, 1992). Conversely, as mentioned above, preschool children who lack the ability to problem solve social situations necessary for successful interactions, not only with family members, but certainly with peers and other caregivers, are more likely to experience problem behaviors and more negative consequences, such as peer rejection, and depression (Cole & Zahn-Waxler, 1992).

In brief, although peer relations constitute a different type of relationship from that characteristic of the affectional attachment system, initial findings show that secure attachment relationships are associated with behaviors that further facilitate the development of competent peer relations (Cicchetti et al., 1990; Hartup, 1983). Infant security has been found to be related to social competence in general, children's resourcefulness when solving problems they encounter, and whether they exhibit behavioral difficulties (e.g., Bost et al., 1998; Elicker et al., 1992; Pastor, 1981). Studies indicate that infants enjoying secure attachments are advantaged in peer groups generally, and specifically in the formation of friendships during childhood and beyond (e.g., Kerns, Cole, & Andrews, 1998; Sroufe, Egeland, & Carlson, 1999); hence the significance of early sound socialization experiences at home, since they may eventually be generalized to other interpersonal contexts, both concurrently and later on in life.

But as evidenced in the aforementioned paragraphs, although infant-mother relationships seem to have clear relevance for social competence, a chief focus has been on *early* attachment relationships with the primary caregivers and subsequent social competence. Although such studies have investigated whether *infant*-mother attachment

predicts or is related to children's competent interactions with peers in preschool, there is little empirical research as to the contribution of parent-child relationships to present interpersonal functioning with peers during the preschool years (Sroufe, 2005; Sroufe, Egeland, Carlson, & Collins, 2005). In fact some authors (e.g. Kerns, 1996; Sroufe, Egeland, & Kreutzer, 1990; Youngblade et al., 1993) have called attention to the importance of studying the relations between the variables during this period since very little data exist on this issue (e.g. Sroufe et al., 1999). It may be that early attachment relationships predict later attachment relationships and these are associated with social outcomes.

Studying associations between attachment security and social competence during the preschool years will probably help dispel inoculation ideas that pose infant security as a safeguard for children's interactions and relationships later on. It is likely that the associations between security and social competence during the preschool years may be due not only to the contributions of early experience, but also to the influences of the child-mother relationship during the preschool years, as this study proposes to examine.

#### *Child Attachment Representations*

The second objective of the proposed study is to investigate a mechanism through which attachment behavior organization is suggested to transfer to child-peer interactions during the preschool years. Secure base relationships transition from a sensory-motor to a representational form of operation during early childhood. Symbolic representational systems undergo rapid development and become available, and preschoolers' experience base expands developing thus more complex and differential models of the self, of other, and of relationships (Bretherton, 1985; 1990). Children are now busy constructing

working models of how the physical world, their mother and other significant persons, and they themselves may be expected to behave, and how each interacts with the other.

Bowlby (1973) suggested that representational models of relationships are central to personality development because they play a key role in the process through which early infant-parent relationships affect the child's subsequent relations and later child functioning more generally (Cassidy, Kirsh, Scolton, & Park, 1996). Working models are presumed to serve as knowledge bases that organize early relationship experience with the primary caregiver and eventually lead to specific and generalized information about self, others, and relationships, and as organizational systems that guide the active processing of interpersonal information (Bretherton, 1990; Cicchetti et al., 1990; Miljkovitch et al., 2004).

Hence, since internal working models are believed to reflect experienced interaction patterns between the attached individual and his or her attachment figure(s), the developing working models of self and of attachment figure(s) are complementary; "on the structure of these complementary models...the child's (preschooler) forecasts of how accessible and responsive his attachment figures are likely to be should he turn to them for support" (Bowlby, 1973, p. 203). It is within the framework of the working models of a child's attachment between his mother and himself that he evaluates special aspects of his situation and makes his attachment plans (Bowlby, 1969/82). These experiences and expectations within the child's working models are then carried forward and are used to select and shape certain behavioral and interactional patterns in other relationships or situations (Bretherton, 1990, 2005; Bretherton & Munholland, 1999; Bretherton, Ridgeway, & Cassidy, 1990; Bowlby, 1969/82; Crowell et al., 1996; Fonagy,

Steele, & Steele, 1991; George & Solomon, 1999; Ladd, Le Sieur & Profilet, 1993; Sroufe & Fleeson, 1986).

Attachment researchers maintain that maternal care-giving is essential in co-constructing/enhancing infants' attachment related information and influencing secure base organization at the behavioral level. For preschoolers however, care-giving is expected to influence behavior organization, as well as the ways children organize and represent attachment related information mentally and verbally. These representations are useful in appraising and guiding child's behavior in new situations. For example, if an attachment figure frequently rejects or ridicules the child's bids for comfort in stressful situations, the child may come to develop not only an internal working model of the parent as rejecting but also one of himself or herself as not worthy of help and comfort.

Conversely, if the attachment figure gives help and comfort when needed, the child will tend to develop a working model of the parent as loving and of himself or herself as a person worthy of such support (Bowlby, 1973). It is through his daily transactions with the mother that the child constructs increasingly complex internal working models of that world and of significant caregivers (Bowlby, 1969/1982, 1973). If, as Bowlby suggests, those internal working models frame how the child "sees" relationships, attachment representations may play a crucial role in understanding the associations reported between security and social competence. This study provides an initial empirical test of such an association.

*Assessing Child Secure Base Representations*

The transition from behavior to symbolic representation has allowed researchers to look beyond the scope of observational assessments and to focus more towards developing assessments of individuals' attachment internal working models in preschoolers (Bretherton, Ridgeway, & Cassidy, 1990; Cassidy, 1988; Main, Kaplan, & Cassidy, 1985; Waters, Rodrigues & Ridgeway, 1998). The assessment of internal working models however poses great challenges to researchers. Representational processes cannot be seen through direct observation (Main et al., 1985). Narrative techniques have been developed to get at attachment representations. Underlying this technique is the notion that internal working models determine key characteristics of an individual's attachment-related narratives, and thus, these are supposed to reflect her or his attachment representations.

It is argued that storytelling has become a useful approach for studying the "inner worlds" of preschool aged children, and examining how young children appear to understand the world around them (e.g., Emde, Wolf, & Oppenheim, 2003; Green, Stanley, Smith, & Goldwyn, 2000; Oppenheim, 1997). The narrative assessments used with children range from interpreting presented pictures or three-dimensional enactments (Cassidy, 1990; Main et al., 1985) to more open-ended procedures such as completing story stems (Bretherton, Ridgeway, & Cassidy, 1990; Cassidy, 1988). Attachment researchers using a narrative technique have shown that in their story completions, young children develop meaningful portrayals of parent-child interactions (e.g., Bretherton, Prentiss, & Ridgeway, 1990). At the same time, they have also shown that children's story completions relate to actual observations of parent child interactions (e.g., Bretherton, Prentiss, & Ridgeway, 1990; Cassidy, 1988; Waters, et al., 1998).

Relatively recent studies have begun to examine the validity of different methods to assess attachment-related representations. In a group of 3-year olds, securely attached children, as per the attachment q-set, were more likely than insecurely attached children to tell coherent doll stories in which the parents were protective and empathic (Bretherton, Prentiss, & Ridgeway, 1990). Main and her colleagues (1985) reported that in a sample of 6-year olds, children who had been securely attached to their mother as infants were more “emotionally open” and had representations of more competent responses to separation than children who had been insecurely attached. In a separate sample of 6-year-olds in which representations of “the self within the relations with the attachment figure” were examined, children securely attached to mother at age 6 were more likely than insecurely attached children to represent a child story protagonist as valuable and worthy, and the relationship with the mother as important and warm, and serving as a secure base in times of trouble (Cassidy, 1988).

Overall, the new approach to assessing attachment representations in children via narratives is based on the idea that event schemas or scripts guide representational processes, and that they contain information about repeated similar events in an individual’s life (Bretherton, Ridgeway, & Cassidy, 1990). According to these authors, toddlers’ pretend play and verbalizations about emotion show that information about daily events in their interactions with the caregiver is available in a schematic form. For example, when a two-year-old child plays separation-reunion situations with dolls, he or she may be showing his or her working model of actual experiences with parents.

Schank and Abelson (1977) introduced the concepts of scripts, plans and goals to handle story-level understanding. They defined a script as “a predetermined, stereotyped

sequence of actions that defines a well-known situation . . . a structure that describes appropriate sequences of events in a particular context” (p. 41). Specifically, scripts define the actors, actions and props that are needed to reach that goal within specified circumstances, e.g., going out for dinner or a birthday party (Nelson, 1986).

Indeed, research suggests that events are understood in terms of scripts, plans and other knowledge structures derived from previous experiences (e.g., Fivush, Kuebli, & Clubb, 1992; Schank, 1986). Since scripts are the result of experience in a particular context, adults are the ones that guide and direct this learning in their interactions and conversations with their children who learn the script even as they act within the scripted event (Nelson, 1993, 1996; Nelson & Fivush, 2000). According to Nelson, partial knowledge of the script supported by the knowledge of others is sufficient to guide action and interaction and to lead to more complete acquisition (Nelson, 1986, 1993). Moreover, children’s verbalizations should show a general form indicated by the use of general terms for things that may vary from one occasion to another or with age and experience.

Furthermore, since the scripts may reflect the underlying cognitive structure i.e., organization of representations, they should be consistent from one time to another for a given child. This means that the same sequence of events should be expected to be found in each occasion (Fivush et al., 1992). This knowledge in turn may allow the child accessibility to verbal description, reflecting certain basic characteristics of the script model (Bretherton, 1993; Nelson & Gruendel, 1986). If aided by props, preschool children can capably describe these routine events (Bretherton, 1993; Oppenheim, 1990).

Using the secure base phenomenon construct and Nelson’s script theory, H. Waters and colleagues (1998) suggest assessing the secure base scriptedness of

information regarding attachment relationships. Based on Oppenheim and Waters (1995) insightful critique on existing attachment research, that attachment representations has used criteria that mix content of narratives and the child's emotional style of communication, thus not addressing the issue of organization of information, Waters et al proposed that secure base scripts are a central feature of mental representation organization in that they presumably reflect the typical experiences in the particular domain of attachment relationships. These scripts consist of "specific cognitively based characteristics that would have to be scored for presence or absence in secure children's story completions" (Waters et al., 1998; p. 213). According to these authors, the balance between proximity seeking and exploration can be summarized in terms of a prototypic secure base script.

Based on Ainsworth's work on child-mother interaction, those authors defined the key components of the secure base script as (a) the child exploring away from the caregiver, (b) child maintaining contact or returning when necessary, (c) some difficulty or threat arising, (d) caregiver approaching or child seeking proximity, (e) dealing with the difficulty, (f) and the caregiver enabling the child to return to exploration. Children participating in secure attachment relationships with their mothers are suggested to produce a clearly scripted narrative illustrating the secure base phenomenon based on their own experiences.

In their pilot study, Waters and colleagues point to important associations between children's (37 and 54 months old) narratives about attachment and both concurrent and earlier observational assessments of attachment behavior. The secure base narrative or secure base script technique thus pursues relevant script-based features in children's story

productions and gives information about the organization of underlying attachment representations leading to a more detailed, cognitively based understanding of attachment internal working models.

This project used this new approach to assess attachment related representations in testing the role of internal working models as a mediator of the associations between attachment security and socialization outcomes.

In sum, although attachment patterns established in infancy have been found to play a significant role in social competence with peers in the preschool and middle school years, the significant association between attachment security and social competence is a finding that still needs to be explained. It is not entirely obvious how security in infancy translates into smoother child-adult and child-peer interactions in preschool years, and little to no empirical research has examined whether attachment representations are in fact associated with child socialization outcomes. The goal of this study was to explore further the possible association, if at all, between secure base representations and social competence during the preschool age, and the potential role as a mediator of those representations in the relations between secure base behavior organization and social competence.

## Research Questions and Hypotheses

### *Research Question 1:*

Is there an association between child's attachment security (as derived from naturalistic observations of child behavior during child-mother interactions) and social competence (as reported by teachers, mothers, and friends' mother)?

Hypothesis 1: Attachment security is significantly and positively related to preschool children's social competence.

### *Research Question 2:*

Are attachment representations (as assessed via narratives) associated with (a) attachment security and (b) child's social competence in the school setting?

Hypothesis 2a: Attachment representations are significantly and positively associated with child's attachment security.

Hypothesis 2b: Attachment representations are significantly and positively associated with children's social competence.

### *Research Question 3:*

Do attachment representations mediate the association between attachment security and social competence?

Hypothesis 3: Attachment representations mediate the association between attachment security and social competence.

A test for the mediating role of attachment representations between attachment security and social outcomes can be considered if the following three conditions are met: (1) A significant association between attachment security and social competence, (2) a significant association between attachment representations and social competence, and (3)

a significant association between attachment security and attachment representations. If the conditions are met, I will investigate whether entering scriptedness last into the regression model, controlling for attachment security, will render the association between attachment security and social competence non-significant or significantly reduces the association.

## CHAPTER 3: METHOD

### *Participants*

This sample is part of a longitudinal study with data collection at two time points. For the purpose of this study, only the sample from Time 2 was considered. This study takes advantage of similar studies (Posada, Kaloustian, & Bárrig, 2007; Waters et al., 1998) that have been conducted on mother-child attachment relationships but elaborates further in examining the associations between attachment security, attachment representations and social competence in preschoolers.

From a sample of 42 dyads at Time 2, a total of 39 mother-child dyads volunteered to participate. Two families had moved abroad and one family did not wish to participate. Children were from intact families and were all in some form of non-parental care. There were 21 girls and 18 boys. The sample was from predominantly upper-middle class American Caucasian families, and 2 families with different ethnicities: Turkish and Ukrainian; these latter two families were perfectly fluent in English.

Mother-child pairs were recruited from preschools in the Greater Lafayette area. Primary recruitment sites included local preschool and daycare organizations (e.g., Purdue Child Care Center, Private Church Preschools, Kindergarten from Lafayette and West Lafayette School Corporations). The average age of children at Time 2, when attachment security and representations was assessed was 5.5 years and the average age of children

when social competence data was gathered was 7.7. The average age of mother was 36.2 years, ranging from 26 – 51 years and the average years of education for mothers was 16.9 ranging from 12 – 21.5 years (completion of high school degree to Ph.D). The average household income of these families was \$88,206. The demographic characteristics of the sample are reported in Table 1.

Table 1

*Descriptive Statistics for Demographic Variables*

<i>Variable</i> ( <i>N</i> = 39)	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
Child Age	50	81	66.03	7.39	.12	-.30
Mother Age	24	49	35.85	4.89	.21	.80
Mother Education	12	21.5	16.94	1.98	.45	.83
Household Income	25,000	190,000	88,206	39,044	1.11	1.21

*Note.* Mother education levels and mother age were given in years, child's age in months, and yearly income in U.S. dollars.

*Procedures*

At Time 2, families were re-contacted by phone and invited to participate in the second round of data collection. If they agreed, a first home visit was scheduled according to a convenient time for the family; morning, afternoon, and week-end visits were all possible times for these families. Upon arrival, research assistant obtained consent (See Appendix A) from the mother prior to continuing with the visit. The mother was then asked to provide some socio-demographic information, such as name of child's day care, number

of years in day care, primary caregiver, ages and job for both the mother and husband and other siblings in the household.

Part of the home visit was unstructured; mothers were instructed to go about their activities and interactions with their child as they would in their daily activities. Most of the families had other children but observations were specifically focused on target child's interactions with mother. During this time, two observers observed the child's interactions. An hour into the visit, the mother and child were asked to bake cup-cakes together. After that activity, the child was given the Story Completion Task (SCT). It was important to conduct the activity with no distractions e.g., other siblings, mother, sounds. Therefore, the activity was usually done in the basement or the dining room, where the door was closed and the child could concentrate on the activity; this procedure was video-taped and lasted approximately 20 minutes. After completion of the SCT, the Peabody Picture Vocabulary Test was also implemented. Upon completion of the visit, research assistants returned to the lab and independently completed the Attachment Q-Sort describing child's secure base behavior during interactions with his/her mother.

The dyad was then contacted a second time to schedule a park visit, on average, 2.2 months after the first visit. Two families were unable to participate because of their conflicting schedules and the winter season in place, and ended up participating 8 and 11 months later. The park visit required going to the dyads' home for approximately 10 minutes, after which time research assistants followed the dyad to the playground of the dyad's choice. Usually, siblings would also go to the park; however again, observations were specifically focused on target child's interactions with mother. At the park, mother and target child were given microphones to wear throughout the visit, and this visit was

audio-taped and video-taped. The park visit was unstructured; mothers were instructed to go about as they normally would with their child at the park. Observers were allowed to interact with child during the visit. This visit lasted approximately 1 hour. After completing the visit, research assistants returned to the lab and independently completed the Attachment Q-Sort describing child's secure base behavior.

Given the few number of observers, it was possible that an observer who observed the child during the first visit would observe child during the second visit. However, at no time did a mother observer also observe the child.

Within an average period of 2.3 years, data for child's social competence was collected. At this time, mothers were contacted about gathering reports from mother, teacher, and friend's mother, on child social competence. The mother was asked if she would be willing to participate in reporting on her child's interactions with other children and adults. The mother was also told to ask a friend who knew the child, to report about the social behaviors of the child. Once the mother agreed, a time was scheduled to visit the home, obtain consent, and leave the questionnaires required to be filled out; the mother was informed that the questionnaires would be picked up within a week of drop off.

If, by this time the mother had received an acceptance of participation from the friend to fill out the questionnaires regarding the target child, she was asked to provide the friend's information to be contacted personally. The friend was contacted by phone and a time was scheduled to visit her home. She was given the consent form and instructions about filling out questionnaires and was informed that the questionnaires would be picked up within a week of drop off. Out of the 39 dyads, only 35 friends responded. Two friends

were given the questionnaires but did not respond upon several contacts thereafter, and two friends did not show further interest in participating after having made initial contact.

Second, the directors/principals of the target child's preschool centers and schools were contacted to explain the project, and request their permission to contact the target child's teachers. With the superintendents/principal's signed approval, the teacher was contacted. Once the teacher agreed to participate, a time was scheduled to meet with her. Teacher's consent was obtained; instructions about filling out the questionnaires were given and were left with her to be filled out. The teacher was informed that the questionnaires would be picked up within a week of drop off. The participation of teachers was all but one teacher ( $N = 37$ ); this teacher received the questionnaires but did not find time to fill them and did not respond to contact thereafter. Another child was home-schooled and thus had no teacher. The mothers, teachers and friends were compensated monetarily (\$10) for their time.

### *Measures*

*Attachment Q-Sort (Appendix B).* The organization of children secure base behavior was assessed with the Attachment Behavior Q-Set (AQS; Waters, 1995). This 90-item q-sort is used to describe child's behaviors relevant to the use of the parent as a secure base in naturalistic contexts. The AQS has been validated and reported in various studies e.g., Posada and colleagues (1999) studied children who ranged in age from 12-60 months, in a low income sample and found significant associations between quality of maternal caregiving behavior in an emergency situation and attachment security. The AQS has also recently been validated in another 2-part study conducted by Posada and colleagues (2007) examining the association between maternal secure base support and preschoolers' secure

base behavior and found significant and positive associations in both studies ( $r = .31, p < .05$  and  $r = .49, p < .01$ ). Validity of the AQS has also been supported by a meta-analysis of 128 studies by van IJzendoorn, Vereijken, Bakermann, & Riksen-Walraven, (2004).

The AQS was based on and completed after the home visit and after the playground visit conducted by trained observers; due to the limited number of observers, two observers would score the child on one visit and one observer for the child on the other visit. There were 2 child observers on 25 park visits and 27 home visits and 1 observer for 14 park visits and 12 home visits.

Observers were trained graduate and undergraduate students who sorted the items along a continuum from “least” to “most” descriptive of the child using a forced distribution (10 items in each of 9 categories). Observers were considered trained when they obtained an inter-observer reliability with an expert observer of at least .70 on three child-mother interaction tapes. Mean inter-observer reliability based on the agreement between the descriptions for home was .77 (range .60 to .89) and for the park .76 (range .58 to .89). After each visit and once inter-observer reliability was computed, items discrepant by more than three points were discussed and revised by the two observers. A composite description was created by averaging the observers’ descriptions for each context. Observations of child attachment security at home and park were significantly and positively ( $r(37) = .47, p < .01, 1$ -tailed). An aggregated description was computed by averaging home and park descriptions.

AQS composite descriptions were scored on a continuum of security by correlating them to a criterion sort of a child who optimally uses his caregiver as a secure base. The correlation index obtained indicates how similar a child’s behavior description is to the

secure base phenomenon. That correlation was the child's security score and was used for analyses.

*Child's Secure Base Representation - Scriptedness (Appendix C).* Children's cognitive organization of secure base relationships knowledge was evaluated with the MacArthur Story Stem Task during the home visit (Bretherton, Oppenheim, Buchsbaum & Emde, 1990). The MacArthur Story Stem was used to elicit narratives relevant to the use of caregivers as a secure base. Three stories relevant to secure base relationship content were presented to the child (Spilled Juice, Hurt Knee, and Monster in the Bedroom).

The story stems were accompanied by a culturally appropriate doll set that included a mother, a father, a younger brother or sister, and an older sibling, and were enacted in a three-dimensional display. The child in the enactment was the younger doll figure. The two child dolls were always of the same sex as the participant. The story stems task began with a warm-up story, the "birthday party" to ensure that the child understood the procedure. After presenting children with the story stems, they were asked to show and tell what happened next in each story. The story stems were as follows: 1. Spilled Juice: While the family is seated at the dinner table, the younger child accidentally spills juice on the table, and the mother makes a stern remark about it; the attachment figure here is seen as an authority figure in relation to the child. 2. Hurt Knee: While the family is out at the park walking, the child climbs up a rock, falls and hurts his/her knee and cries; pain is used as an elicitor of attachment and protective behavior. 3. Monster in the Bedroom: It is bedtime and child is asked to go up to bed. Child goes up to his/her room and cries to mummy and daddy that there is a monster in the room; fear is used as an elicitor of attachment and protective behavior.

The task lasted 15-20 minutes and was videotaped. Narratives were obtained from transcriptions of the tapes. An adaptation of the MacArthur Story Stem coding procedures (Waters et al., 1998) was used to score the narratives obtained. The narratives produced were evaluated on a 3-point scale for scriptedness derived from the system described by Waters et al. These authors presented data in support of the validity of the coding system. Further validity information for the system was found in a study with 50 4-year olds (Posada et al., 2007) in which scriptedness scores were significantly related to children's secure base behavior as per the AQS.

I was trained by H. Waters, expert in coding the MacArthur Story Completion Task. I then trained graduate and undergraduate students on coding procedures. Instructions were provided, and example stories were coded as practice among 3 coders and myself and discussed. Observers were considered trained when obtaining 90% agreement on 7 sets of 3 stories (Hurt Knee, Monster in the Bedroom, Spilled Juice).

Each story was coded independently from (i.e., coders were blind to) other information about the child; since the scale ranged from 1-3, any story discrepant by 1 or two was discussed; disagreements were resolved by reviewing the stories among coders. The scores were averaged for each story across the 3 scorers. The scores were then averaged across the three stories to a single composite score (average scriptedness) and used for analyses. In one case, sound was not recorded and thus stories were not coded for that subject. Kappa scores for inter-observer reliability between three observers were .87 for the Hurt Knee, .90 for Monster in the Bedroom, and .92 for Spilled Juice.

*Mother, Teacher, and Mother's Friend Reports of Child's Social Competence.*

These assessments were intended to provide a social competence perspective for each child from difference reporters.

*Social Skills Rating System (SSRS) (Appendix D & E).* The SSRS provides a broad, multi-rater assessment of student social behaviors (Gresham & Elliott, 1990). These standardized, norm-referenced scales may be used with preschool, elementary, and secondary students. The SSRS obtains ratings of the perceived frequency of social behaviors influencing the student's development of social competence and adaptive functioning at school and at home, as per the authors. The SSRS uses parent, teacher, and student forms to sample three domains; social skills, problem behaviors and academic competence. However, since each form of the SSRS may be used separately or in combination, only the parent and teacher forms were used for this study and only social skills and problem behaviors were assessed.

The SSRS uses a three-point rating scale ranging from 0 - 2. A rating of 0 means the behavior *never* occurs, a rating of 1 means the behavior *sometimes occurs*, and a rating of 2 means the behavior occurs *very often*. Internal reliability correlates across all forms range from .83 to .94 for the Social Skills Scales, and .73 to .88 for the Problem Behavior Scale. Overall, these correlates indicate a relatively high degree of scale homogeneity (Gresham & Elliot, 1990).

The SSRS has also shown to have high correlations with other social competence measures, such as with the Child Behavior Checklist. The .81 correlation between the SSRS Teacher total Problem Behaviors score and the CBCL Teacher total score supports the construct validity of the SSRS Teacher form. Also the correlation of .70 between the

SSRS Parent total Problem Behaviors score and the CBCL Parent total score suggests that these scales are tapping similar constructs.

In this study, parents and teachers reported on child's social competence on two domains: social skills (40 items for parent forms and 30 items for teacher forms) and problem behaviors (18 items for parent and teacher forms). An overall average score was calculated for each of the social competence domains and used for analyses.

Internal consistency for mother, teacher, and friend reports on child's social skills was  $\alpha = .88$ ,  $\alpha = .91$  and  $\alpha = .85$  respectively. Also, internal consistency was calculated for mother, teacher, and friend reports on child's problem behaviors with  $\alpha = .74$ ,  $\alpha = .88$  and  $\alpha = .84$  respectively.

*Social Competence and Behaviour Evaluation Scale (SCBE) (Appendix F)*. The SCBE-30 is a shortened version of the SCBE-80 composed of three 10-item scales derived from factor analysis: Anger-Aggression (AA), Social Competence (SC), and Anxiety-Withdrawal (AW). There is emphasis on assessing the quality of the child's adaptation rather than sampling only the child's problem behaviors (LaFreniere & Dumas, 1996). High reliability estimates have been found ranging from  $r = .78 - .91$  across three samples. The SCBE has also shown good internal consistency, with Cronbach's alphas ranging from  $.77 - .92$  across three samples (LaFreniere & Dumas, 1996).

For the purpose of this study, only two scales were derived, positive behaviors and problem behaviors. Problem behavior scale was derived from the two 10-item scales aggression and anxiety withdrawal, which were combined into one single scale for the overall measure of problem behaviors. Items are scored on a 6-point scale to indicate the

child's typical behavior or emotional state on a scale from 'never' (1) to 'always' (6) or "Cannot Evaluate".

Internal consistency was calculated for all 10 positive behaviors and 20 problem behaviors on the SCBE - 30. Cronbach's alpha reliability coefficients for mother reports on positive and problem behaviors were .89 and .87 respectively. Teacher reports on positive and problem behaviors were .91 and .85 respectively. And for friends, internal consistency was .81 for positive behaviors and .88 for problem behaviors.

Correlation analyses were also run to examine the strength of association between the two scales. The correlation indices between SCBE and SSRS positive behaviors were  $r(37) = .52, p < .01$  as reported by mother,  $r(36) = .73, p < .01$  as reported by teachers, and  $r(33) = .65, p < .01$  as reported by friends. Correlation indices between SCBE and SSRS problem behaviors was  $r(37) = .63, p < .01$  as reported by mother,  $r(36) = .73, p < .01$  as reported by teachers, and  $r(33) = .73, p < .01$  as reported by friends.

Although the correlation indices indicate that these two measures are related, a decision was taken not to aggregate the SSRS and SCBE into one score for a broader social competence scale. The reason for this was that from these correlation indices, the two seem to tap on different, if related, aspects of social competence. Further, the results section below indicates that it was important and necessary to keep the two measures apart.

*Peabody Picture Vocabulary Test.* The Peabody Picture Vocabulary Test, third edition (PPVT-III), form A, was administered to assess children's verbal ability. The PPVT was important to implement in order to rule out the alternative that verbal skills may account for differences in participants' narrative production. The PPVT-III has been widely

used and many empirical reports support its validity and reliability (Dunn & Dunn, 1997). The procedure of this test consisted of presenting several words and asking the child to point to the picture that best tells the meaning of each word. If the child made 8 or more errors in a section, that was considered the end of the test. The raw score was calculated by subtracting the total number of errors from the ceiling score. Raw scores were used in analyses.

## CHAPTER 4: RESULTS

### *Preliminary Analysis*

Summary statistics (mean, range, standard deviation, skewness and kurtosis) were generated and missing data and outliers, and assumption of normality were examined. The accuracy of the data file was checked by comparing the original data with the computerized file. Descriptive analyses were performed through SPSS. Bivariate outliers were detected in two cases when examining associations between attachment security and mother reports on social competence and representations and mother reports on social competence. In order to decide as how to proceed with the outliers, the following was done: first, the scores for the social competence variable, as reported by mother, were converted to standard scores. Since the sample size was small ( $N = 39$ ), a case was set as an outlier if its standard score exceeded  $\pm 2.5$ . Two outliers were detected, although the standard scores did not exceed  $\pm 2.5$  (i.e. highest standard scores for the two cases were 2.17 and 2.01). However, before deciding whether to retain or omit these outliers from the analysis, the raw data that made these cases outliers were examined. Both cases had low social competence scores as reported by mother, but very high security and scriptedness scores. Such low scores in mother reports on social competence in relation to their security and scriptedness scores was unusual in the distribution. The outliers were excluded and the homogeneity statistics were recomputed. Removal of the outliers made a difference in the analyses, and is

discussed below. Analyses was conducted with a total sample size of  $N = 37$  after omitting the two cases with outliers. Further, missing data from the social skills questionnaires were replaced by total mean scores for each subject, and used for analyses. Descriptive statistics for all independent and dependent variables are presented in Table 2.

#### *Potential Covariates*

Based on parent reports, I also obtained measures of mother education level, mother's age and approximate family yearly income. Gender was also explored as a covariate.

Table 2

*Descriptive Statistics for Independent and Dependent Variables*

<i>Variable</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Child Security	.18	.73	.49	.14	-.70	-.28
Scriptedness	1.33	3.00	2.46	.46	-.34	-.74
PPVT	63	139	113.5	13.9	-1.29	3.82
<i>Mother report</i> ( <i>N</i> = 37)						
SCBE +	3.30	6.00	4.50	.63	.05	-.37
SCBE -	1.35	2.80	1.90	.45	.59	-.80
SSRS +	.89	1.82	1.43	.23	-.46	-.02
SSRS -	.24	1.12	.71	.23	-.10	-.74
<i>Teacher Report</i> ( <i>N</i> = 36)						
SCBE +	2.10	6.00	4.27	.84	-.41	.40
SCBE -	1.00	2.65	1.67	.47	.19	-1.06
SSRS +	.77	1.93	1.45	.29	-1.0	.58
SSRS -	.06	1.50	.47	.33	1.25	1.55
<i>Friend Report</i> ( <i>N</i> = 33)						
SCBE +	2.56	5.90	4.38	.71	-.15	.37
SCBE -	1.06	3.20	1.79	.51	.73	.16
SSRS +	.87	1.68	1.44	.20	-1.0	.73
SSRS -	.18	1.35	.61	.30	.55	-.18

Preliminary analyses investigated whether the variables of interest were associated with mother's education level, mother's age, and family yearly income. No significant associations were found except for a significant negative correlation between mother's age and teacher reports on SSRS positive behaviors. Results are presented in Table 3.

Table 3

*Correlations between Independent and Dependent variables and mother age, education and family income*

Variables	Mother Age	Mother Education	Family Income	PPVT
Attachment Security	.03	-.04	.14	-.22
Scriptedness	-.21	-.22	-.11	.04
Mother Report (N = 37)				
SCBE +	-.16	-.15	-.10	.13
SCBE –	.13	-.27	-.11	-.02
SSRS +	-.21	-.05	.04	.16
SSRS –	.25	.04	.02	-.02
Teacher Report (N = 36)				
SCBE +	-.29	-.09	-.20	.10
SCBE –	.16	-.03	.07	.02
SSRS +	-.36*	-.12	-.16	.08
SSRS –	.07	.25	.13	.02
Friend Report (N = 33)				
SCBE +	-.32	.03	.04	.28
SCBE –	.06	-.07	-.16	-.07
SSRS +	-.25	-.09	.29	.26
SSRS –	.06	.04	-.19	.04

\* $p < .05$

Further, the associations between children's vocabulary (PPVT) scores and scriptedness were explored; results indicated that they were not significantly related ( $r = .15, ns$ ). Gender differences were also investigated and analyses revealed gender differences in mother reports on social competence (SCBE) (see Table 4). Girls obtained significantly higher scores than boys ( $t(34) = -2.10, p < .05$ ). Also, gender differences were detected on teacher reports on SSRS negative behaviors (see Table 4). Girls obtained significantly lower scores than boys ( $t(34) = 2.35, p < .05$ ). No other significant differences were found between genders with variables of interest. Since maternal reports on positive behaviors with the SCBE and teachers reports on negative behaviors with the SSRS were found to be different by gender, correlation analyses were conducted between security and social competence and scriptedness and social competence controlling for gender. Further, mediation analysis was conducted with gender entered in the equations as a covariate.

Table 4

*T-tests by Gender on Social Competence, SCBE & SSRS*

Variable		<i>N</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>df</i>
<b>Mother Report</b>						
SCBE +	Boy	16	4.29	.59	-2.10*	34
	Girl	20	4.71	.59		
SCBE –	Boy	16	1.76	.35	-1.38	34
	Girl	20	1.95	.45		
SSRS +	Boy	17	1.44	.22	-.43	35
	Girl	20	1.47	.21		
SSRS –	Boy	17	.69	.23	-.39	35
	Girl	20	.73	.23		
<b>Teacher Report</b>						
SCBE +	Boy	16	4.10	1.07	-1.10	34
	Girl	20	4.41	.63		
SCBE –	Boy	16	1.71	.45	.62	34
	Girl	20	1.61	.48		
SSRS +	Boy	16	1.40	.35	-.88	34
	Girl	20	1.49	.25		
SSRS –	Boy	16	.61	.39	2.35*	34
	Girl	20	.36	.24		
<b>Friend Report</b>						
SCBE+	Boy	14	4.43	.68	-.13	31
	Girl	19	4.46	.64		
SCBE –	Boy	14	1.79	.46	-.02	31
	Girl	19	1.79	.54		
SSRS +	Boy	14	1.42	.19	-.59	31
	Girl	19	1.46	.20		
SSRS –	Boy	14	.62	.31	.66	31
	Girl	19	.56	.26		

\**p*<.05

### Test of Hypotheses

*Hypothesis 1: Attachment security is significantly related to preschool children's social competence.*

Pearson correlations were performed to examine whether there were significant relations between the attachment security composite and social competence (SCBE and SSRS, as reported by the mothers, teachers, and friend).

A significant association was obtained between attachment security and mother report on SCBE positive behaviors ( $r(37) = .48, p < .01$ , 1-tailed). There was no significant association between security and mother reports on SCBE problem behaviors. Maternal reports using the SSRS for both positive and problem behaviors did not show any significant associations with attachment security. Controlling for gender did not change the significance of the association between security and social competence ( $r(37) = .47, p < .01$ , 1-tailed).

Significant associations were obtained between attachment security and teacher reports on SCBE positive behaviors ( $r(36) = .36, p < .05$ , 1-tailed). Teacher reports on SCBE problem behaviors showed a negative but non-significant correlation with attachment security. Teacher reports between SSRS on both positive behaviors and problem behaviors showed no significant associations with attachment security. Controlling for gender did not result in any change in associations.

Friend reports on SSRS and SCBE on both positive and negative behaviors showed no significant associations with attachment security.

Table 5

*Correlations between Attachment Security and Social Competence across Raters*

<i>Variables</i>					
<i>Mother Report (N=37)</i>	<i>Security</i>	<i>Teacher Report (N=36)</i>	<i>Security</i>	<i>Friend Report (N= 33)</i>	<i>Security</i>
1. SCBE+	.48**	1. SCBE +	.36*	1. SCBE +	.18
2. SCBE -	-.11	2. SCBE -	-.23	2. SCBE -	-.13
3. SSRS +	.29	3. SSRS +	.15	3. SSRS +	.16
4. SSRS -	-.15	4. SSRS -	-.20	4. SSRS -	-.19

\* $p < .05$  \*\* $p < .01$

Subsequently, given that mother and teacher reports on child's positive behavior were significant, correlational analyses were conducted at the item level for mother and teacher reports on SCBE. Analysis at the item level revealed a set of correlates for those contexts. Because of the exploratory nature of this analysis, correlation indices at significance  $p < .10$  were also considered. Results are shown in Table 6.

Table 6

*Item Analysis: Attachment Security & Mother, Teacher Report on SCBE Positive Behaviors*

<i>Variables</i>	Attachment Security MOTHER	Attachment Security TEACHER
1. Negotiates solutions to conflicts with other children	.34*	.40*
5. Comforts or assists another child in difficulty	.27 <sup>+</sup>	.08
11. Accepts compromises when reasons are given	.40*	.25
15. Takes other children and their point of view into account	.12	.21
17. Cooperates with other children in group activities	.19	.18
20. Shares toys with other children	.33*	.37*
22. Attentive towards younger children	.27 <sup>+</sup>	.25
24. Works easily in groups	.08	.23
26. Helps with everyday tasks (e.g. distributes snacks)	.30 <sup>+</sup>	.37*
30. Takes pleasure in own accomplishments	.22	.31 <sup>+</sup>

\* $p < .05$ , <sup>+</sup>  $p < .10$

*Hypothesis 2(a): Attachment security is significantly associated with attachment representations.*

Next, Pearson correlations were conducted to test the relation between attachment security composite and average scriptedness. Significance levels for these variables were set up according to one-tailed tests because of the specific hypotheses regarding the relationship between them. A Pearson correlation index indicated a positive and significant correlation between the two variables ( $r(36) = .31, p < .05$ , 1-tailed).

*Hypothesis 2(b): Attachment Representations are significantly associated with Social Competence.*

Lastly, Pearson correlations were conducted to examine the associations between scriptedness and social competence (SCBE and SSRS) (See Table 7). Significant associations were found between mother report on SCBE positive behavior and scriptedness ( $r(36) = .48, p < .01$ , 1-tailed). Mother reports on SCBE problem behaviors were not significantly correlated to scriptedness. Analyses indicated that correlations between scriptedness and SSRS positive and problem behaviors were non-significant.

Teacher reports on SCBE positive and problem behaviors showed no significant associations with scriptedness (Table 7). Correlations were also run with SSRS positive and problem behaviors and significant associations were found between SSRS positive behaviors and scriptedness ( $r(35) = .34, p < .05$ , 1-tailed) but no significant associations were found with SSRS problem behaviors.

The friend reports on SCBE and SSRS positive and problem behaviors showed no significant associations with scriptedness (Table 7).

Table 7

*Correlation between Scriptedness and Mother, Teacher and Friend Reports on SCBE and*

*SSRS*

<i>Variables</i>	<i>Scriptedness</i>	<i>Teacher Report</i> <i>(N = 36)</i>	<i>Scriptedness</i>	<i>Friend Report</i> <i>(N = 34)</i>	<i>Scriptedness</i>
<i>Mother Report</i> <i>(N = 36)</i>					
1. SCBE+	.48**	1. SCBE +	.23	1. SCBE +	.20
2. SCBE -	.29	2. SCBE -	-.04	2. SCBE -	.12
3. SSRS +	.15	3. SSRS +	.34*	3. SSRS +	-.07
4. SSRS -	-.03	4. SSRS -	-.10	4. SSRS -	.16

\* $p < .05$  \*\* $p < .01$  (1-tailed)

*Hypothesis 3: Attachment representation mediates the association between attachment security and social outcomes.*

In this analysis, attachment representation was examined as a potential mediator between child attachment security and child social competence. For attachment representations to be a mediator, it was first established that the predictors correlated significantly with each other and with social competence: child attachment security must be related to child's attachment representations (Path a), attachment representations must be related to social competence (Path b), and attachment security must be related to social competence (Path c; Baron & Kenny, 1986).

There was a significant correlation between teacher report on SCBE positive behaviors with the attachment security composite ( $r(36) = .36, p < .05$ ). There was however, no significant association with scriptedness ( $r(35) = .23, ns$ ). With SSRS positive behaviors, there was a significant association with scriptedness, ( $r(35) = .34, p < .05$ ), but not with attachment security composite ( $r(36) = .15, ns$ ).

No significant associations were found between friend's reports on SCBE and SSRS and the attachment security composite. Also, there were no significant associations between friend's reports on SCBE and SSRS with scriptedness. Thus representation was not examined as a potential mediator between attachment security and social competence (as reported by teacher and friend) since the conditions of mediation stated by Baron and Kenny were not met.

However, for mother reports on SCBE, attachment scriptedness was examined as a potential mediator because significant associations were obtained with child attachment security and social competence ( $r(36) = .31, p < .05$  and  $r(36) = .48, p < .01$  respectively). In

addition, attachment security significantly correlated with social competence ( $r(36) = .48, p < .01$ ). Thus, a regression analysis was conducted to test for the mediation role of attachment representations as recommended by Kenny (2008).

As mentioned above, since mean differences were detected by gender on social competence, regression analysis was run, controlling for gender. Regressions however were not run for the SSRS negative behaviors even though gender differences were found, because there were no significant correlations with the predictor variables to fulfill the criteria for a mediation analysis.

Gender was entered first as the covariate. Gender on its own significantly predicted social competence at entry ( $\beta = .36, p < .05$ ). Attachment security was entered in second, controlling for gender, and it significantly predicted social competence ( $\beta = .45, p < .01$ ). Attachment scriptedness was entered into the last model, controlling for both gender and attachment security ( $\beta = .30, p = .05$ ). When entering scriptedness last, although the beta weight for attachment security was significant ( $\beta = .45$ ) it was reduced ( $\beta = .37$ ). A Sobel Test determined that the reduction in beta weight for attachment security was significant; that is, there was a significant reduction in social competence variation that security accounted for. Thus entering scriptedness into the model partially mediated the association between attachment security and social competence (see Table 8).

Table 8

*Regression Analysis Predicting Social Competence using Attachment Representations,  
Controlling for Gender.*

<i>Variable</i>	B	SE B	$\beta$	$\Delta R^2$
Step 1				
Gender	.46	.20	.36*	.13
Step 2				
Gender	.40	.18	.32*	
Attachment Security	.21	.67	.45**	.20
Step 3				
Gender	.30	.18	.24	
Attachment Security	1.71	.67	.37*	
Attachment Scriptedness	.42	.21	.30*	.07

Note. B is unstandardized and  $\beta$  is standardized beta at entry;  $N = 36$ .

\* $p < .05$  \*\* $p < .01$

## CHAPTER 5: DISCUSSION AND CONCLUSIONS

The purpose of this study was to examine the associations between attachment security and social outcomes and to explore if attachment representations are associated with social competence, and further, whether they mediate the association between security and child social competence. Secure base relationships provide a context for socialization. It is suggested that children participating in secure base relationships will learn interaction skills that are used with peers in preschool settings (Booth, Rose-Krasnor, & Rubin, 1991; Bowlby, 1969/82; Bretherton, 1985; Cohn, 1990; Sroufe & Fleeson, 1986). Thus, socialization outcomes are expected to be associated with preschoolers' secure base organization as the social context of the child expands beyond the family.

There were three research questions addressed in this study. The first question was whether there was an association between attachment security and children's social outcomes. The second question was whether attachment representations were associated with (a) attachment security and (b) social competence. If all conditions were met, the third question was whether attachment representations mediated the association between attachment security and social competence.

Important to note here is that significant gender differences were identified in mother reports on SCBE social competence and teacher reports on SSRS problem

behaviors. These differences revealed that mothers reported girls as being higher on positive behaviors and teachers reported boys as being higher on problem behaviors. These significant differences between boys and girls behaviors are consistent with the literature that report on gender differences in social competence behaviors (Cohn, 1990; Rose-Krasnor, 1997; Turner, 1991). Because of these findings, gender was used as a covariate in all analyses and thus results presented, indicated significant associations after gender differences were taken into account.

#### *Organization of Secure Base Behavior and Social Competence*

In the present study, attachment security at 5.5 years of age was found to be significantly associated with child's social competence at 7.5 years of age, as reported on the SCBE by mothers and teachers. However, attachment security was not significantly, if at all, associated with the SSRS reports across raters. Reports on social competence using the SCBE suggest that participating in secure attachment relationships with mother in the preschool age relates in a theoretically meaningful way to social competence in the elementary school years. These significant positive correlations between child's attachment security and maternal and teacher reports on social competence replicate earlier work (Cohn, 1990; Howes, Matheson, & Hamilton, 1994; Kerns, 1994; Park & Waters, 1989; Park, 1992; Shulman et al., 1994; Youngblade et al., 1993), and extend it to the early school years. Those studies have reported the connection between security and social competence using either the Strange Situation or the Attachment Q-Set as the attachment measure and different methods have been used in order to report on child's social competence, such as sociometrics, direct observations, and reports from parents and teachers.

The findings from the present study however, were unique as compared to what is typically found in the literature on attachment and social competence. In this study, attachment security was assessed at 5.5 years of age, and social competence ratings were collected from mothers, teachers and mothers' friend in first and second grades, and significant associations were found between attachment security and mother and teacher reports on social competence. Typically, longitudinal studies using Ainsworth's Strange Situation have consistently documented connections between infant attachment security and later social competence with peers (e.g., Cohn, 1990; Elicker et al., 1992; Grossmann & Grossmann, 1991). What remains relatively unexplored in existing literature however is the study of the associations between the two variables, at different developmental periods e.g., after infancy, later in early childhood (e.g., Kerns et al., 1996). In doing so, assessments at different age periods provide the opportunity to examine whether the relations from security in infancy to social competence in childhood reported, hold, opening the door to a different interpretation of the relationships between the variables. Specifically, while early attachment experience may be important, concurrent influences also need to be considered to gain a better picture of how security and social competence are associated. As Sroufe (2005) put it, "...early experience is never lost, however much transformation occurs in later development" (pg. 353). Based on the findings presented, research needs to explore the impact of both early (as per extant literature) and concurrent secure base experience in understanding if it impacts social competence as the child broadens its world into arenas different from the home.

Social competence at 7.5 years of age was assessed using two measures, the Social Skills Rating Scale (SSRS) and the Social Competence and Behavior Evaluation scale

(SCBE). The associations of the two measures with attachment security differed; while mother and teacher reports on child's positive behaviors (SCBE) were found to be significantly associated with attachment security, the association between child's attachment security and social competence, as rated with the SSRS, did not reach significance across raters.

The SSRS was chosen as one of the measures to assess social competence because of its psychometrically sound rating scales for young children (Bracken, Keith, & Walker, 1994) and because it stands as a comprehensive standardized measure of social skills functioning (Flanagan, Alfonso, Primavera, Povall, & Higgins, 1996). It is also one of the few measures that have specifically been designed to examine competence as well as problematic behaviors (Raver & Zigler, 1997) among a wider-age range of children, for both boys and girls. But for this study, results failed to show any significant correlations between attachment security and SSRS across raters.

In an attempt to explain these findings, it is noteworthy to elaborate further on this particular measure in relation to attachment. From an attachment perspective, Ainsworth and colleagues original works (1974) on infant-mother attachment and social development perspective state that it is necessary to view attachment behaviors as interacting with other *behavioral systems* which may be activated in a given situation (Ainsworth, Bell & Stayton, 1974). However, the non-significant findings between secure base behavior organization and the SSRS ratings suggests that certain aspects of child's organization of secure base behavior may not necessarily be linked to all aspects of socially competent behaviors. In looking closely at the items on the SSRS forms, behaviors included are skill-based (e.g. "puts away toys or household property" and "easily makes transition from one

classroom to another”) but do not necessarily tap into aspects of child behavior concerned with interactions with others that may be more directly related to lessons the child learns by participating in secure base relationships. Only a few items of attachment related behaviors with peers are considered e.g., “joins groups without being told to”, “cooperates with peers without prompting.” Thus from an attachment perspective, the SSRS may have failed to show significant associations with child’s attachment security given the nature of the items described in this measure.

In line with this explanation, Schneider, Atkinson and Tardiff (2001) have stated that in the existing attachment literature, it seems that different aspects of social competence have been included, but it is not clear that all are equally relevant. There seems to be “broad” views of attachment (Thompson, 1998), according to which child-mother attachment could be expected to predict many, if not most aspects of child’s social development, in contrast to the more “narrow” views in which child-mother attachment is assumed to predict behavior in other relationships (Schneider et al., 2001). Those broad views of attachment however, do not seem to provide any basis to assume that all aspects of social development will be affected to the same extent.

Social competence has been conceptualized frequently as a set of desirable skills (Gresham, 1986; Mize & Ladd, 1990; Waters & Sroufe, 1983). The “skills” approach as Rose-Krasnor (1997) describes, classifies social competence in the individual as a trait or ability rather than as emerging from interactions between individuals. One of the most difficult aspects of implementing a skills approach is determining which behaviors constitute social competence (Rose-Krasnor, 1997). Several selection criteria have been proposed (Dodge, 1985; Waters & Sroufe, 1983) and various definitions of social

competence have been suggested e.g., ‘the ability to achieve personal goals in social interaction while simultaneously maintaining positive relations with others over time and across settings’ (Rubin & Rose-Krasnor, 1992, pg. 285), ‘behavior that reflects successful social functioning’ (Howes, 1987, pg. 253), ‘an ability to generate and coordinate flexible, adaptive responses to demands and to generate and capitalize on opportunities in the environment’ (Waters & Sroufe, 1983, pg. 80). But such varying selections of relevant skills have led to disagreements on criteria and subsequently have led to inconsistent findings.

Furthermore, the review of extant studies conveys that there has been a range of operationalization of the social competence construct that has been used, possibly explaining some of the inconsistencies in existing literature findings e.g., attachment security and social competence (Bohlin, Hagekull, & Rydell, 2000; Rose-Krasnor, 1997). This is in agreement with Schneider et al (2001) assertion that the various assessment methods that have been used to assess children’s social competence in attachment studies have varied greatly in terms of validity and reliability, often providing divergent pictures of the same child’s social competence.

Based on the results of this study it seems reasonable to suggest that secure base relationships impact certain aspects of a child’s social competence. That is, findings presented place limits/boundaries to what attachment influences. Thus it would be sensible to assume that the findings of the association between attachment security and social competence could depend on how social competence is conceptualized and measured. A more consistent and evidence-based definition of social competence could possibly relate these two constructs better in future studies.

Given that the SCBE showed significant correlations with attachment security, it was of interest to identify items salient in that instrument that correlated with attachment security. This finer level of analysis allowed for a more detailed examination of specific behaviors found to be significantly associated with attachment security. When the content of these items were examined, significant associations could be more easily explained. For example, items related to security were “accepts compromises when reasons are given”, “negotiates solutions to conflicts with other children”, “shares toys with other children”. These findings interestingly, show obvious links to aspects of child-mother interactions characteristic of secure relationships. Specifically, they relate directly to Ainsworth’s dimensions of sensitivity and co-operation with a child’s (other’s) behavior (Ainsworth et al., 1974).

From my results, I can consider the fact that although the mother may not have deliberately attempted to train her child, the mother’s interactions with him/her nevertheless may have facilitated child’s acquisition of socially desirable modes of behaviors, which can now be seen in interactions with peers (Ainsworth et al., 1974), such as using problem solving skills in conflict situations.

Overall, the results from this study highlighted the association between attachment security being positively and significantly correlated with social competence conceptualized as those items that describe child’s behavior during interactions with peers whereas other concepts of social competence conceptualized as mainly skills-based, trait like, whereby social competence in the individual is seen as an ability rather than as emerging from interactions between individuals, were not found to be associated with security.

Another interesting finding from our security-social competence association in the whole sample was the overall lack of finding of significant associations between attachment security and problem behaviors. One explanation for this finding could be the relatively small sample size and the non-clinical nature of the sample. Since children's problem behavior scores in my overall sample were very low, this may have perhaps restricted the range detected.

It is interesting to point out that these results here do not support the notion that of child interactions with others e.g., with mother or peers are child driven (e.g., due to characteristics of the child such as temperament); if that were the case, associations between security and reports on social competence across raters and contexts would be similar; an obvious criterion for temperament (Plomin, 1982). In this study, the association between security and social competence differed across all raters (and contexts). This at least partially indicates that the findings reported can not be attributed to endogenous factors" (Sroufe, 1985). Of course, any definitive conclusion about the influence of child-related characteristics should include data gathered on such issues.

#### *Organization of Secure Base Behavior and Attachment Representations*

The next hypothesis examined the association between attachment security and representations assessed during the preschool age. My findings showed that the organization of secure base behavior was significantly associated with attachment representations, assessed as secure base scripts, thus supporting the idea that children are constructing representations of their relationships that are consistent with their experiences with their primary caregiver.

These findings are in line with, although do not confirm, existing theoretical claims (Bowlby, 1969/82) that during the preschool period, attachment relations come to be governed by internal working models that these young individuals construct from the experienced interaction patterns with their attachment figures.

The modest correlation in my findings suggests that the two assessments are far from being similar operationalizations of the same phenomenon. Besides the methodological issues, there are reasons to think that they are not the same. The secure base behavior organization of the child was observed as child's interactions specifically with the mother. But what the child produces in these secure base scripts are representations of real-life experiences within their attachment relationships, that is likely to include not only the mother but at least information from child-father relationships, if not others; the Story Completion Task includes other figures besides the mother, i.e., mother, father, sibling, grandmother.

Second, developmentally, one would not expect a one-to-one correspondence between sensory motor and symbolic representations; representations are suggested as guides that help behavior during interactions, and are conceived as the individual's contribution to relational phenomena. In a dyadic interaction, or in interactions with others, the 'other' in a relationship also impacts what transpires in interaction, case in point being that the individual's representations are not the only guides in relationships.

Also, the use of the script methodology here is important in that this conceptualization helps us understand what is being represented and what the organization of those representations are (Bakermans-Kranenburg, 2006; Waters & Waters, 2006). Secure base scripts seem to be used to organize attachment related

narratives whereby the child can selectively retrieve script consistent events; those narratives turned out to be significantly related to children's organization of secure base behavior. By adopting the secure base script model of assessment, specificity is gained as to how information is represented (Bakermans-Kranenburg, 2006; Waters & Waters, 2006). Using the secure base phenomenon as an anchoring point, it is hoped, keeps attachment research grounded and more easily understandable.

#### *Associations between Attachment Representations and Social Competence*

Next, the relation between attachment representations and social competence was examined. The examination of this question was intended to contribute to a growing body of evidence supporting Bowlby's original view of the influence of internal working models on the formation of social relationships outside the home (Oppenheim, 1997; Page & Bretherton, 2001; Verschueren, Marcoen, & Schoefs, 1996). Child-mother attachment experiences are thought to contribute not only to representations of the parent, self, and attachment relationship, but also to how the child navigates her or his world, and more specifically, how he deals with others (Bowlby, 1973; Sroufe & Fleeson, 1986).

The results from the present study at best, partially supported the hypothesized association between attachment representations and child's social competence in first and second grade. Specifically, secure base scriptedness was significantly associated with mother reports using the SCBE and teacher's reports using SSRS on child's social competence. I found that the children who had higher scores on secure base scripts were also rated by their mothers and teachers as being more socially competent. These results suggest that there may in fact be links between representational/script generalizations of secure-base relationships and interactions behaviors with peers.

More specifically, the findings from this study are consistent with Bowlby's idea that securely attached children build representations (that include a set of positive expectations) about others that help them enter in smoother social exchanges and relationship than those of insecurely attached children (Bowlby, 1973; Cassidy et al., 1996). Results presented contribute to the existing literature by highlighting the relations between secure base scriptedness and social competence. That is, results underline the associations between the positive sides of both attachment relationships and peer interactions. The few existing studies tend to report significant associations between narrative representations and behavior problems (Oppenheim, Nir, Warren, & Emde, 1997; Warren, Oppenheim, & Emde, 1996). For example, from a low-risk and non-clinical sample of children at ages 3, 4, and 5, Warren and colleagues (1996) found associations between children's production of destructive themes in narratives and teacher reports on externalizing behavior. Children who portrayed more insecure scripts in their narrative responses to relationship oriented doll story stems were rated by teachers as having more externalizing behavioral problems than those who did not. From the same sample, Oppenheim et al (1997) found that children who portrayed caregivers in the doll story stems as being negative (i.e. verbally abusive) were also more likely to be rated as having behavioral problems as reported by mothers. Interestingly, my analyses did not indicate a significant association between scores in secure base scriptedness and children's problem behaviors.

One way to explain these differences in findings between my study and existing studies may be concerned with the different methodologies employed to evaluate children's narratives. While in the Oppenheim et al. (1997) and Warren et al. (1996) studies the

scoring is centered on the content, in the present study, the focus is on the organization of secure base information. Also, as mentioned before, the non-clinical, well-functioning sample employed in my study may have had very low levels of problem behavior and a restricted range for analyses to detect any significant associations.

In brief, the significant associations found between secure base scriptedness and social competence, speak to the importance of looking at the positive lessons learned by participating in secure base relationships and their potential implications for children's social outcomes. Thus, for example, children participating in secure attachment relationships may be committed to smooth reciprocal exchanges, where their perspective is frequently taken into account and where mothers cooperate with their behavior and goals. This knowledge represented is then used to frame their peer exchanges in similar ways. Regardless, the scarcity of studies on this issue is such that much research is needed to begin to understand the links between secure base representations and children's social outcomes. At this point, any conclusion is tentative and perhaps sample specific; a broader empirical basis is needed.

*Attachment Representations as Mediating the Association between Attachment Security and Social Competence.*

Finally, I was interested in examining whether scriptedness mediated the relationship between attachment security and social competence. Several theoretical perspectives have suggested the role of representations as a bridging mechanism between family and peer contexts, including attachment theory (Bowlby, 1969/82) and scripts theory (Nelson, 1986; Schank & Abelson, 1977). Although the mechanisms responsible for this relationship are not clear, it seems plausible that attachment representations might be

one such possible mechanism through which child-parent relationships exert their influence.

A mediation analysis was conducted only for the mother reports on social competence because analyses that were conducted to predict teachers and friend reports on social competence revealed no relation between attachment representations and social competence, which precluded any possibility of mediation. Also, since reports on problem behavior were not significantly correlated with security and representations, they too were excluded from any mediation analyses.

My findings showed that scriptedness partially and significantly mediated the relationship between secure base organization and social competence. These findings are the first on the issue and very promising given the exploratory nature of the study. Although entering scriptedness into the regression model last did not render the association between security and social competence non-significant, the proportion of variance in social competence accounted for by scriptedness and the change (decrease) of variance in social competence accounted for by security, were both significant.

From these findings I can conclude that children's secure-base scriptedness as presented in their narratives, in this study, seems to play an important role in the link between their attachment relationship experiences and social competence. Although not a full mediation, my findings are consistent with the view taken by attachment researchers, that the path between attachment relationships and children's social competence is mediated by the child's own cognitive construction of experience, the 'internal working models' which the child has formed from his/her experience (Bowlby, 1973).

An explanation for the partial mediation results may be that children's representations as assessed in the story completion task, are influenced by factors other than the attachment relationship with mother e.g., child-father relationship. If attachment representations include information from different attachment relationships, the associations between secure base behavior organization during interactions with mother and social competence cannot be expected to be fully mediated by those representations, as they include information beyond the one provided by child-mother exchanges (Bretherton, 1993; Thompson, 1998).

Further, I need to consider the developmental time period at which I obtained the attachment narratives. The preschool years are an especially significant period for the growth of working models, when some of the constituents of such models become consolidated (Bretherton, 1990, 1993); "A child's capacity to create a working model of relationships is based on some representational achievements that take time" (Thompson, 1998, pg. 71). Thus, the transition from a behavioral to a symbolic representational modus operandi is expected to be gradual and, then, as suggested in this study, the relevance of behavioral exchanges in secure base relationships as far as social outcomes are concerned, remains. That is, although I expect attachment representations to become more relevant as the child develops, behavioral influences derived from exchanges with attachment figures cannot be subsumed by such representations.

Also, it is important to consider children's experiences in their social network. Child-parent relationships cannot be expected to be the sole contributor to the prediction of children's social competence. It seems reasonable to expect that experience in interactions and relationships with peers and with other adults (as with teachers) have the potential to be

particularly influential both behaviorally and representationally (e.g., Cassidy et al., 1996; Elicker et al., 1992). If that is so, attachment representations cannot be expected to fully mediate the associations studied.

Overall, the results from this study are promising in that associations point in the expected direction, and seem to be consistent with other studies. The proposed model was at best, partially supported by my findings, and given my findings from this study and existing literature, further exploration is necessary to provide a basis for understanding the development of the internal working models as a possible mechanism through which attachment-related experiences in early childhood are “carried over” into the child’s social context, be it relations with peers, or other adults.

### Limitations

A considerable weakness of this study lies in its methodology. Attachment security of child and attachment representations in some cases, were assessed 2 years ( $M = 2.2$ ) prior to gathering information on child's social competence behaviors. Concurrent data was collected only for organization of secure base behavior and representations. This time gap between collecting data on security and representations and social competence could be a factor affecting the results (Youngblade et al., 1993). With respect to attachment, theorists have argued that working models become more stable with age (Bowlby, 1969). Perhaps having assessed child's representation at the time when social competence reports were being collected would have permitted clearer inferences about the influence of representations on social competence. The implications of the timing of assessments are significant.

Another notable limitation is the nature of the sample (as briefly mentioned before) itself, and the sample size. With a larger sample, there could have been an improvement of the power of the analyses. As for the sample characteristics, dyads were predominantly Caucasian, and came from two-family upper middle class homes. The children had relatively high attachment security scores, precluding inferences that can be made about the groups with a broader range of secure and insecure organizations. Also, the sample as a whole was reported high on social competence by teachers and mothers. In addition, most children's story completions portrayed relatively secure-base scripts. Very few children were rated low on scriptedness. Thus such a study needs replication with a larger and more diverse sample to allow generalizability of results to other groups as well.

A further limitation of this study, posing a threat to the external validity of findings is concerned with the assessment of social competence. Although the use of questionnaires was the best available strategy, given practical constraints of time and resources, observation of children's behavior in interactions with peers would have been preferable.

### Future Directions

Directions for future research should focus on conducting extensive observations of child's behaviors with peers in the classrooms, in the child's immediate social context with peers. Inferences can be made with reports, but studies should delve deeper into intensive observations to also match the rigorous research that has been done on observations of child's attachment behaviors at home (e.g. Attachment Q-Set) or in the laboratory (e.g., Strange Situation).

If I am to conclude that children's 'social competence' reports from parents or teachers should suffice, as far as attachment is concerned, I need to have a strong basis backing this up, in the guise of closer and more intensive observations of the child's behaviors in the social setting, over a longer period of time, and thus developing more specific questionnaires based on said observations of social competence aspects that are relevant from the attachment perspective. This could provide future research with a clearer view of how it is that the organization of secure base behavior is related to social competence.

Regarding the gathering of data about secure base relationships, repeated assessments should be conducted in order to describe mother-child interactions. Attachment relationships are formed on a daily basis; this means that conducting only two visits per family may not be enough to describe specificities of these interactions. More visits should be included, not only to observe the behaviors of these relationships, but perhaps to get a better understanding of the children's working models in relation to their behavior in attachment relationships.

Further, longitudinal data that would span across several developmental stages could provide more convincing support of the theory along with the concurrent assessments of security and social competence (Schneider et al., 2001). The main point raised with the inclusion of longitudinal and concurrent analysis is the importance of conceptualizing salient issues of each developmental period, to define constructs at the appropriate level of complexity for capturing organization with respect to the given context and developmental stage in which they occur. In turn, patterns of behavioral and representational organization need to be re-assessed and re-defined at different time points (Sroufe, 2005).

Another issue related to the conceptualization of representations that remains salient for future research, is the measurement of attachment representations. Future studies should perhaps include more attachment related stories to provide a wider range of attachment situations. A key issue is concerned with the specificity of aspects or representations that are relevant, and thus may relate to aspects of social situations.

In my own study for example, some associations were detected between attachment security and social competence particularly regarding child's ability to negotiate in conflicts with others. Stories in this regard should be included to see how mother and child can negotiate a difficult situation e.g., a child is in conflict with another child and the mother intervenes and helps child deal with this situation. Ideally, the domain specificity of the Story Completion Task needs further investigation along these lines and comparing studies of children's 'working models' in other social contexts including those with others, such as adults, siblings, or peers (Dunn, 1993).

Finally, given the findings from the meditational analysis, it was reasoned that partial mediation was possibly due to the fact that other factors may have played a role in influencing attachment representations e.g., child-father relationships. In future research, attention must be paid to attachment scripts of the father in relation to children's capacities for certain competence behaviors. Child's attachment representations which would presumably influence a child's orientation to relationships with peers, may allow for certain relationship characteristics associated with individual parents to be relevant to children's social competence. Again, although my findings are in the expected directions, they are not conclusive, and thus I cannot neglect taking into account other attachment figures that may influence child's attachment representation. These are issues to take into consideration for future research.

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## APPENDICES

## Appendix A: IRB Approval Form, Consent Forms, and Invitation

Research Project Number 050410 1882 Approval Date \_\_\_\_\_ Page 1

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MOTHER CONSENT FORM  
Child-Mother Interaction Project  
Germán Posada  
Purdue University  
Child Development & Family Studies

APPROVED

JAN 29 2008  
EXPIRES 1/28/09  
PURDUE UNIVERSITY  
INSTITUTIONAL REVIEW BOARD

Purpose of Research

The purpose of this project is to study the connections between child-mother relationships in naturalistic settings and how young children interact with their peers in the classrooms.

Specific Procedures to be Used

The procedures required include mothers' and teachers' reports on child behavior. You will be asked to provide information regarding your child's social interactions with peers in the classroom. For this, we will leave a set of questionnaires for you to answer. Researchers will collect the questionnaires a week later.

Duration of Participation

Filling out the questionnaires will take about an hour.

Benefits to the Individual

No direct benefits are to be gained by participating in the study. Participants have previously reported that they found it enjoyable to report about their observations of children's behavior at home.

Risks to the individual

Risks for participating in the study are no more than what participants would encounter in everyday life.

Compensation

You will be compensated \$10 for filling out the questionnaires.

Confidentiality

All information obtained will remain completely confidential. Any documentation with identifying information (e.g., child's name) will be stored under key in a locked cabinet in the principal investigators' office at Purdue University. All questionnaires and reports will be identified with a number. Only the principal investigators will have access to the file linking family names with identification numbers. The project's research records may be inspected by the Purdue University Institutional Review Board or its designees and by the funding source (Purdue University) to ensure that participants' rights are being protected. The information gathered will be kept indefinitely and will be only used for research purposes. Information obtained in this study will be reported in the form of group results; no names will be used in any report.

Voluntary Nature of Participation

Your participation in this project is completely voluntary. You may refuse to participate in the study or any part of it, or withdraw your participation at any time without any penalty.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Initials

Research Project Number 050400100 Approval Date \_\_\_\_\_

Page 2

Human Subjects Statement

If you have any questions about this research project, contact Germán Posada at (765)494-1029. If there are concerns about the treatment of research participants, contact the Committee on the Use of Human Research Subjects at Purdue University, 1071 Hovde Hall, Room 307, West Lafayette, IN 47907-1071. The phone number for the Committee's secretary is (765) 494-5942. The e-mail address is [irb@purdue.edu](mailto:irb@purdue.edu).

I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT

\_\_\_\_\_  
Mother's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mother's Name

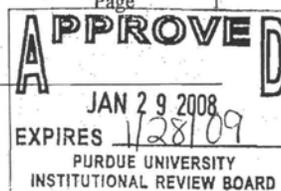
\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date

Research Project Number 0504001882 Approval Date \_\_\_\_\_

Page 1

TEACHER CONSENT FORM  
 Child-Mother Interaction Project  
 Germán Posada  
 Purdue University  
 Child Development & Family Studies



Purpose of Research

The purpose of this project is to study the connections between child-mother relationships in naturalistic settings and how young children interact with their peers in the classrooms.

Specific Procedures to be Used

You will be asked to provide information regarding the target child's social interactions with peers in the classroom. For this, we will leave a set of questionnaires for you to answer. Researchers will collect the questionnaires a week later.

Duration of Participation

Filling out the questionnaires will take about an hour.

Benefits to the Individual

No direct benefits are to be gained by participating in the study. Participants have previously reported that they found it enjoyable to report about their observations of children in the classroom.

Risks to the individual

Risks for participating in the study are no more than what participants would encounter in everyday life.

Compensation

You will be compensated \$10 for filling out the questionnaires.

Confidentiality

All information obtained will remain completely confidential. Any documentation with identifying information (e.g., child's name) will be stored under key in a locked cabinet in the principal investigators' office at Purdue University. All questionnaires and reports will be identified with a number. Only the principal investigators will have access to the file linking family names with identification numbers. The project's research records may be inspected by the Purdue University Institutional Review Board or its designees and by the funding source (Purdue University) to ensure that participants' rights are being protected. The information gathered will be kept indefinitely and will be only used for research purposes. Information obtained in this study will be reported in the form of group results; no names will be used in any report.

Voluntary Nature of Participation

Your participation in this project is completely voluntary. You may refuse to participate in the study or any part of it, or withdraw your participation at any time without any penalty.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Initials

Research Project Number 0504001000 Approval Date \_\_\_\_\_

Page 2

Human Subjects Statement

If you have any questions about this research project, contact Germán Posada at (765)494-1029. If there are concerns about the treatment of research participants, contact the Committee on the Use of Human Research Subjects at Purdue University, 1071 Hovde Hall, Room 307, West Lafayette, IN 47907-1071. The phone number for the Committee's secretary is (765) 494-5942. The e-mail address is [irb@purdue.edu](mailto:irb@purdue.edu).

I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT

\_\_\_\_\_  
Teacher's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Teacher's Name

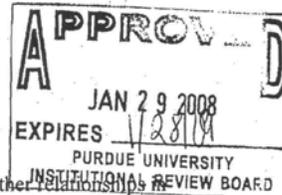
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Researcher's Signature

\_\_\_\_\_  
Date

Research Project Number 0504001882 Approval Date \_\_\_\_\_

Page 1

MOTHER OF CHILD'S FRIEND CONSENT FORM  
 Child-Mother Interaction Project  
 Germán Posada  
 Purdue University  
 Child Development & Family Studies



Purpose of Research

The purpose of this project is to study the connections between child-mother relationships in naturalistic settings and how young children interact with their peers in the classrooms.

Specific Procedures to be Used

The procedures required include mothers', mother of child's friend, and teachers' reports on child behavior. You will be asked to provide information regarding the target child's social interactions with peers in the classroom. For this, we will leave a set of questionnaires for you to answer. Researchers will collect the questionnaires one week later.

Duration of Participation

Filling out the questionnaires will take about an hour.

Benefits to the Individual

No direct benefits are to be gained by participating in the study. Participants have previously reported that they found it enjoyable to report about their observations of children's behavior.

Risks to the individual

Risks for participating in the study are no more than what participants would encounter in everyday life.

Compensation

You will be compensated \$10 for filling out the questionnaires.

Confidentiality

All information obtained will remain completely confidential. Any documentation with identifying information (e.g., child's name) will be stored under key in a locked cabinet in the principal investigators' office at Purdue University. All questionnaires and reports will be identified with a number. Only the principal investigators will have access to the file linking family names with identification numbers. The project's research records may be inspected by the Purdue University Institutional Review Board or its designees and by the funding source (Purdue University) to ensure that participants' rights are being protected. The information gathered will be kept indefinitely and will be only used for research purposes. Information obtained in this study will be reported in the form of group results; no names will be used in any report.

Voluntary Nature of Participation

Your participation in this project is completely voluntary. You may refuse to participate in the study or any part of it, or withdraw your participation at any time without any penalty.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Initials

Research Project Number 050400188 Approval Date \_\_\_\_\_

Page 2

Human Subjects Statement

If you have any questions about this research project, contact Germán Posada at (765)494-1029. If there are concerns about the treatment of research participants, contact the Committee on the Use of Human Research Subjects at Purdue University, 1071 Hovde Hall, Room 307, West Lafayette, IN 47907-1071. The phone number for the Committee's secretary is (765) 494-5942. The e-mail address is [irb@purdue.edu](mailto:irb@purdue.edu).

I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date

Dear Superintendent of School District,

I am writing on behalf of the Mother-Child Attachment Team at the Child Development and Family studies Department at Purdue University. We are currently on our 4<sup>th</sup> year of data collection for the mother-child attachment project. The project has involved conducting mother-child interaction observations in natural settings (both at the home and park).

Our families have participated in 4 visits during the last four years. We are now on our last phase in completing this project. As a follow up, we are asking the mother and teacher of the child to report on child's social interactions with peers, which involves filling out three questionnaires about child social interactions with peers.

The reason we are contacting you is to ask your permission to involve the teachers in helping us complete 3 questionnaires on social interactions of the child with peers. Again, these dyads have participated in our study for the past 4 years and we have the mothers' consent to get the teacher's to report on child-peer interactions. All information obtained is confidential. The participants are identified with id numbers. Please bear in mind that participation in this study is completely on a voluntary basis.

We have contacted the Institutional Review Board at Purdue University; in order to get the approval of the necessary paperwork, they have asked us to obtain your signed permission to proceed with contacting the teachers' of the participating children.

Should you have further questions regarding the study, please do not hesitate to contact the Principal Investigator of the study, Professor Germán Posada at [gposada@purdue.edu](mailto:gposada@purdue.edu) (765)494-1029 or the co-investigator, Garene Kaloustian at [gkaloust@purdue.edu](mailto:gkaloust@purdue.edu) (765)496-2654

We appreciate your help and cooperation in getting this final phase completed.

We are providing two copies of this letter. If you agree, please sign a copy and keep one for your records.

As part of the mother-child attachment study at Purdue University, I grant permission for teachers to fill out questionnaires for their students.

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Signature

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Name

---

Date

## APPENDIX B: THE ATTACHMENT Q-SET

1. Child readily shares with mother or lets her hold things if she asks to.  
*Low: Refuses.*
2. When child returns to mother after playing, he is sometimes fussy for no clear reason.  
*Low: Child is happy or affectionate when he returns to mother between or after play times.*
3. When he is upset or injured, child will accept comforting from adults other than mother.  
*Low: Mother is the only one he allows to comfort him.*
4. Child is careful and gentle with toys and pets.
5. Child is more interested in people than in things.  
*Low: More interested in things than people.*
6. When child is near mother and sees something he wants to play with, he fusses or tries to drag mother over to it.  
*Low: Goes to what he wants without fussing or dragging mother along.*
7. Child laughs and smiles easily with a lot of different people.  
*Low: Mother can get him to smile or laugh more easily than anyone else.*
8. When child cries, he cries hard.  
*Low: Weeps, sobs, doesn't cry hard, or hard crying never lasts very long.*
9. Child is lighthearted and playful most of the time.  
*Low: Child tends to be serious, sad, or annoyed a good deal of the time.*
10. Child often cries or resists when mother takes him to bed for naps or at night.
11. Child often hugs or cuddles against mother, without her asking or inviting him to do so.  
*Low: Child doesn't hug or cuddle much, unless mother hugs him first or asks him to give her a hug.*
12. Child quickly gets used to people or things that initially made him shy or frightened him.  
*Middle if never shy or afraid.*

13. When the child is upset by mother's leaving, he continues to cry or even gets angry after she is gone.  
*Low: Cry stops right after mom leaves.*  
*Middle if not upset by mom leaving.*
14. When child finds something new to play with, he carries it to mother or shows it to her from across the room.  
*Low: Plays with the new object quietly or goes where he won't be interrupted.*
15. Child is willing to talk to new people, show them toys, or show them what he can do, if mother asks him to.
16. Child prefers toys that are modeled after living things (e.g., dolls, stuffed animals).  
*Low: Prefers balls, blocks, pots and pans, etc.*
17. Child quickly loses interest in new adults if they do anything that annoys him.
18. Child follows mother's suggestions readily, even when they are clearly suggestions rather than orders.  
*Low: Ignores or refuses unless ordered.*
19. When mother tells child to bring or give her something, he obeys. (Do not count refusals that are playful or part of a game unless they clearly become disobedient.)  
*Low: Mother has to take the object or raise her voice to get it away from him.*
20. Child ignores most bumps, falls, or startles.  
*Low: Cries after minor bumps, falls, or startles.*
21. Child keeps track of mother's location when he plays around the house. Calls to her now and then. Notices her go from room to room. Notices if she changes activities.  
*Low: Doesn't keep track.*  
*Middle if child isn't allowed or doesn't have room to play away from mom.*
22. Child acts like an affectionate parent toward dolls, pets, or infants.  
*Low: Plays with them in other ways.*  
*Middle if child doesn't play with or have dolls, pets, or infants around.*
23. When mother sits with other family members or is affectionate with them, child tries to get mom's attention for himself.  
*Low: Lets her be affectionate with others. May join in but not in a jealous way.*
24. When mother speaks firmly or raises her voice at him, child becomes upset, sorry, or ashamed about displeasing her. (Do not score high if child is simply upset by the raised voice or afraid of getting punished.)

25. Child is easy for mother to lose track of when he is playing out of her sight.  
*Low: Talks and calls when out of sight. Easy to find; easy to keep track of what he is playing with.*  
*Middle if never plays out of sight.*
26. Child cries when mother leaves him at home with babysitter, father, or grandparent.  
*Low: Doesn't cry with any of these.*
27. Child laughs when mother teases him.  
*Low: Annoyed when mother teases him.*  
*Middle if mother never teases child during play or conversations.*
28. Child enjoys relaxing in mother's lap.  
*Low: Prefers to relax on the floor or on furniture.*  
*Middle if child never sits still.*
29. At times, child attends so deeply to something that he doesn't seem to hear when people speak to him.  
*Low: Even when deeply involved in play, child notices when people speak to him.*
30. Child easily becomes angry with toys.
31. Child wants to be the center of mother's attention. If mom is busy or talking to someone, he interrupts.  
*Low: Doesn't notice or doesn't mind not being the center of mother's attention.*
32. When mother says "No" or punishes him, child stops misbehaving (at least at that time). Doesn't have to be told twice.
33. Child sometimes signals mother (or gives the impression) that he wants to be put down, and then fusses or wants to be picked right back up.  
*Low: Always ready to go play by the time he signals mother to put him down.*
34. When child is upset about mother leaving him, he sits right where he is and cries. Doesn't go after her.  
*Low: Actively goes after her if he is upset or crying.*  
*Middle if never upset by her leaving.*
35. Child is independent with mother. Prefers to play on his own; leaves mother easily when he wants to play.  
*Low: Prefers playing with or near mother.*  
*Middle if not allowed or not enough room to play away from mother.*

36. Child clearly shows a pattern of using mother as a base from which to explore. Moves out to play; returns or plays near her; moves out play again, etc.  
*Low: Always away unless retrieved, or always stays near.*
37. Child is very active. Always moving around. Prefers active games to quiet ones.
38. Child is demanding and impatient with mother. Fusses and persists unless she does what he wants right away.
39. Child is often serious and business like when playing away from mother or alone with his toys.  
*Low: Often silly or laughing when playing away from mother or alone with his toys.*
40. Child examines new objects or toys in great detail. Tries to use them in different ways or to take them apart.  
*Low: First look at new objects or toys is usually brief. (May return to them later however.)*
41. When mother says to follow her, child does so. (Do not count refusals or delays that are playful or part of a game unless they clearly become disobedient.)
42. Child recognizes when mother is upset. Becomes quiet or upset himself. Tries to comfort her. Asks what is wrong, etc.  
*Low: Doesn't recognize; continues play; behaves toward her as if she were okay.*
43. Child stays closer to mother or returns to her more often than the simple task of keeping track of her requires.  
*Low: Doesn't keep close track of mother's location or activities.*
44. Child asks for and enjoys having mother hold, hug, and cuddle him.  
*Low: Not especially eager for this. Tolerates it but doesn't seek it, or wiggles to be put down.*
45. Child enjoys dancing or singing along with music.  
*Low: Neither likes nor dislikes music.*
46. Child walks and runs around without bumping, dropping, or stumbling.  
*Low: Bumps, drops, or stumbles happen throughout the day (even if no injuries result).*
47. Child will accept and enjoy loud sounds or being bounced around in play, if mother smiles and shows that it is supposed to be fun.  
*Low: Child gets upset, even if mother indicates the sound or activity is safe or fun.*
48. Child readily lets new adults hold or share things he has, if they ask to.

49. Runs to mother with a shy smile when new people visit the home.  
*Low: Even if he eventually warms up to visitors, child initially runs to mother with a fret or a cry.*  
*Middle if child doesn't run to mother at all when visitors arrive.*
50. Child's initial reaction when people visit the home is to ignore or avoid them, even if he eventually warms up to them.
51. Child enjoys climbing all over visitors when he plays with them.  
*Low: Doesn't seek close contact with visitors when he plays with them.*  
*Middle if he won't play with visitors.*
52. Child has trouble handling small objects or putting small things together.  
*Low: Very skillful with small objects, pencils, etc.*
53. Child puts his arms around mother or puts his hand on her shoulder when she picks him up.  
*Low: Accepts being picked up but doesn't especially help or hold on.*
54. Child acts like he expects mother to interfere with his activities when she is simply trying to help him with something.  
*Low: Accepts mother's help readily, unless she is in fact interfering.*
55. Child copies a number of behaviors or ways of doing things from watching mother's behavior.  
*Low: Doesn't noticeably copy mother's behavior.*
56. Child becomes shy or loses interest when an activity looks like it might be difficult.  
*Low: Thinks he can do difficult tasks.*
57. Child is fearless.  
*Low: Child is cautious or fearful.*
58. Child largely ignores adults who visit the home. Finds his own activities more interesting.  
*Low: Finds visitors quite interesting, even if he is a bit shy at first.*
59. When child finishes with an activity or toy, he generally finds something else to do without returning to mother between activities.  
*Low: When finished with an activity or toy, he returns to mother for play, affection, or help finding more to do.*
60. If mother reassures him by saying "It's ok" or "It won't hurt you," child will approach or play with things that initially made him cautious or afraid.  
*Middle if never cautious or afraid.*

61. Plays roughly with mother. Bumps, scratches, or bites during active play. (Does not necessarily mean to hurt mom.)  
*Low: Plays active games without injuring mother.*  
*Middle if play is never very active.*
62. When child is in a happy mood, he is likely to stay that way all day.  
*Low: Happy moods are very changeable.*
63. Even before trying thing himself, child tries to get someone to help him.
64. Child enjoys climbing all over mother when they play.  
*Low: Doesn't especially want a lot of close contact when they play.*
65. Child is easily upset when mother makes him change from one activity to another. (Even if the new activity is something the child often enjoys.)
66. Child easily grows fond of adults who visit his home and are friendly to him.  
*Low: Doesn't grow fond of new people very easily.*
67. When the family has visitors, child wants them to pay a lot of attention to him.
68. On the average, child is a more active type person than mother.  
*Low: On the average, child is less active type person than mother.*
69. Rarely asks mother for help.  
*Low: Often asks mother for help.*  
*Middle if child is too young to ask.*
70. Child quickly greets his mother with a big smile when she enters the room. (Shows her a toy, gestures, or says "Hi, Mommy.")  
*Low: Doesn't greet mother unless she greets him first.*
71. If held in mother's arms, child stops crying and quickly recovers after being frightened or upset.
72. If visitors laugh at or approve of something the child does, he repeats it again and again.  
*Low: Visitors' reactions don't influence child this way.*
73. Child has a cuddly toy or security blanket that he carries around, takes to bed, or holds when upset. (Do not include bottle or pacifier if child is under two years old.)  
*Low: Can take such things or leave them, or has none at all.*

74. When mother doesn't do what child wants right away, he behaves as if mom were not going to do it at all. (Fusses, gets angry, walks off to other activities, etc.)  
*Low: Waits a reasonable time, as if he expects mother will shortly do what he asked.*
75. At home, child gets upset or cries when mother walks out of the room. (May or may not follow her.)  
*Low: Notices her leaving; may follow but doesn't get upset.*
76. When given a choice, child would rather play with toys than with adults.  
*Low: Would rather play with adults than toys.*
77. When mother asks child to do something, he readily understand what she wants. (May or may not obey.)  
*Low: Sometimes puzzled or slow to understand what mother wants.  
Middle if child is too young to understand.*
78. Child enjoys being hugged or held by people other than his parents and/or grandparents.
79. Child easily becomes angry at mother.  
*Low: Doesn't become angry at mother unless she is very intrusive or he is very tired.*
80. Child uses mother's facial expression as a good source of information when something looks risky or threatening.  
*Low: Makes up his own mind without checking mother's expressions first.*
81. Child cries as a way of getting mother to do what he wants.  
*Low: Mainly cries because of genuine discomfort (tired, sad, afraid, etc.).*
82. Child spends most of his play time with just a few favorite toys or activities.
83. When child is bored, he goes to mother looking for something to do.  
*Low: Wanders around or just does nothing for a while, until something comes up.*
84. Child makes at least some effort to be clean and tidy around the house.  
*Low: Spills and smears things on himself and on floors all the time.*
85. Child is strongly attracted to new activities and new toys.  
*Low: New things do not attract him away from familiar toys or activities.*
86. Child tries to get mother to imitate him, or quickly notices and enjoys it when mom imitates him on her own.

87. If mother laughs at or approves of something the child has done, he repeats it again and again.  
*Low: Child is not particularly influenced this way.*
88. When something upsets the child, he stays where he is and cries.  
*Low: Goes to mother when he cries. Doesn't wait for mom to come.*
89. Child's facial expressions are strong and clear when he is playing with something.
90. If mother moves very far, child follows along and continues his play in the area she has moved to. (Doesn't have to be called or carried along; doesn't stop play or get upset.)  
*Middle if child isn't allowed or doesn't have room to be very far away.*

## APPENDIX C: ATTACHMENT STORY COMPLETION TASK STORY STEMS

***Spilled Juice Story***

*Researcher:* Can you help me set the table for dinner? (Give child box with silverware and let her or him set the table.)

*Researcher:* Now put the family around the dinner table so they're ready to eat. Here is our family eating dinner and Bob (Jane) gets up and reaches over and spills his juice. (Make doll knock cup off toy table so cup is visible to subject.)

*Mother:* Oh Bob (Jane), you spilled your juice! (Reproachful tone of voice, but don't overdo; turn mom toward child and move her up and down while she's talking.)

*Researcher:* Show me and tell me what happens now.

***Secure base script for Spilled Juice Story***

*Best:* Clean up juice and get more juice plus comments about not doing that again, or won't do that again (latter comments optional) or child is punished (spanked or sent to room), but the contingency is identified (e.g., mustn't do that).

*Middle:* Clean up or get spanked, or sent to room.

*Worse:* Problem not dealt with, odd ending.

***Hurt Knee Story***

*Researcher:* O.K., Look what I got. (Set out piece of green felt and sponge rock.)

This is the park. Here is our family and they're walking in the park, and at this park there is this high, high rock.

*Child:* Look mommy and daddy. Watch me climb this high, high rock. (Make child climb rock, then fall off.) Boo-hoo, I've hurt my knee (crying voice).

*Researcher:* Show me and tell me what happens now.

***Secure base script for Hurt Knee Story***

*Best:* See you can climb and not get hurt (explanatory) plus band-aid (optional). Key is that someone tries but does not get hurt (mommy, daddy, whoever). It would also be viewed as a good ending if the child was shown that the older sibling can climb the rock because they are bigger, but the younger child should not climb.

*Middle:* Fix the knee (band-aid, hospital, cast) plus kiss (optional, but viewed as helping get things back to normal).

*Worse:* Problem is not dealt with, odd ending.

***Monster in the Bedroom Story***

(Place a toy bed at least 30 cm. away from the rest of the family.) *Researcher:*

Look what happens now, listen carefully.

*Mother:* (Face mother toward the child doll and move her slightly as she speaks.)

It's bedtime. Go up to your room and go to bed.

*Father:* Go up to bed now. (Same action as mother, deep voice.)

*Child:* O.K. mommy and daddy, I'm going. (Make child walk to bed.)

*Researcher:* Bobby (Jane) goes upstairs to his room, and he goes . . . ,

*Child:* Mommy! Daddy! There is a monster in my room! There is a monster in my room (alarmed tone of voice).

*Researcher:* Show me and tell me what happens now.

***Secure base script for Monster in the Bedroom Story***

*Best:* See there is no monster (explanatory) plus kisses, smiles, song or story, everything is fine (optional, but viewed as providing a back to normal ending as the child goes to sleep).

*Middle:* Get monster and/or tuck child in (kiss, story, etc.).

*Worse:* Problem not dealt with, odd ending.

## Appendix D: Parent and Friend Social Skills Questionnaire (P-SSRS)

**Social Skills Questionnaire*****Parent Questionnaire***

**Please do not skip any items.** In some cases you may not have observed the child perform a particular behavior. Make an estimate of the degree to which you think the child would probably perform that behavior.

<i>Social Skills</i>	How Often?			How Important?		
	Never	Sometimes	Very Often	Not Important	Important	Critical
1. Uses free time at home in an acceptable way.	0	1	2	0	1	2
2. Keeps room clean and neat without being reminded	0	1	2	0	1	2
3. Speaks in an appropriate tone of voice at home.	0	1	2	0	1	2
4. Disobeys rules or requests.	0	1	2	0	1	2
5. Introduces himself or herself to new people without being told.	0	1	2	0	1	2
6. Responds appropriately when hit or pushed by other children.	0	1	2	0	1	2
7. Attends to speakers at meetings such as in church or youth groups.	0	1	2	0	1	2
8. Is easily embarrassed.	0	1	2	0	1	2
9. Invites others to your home.	0	1	2	0	1	2
10. Congratulates family members on accomplishments.	0	1	2	0	1	2

<i><b>Social Skills</b></i>	<b>How Often?</b>			<b>How Important?</b>		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
11. Makes friends easily.	0	1	2	0	1	2
12. Shows interest in a variety of things.	0	1	2	0	1	2
13. Doesn't listen to what others say.	0	1	2	0	1	2
14. Puts away toys or other household property.	0	1	2	0	1	2
15. Volunteers to help family members with tasks.	0	1	2	0	1	2
16. Gets angry easily.	0	1	2	0	1	2
17. Answers the phone appropriately.	0	1	2	0	1	2
18. Helps you with household tasks without being asked.	0	1	2	0	1	2
19. Appropriately questions household rules that may be unfair.	0	1	2	0	1	2
20. Attempts household tasks before asking for your help.	0	1	2	0	1	2
21. Has low self-esteem.	0	1	2	0	1	2
22. Is liked by others.	0	1	2	0	1	2
23. Acts sad or depressed.	0	1	2	0	1	2
24. Ends disagreements with you calmly.	0	1	2	0	1	2

<i><b>Social Skills</b></i>	<b>How Often?</b>			<b>How Important?</b>		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
25. Appears lonely.	0	1	2	0	1	2
26. Threatens or bullies others.	0	1	2	0	1	2
27. Completes household tasks within a reasonable time.	0	1	2	0	1	2
28. Asks for permission before using another family member's property.	0	1	2	0	1	2
29. Is self-confident in social situations such as parties or group outings.	0	1	2	0	1	2
30. Fights with others.	0	1	2	0	1	2
31. Gives compliments to friends or other children in the family.	0	1	2	0	1	2
32. Uses time appropriately while waiting for your help with homework or some other task.	0	1	2	0	1	2
33. Accepts friends' ideas for playing	0	1	2	0	1	2
34. Easily changes from one activity to another.	0	1	2	0	1	2
35. Cooperates with family members without being asked to do so.	0	1	2	0	1	2
36. Fidgets or moves excessively.	0	1	2	0	1	2
37. Reports accidents to appropriate persons.	0	1	2	0	1	2
38. Requests permission before leaving the house.	0	1	2	0	1	2
39. Starts conversations rather than waiting for others to talk first.	0	1	2	0	1	2
40. Controls temper in conflict situations with you.	0	1	2	0	1	2
41. Shows anxiety about being with a group of children	0	1	2	0	1	2

<i>Social Skills</i>	How Often?			How Important?		
	Never	Sometimes	Very Often	Not Important	Important	Critical
Child... 42. Responds appropriately to teasing from friends or relatives of his/her own age.	0	1	2	0	1	2
43. Disturbs ongoing activities.	0	1	2	0	1	2
44. Controls temper when arguing with other children.	0	1	2	0	1	2
45. Argues with others.	0	1	2	0	1	2
46. Acknowledges compliments or praise from friends.	0	1	2	0	1	2
47. Joins group activities without being told to.	0	1	2	0	1	2
48. Talks back to adults when corrected.	0	1	2	0	1	2
49. Acts impulsively.	0	1	2	0	1	2
50. Avoids situations that are likely to result in trouble.	0	1	2	0	1	2
51. Politely refuses unreasonable requests from others.	0	1	2	0	1	2
52. Is easily distracted.	0	1	2	0	1	2
53. Receives criticism well.	0	1	2	0	1	2
54. Has temper tantrums.	0	1	2	0	1	2
55. Asks sales clerks for information for assistance.	0	1	2	0	1	2

## Appendix E: Teacher Social Skills Questionnaire (T-SSRS)

**Social Skills Questionnaire*****Teacher Questionnaire***

**Please do not skip any items.** In some cases you may not have observed the student perform a particular behavior. Make an estimate of the degree to which you think the student would probably perform that behavior.

<i><b>Social Skills</b></i>	<b>How Often?</b>			<b>How Important?</b>		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
1. Controls temper in conflict situations with peers.	0	1	2	0	1	2
2. Introduces her/himself to new people without being told.	0	1	2	0	1	2
3. Fights with others.	0	1	2	0	1	2
4. Compromises in conflict situations by changing own ideas to reach agreement.	0	1	2	0	1	2
5. Responds appropriately to peer pressure.	0	1	2	0	1	2
6. Says nice things about him/herself when appropriate.	0	1	2	0	1	2
7. Has low self-esteem.	0	1	2	0	1	2
8. Uses free time in acceptable ways.	0	1	2	0	1	2
9. Finishes class assignments within time limits.	0	1	2	0	1	2
10. Makes friends easily.	0	1	2	0	1	2
11. Disturbs ongoing activities.	0	1	2	0	1	2

<i><b>Social Skills</b></i>	How Often?			How Important?		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
The student...						
12. Controls temper in conflict situations with adults.	0	1	2	0	1	2
13. Receives criticism well.	0	1	2	0	1	2
14. Initiates conversations with peers.	0	1	2	0	1	2
15. Doesn't listen to what others say.	0	1	2	0	1	2
16. Produces correct school work.	0	1	2	0	1	2
17. Appropriately tells you when he or she thinks you have treated him or her unfairly.	0	1	2	0	1	2
18. Accepts peers' ideas for group activities.	0	1	2	0	1	2
19. Acts sad or depressed.	0	1	2	0	1	2
20. Follows your directions.	0	1	2	0	1	2
21. Puts work materials or school property away.	0	1	2	0	1	2
22. Gets angry easily.	0	1	2	0	1	2
23. Volunteers to help peers with classroom tasks.	0	1	2	0	1	2
24. Joins ongoing activity or group without being told to do so.	0	1	2	0	1	2
25. Has temper tantrums.	0	1	2	0	1	2

<i><b>Social Skills</b></i>	How Often?			How Important?		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
26. Talks back with adults when corrected.	0	1	2	0	1	2
27. Keeps desk clean and neat without being reminded.	0	1	2	0	1	2
28. Attends to your instructions.	0	1	2	0	1	2
29. Is easily distracted.	0	1	2	0	1	2
30. Gets along with people who are different.	0	1	2	0	1	2
31. Appropriately questions rules that may be unfair.	0	1	2	0	1	2
32. Invites others to join in activities.	0	1	2	0	1	2
33. Threatens or bullies others.	0	1	2	0	1	2
34. Appears lonely.	0	1	2	0	1	2
35. Easily makes transition from one classroom activity to another.	0	1	2	0	1	2
36. Interrupts conversations of others.	0	1	2	0	1	2
37. Responds appropriately to teasing by peers.	0	1	2	0	1	2
38. Shows anxiety about being with a group of children.	0	1	2	0	1	2
39. Is easily embarrassed.	0	1	2	0	1	2
40. Uses time appropriately while waiting for help.	0	1	2	0	1	2
41. Argues with others.	0	1	2	0	1	2
42. Acts impulsively.	0	1	2	0	1	2
43. Cooperates with peers without prompting.	0	1	2	0	1	2

<i><b>Social Skills</b></i>	How Often?			How Important?		
	<b>Never</b>	<b>Sometimes</b>	<b>Very Often</b>	<b>Not Important</b>	<b>Important</b>	<b>Critical</b>
<b>The student...</b>						
44. Gives compliments to peers	0	1	2	0	1	2
45. Ignores peer distractions when doing class work.	0	1	2	0	1	2
46. Fidgets or moves excessively.	0	1	2	0	1	2
47. Responds appropriately when pushed or hit by other children.	0	1	2	0	1	2
48. Likes to be alone.	0	1	2	0	1	3

## Appendix F: Social Competence and Behavior Evaluation (SCBE)

**Social Competence and Behavior Evaluation**

Here is a list of behaviors that you may observe when the child is in your care. Please circle the number that reflects the frequency of the behavior that you observe for the child according to the following continuum. The behavior occurs NEVER (1), SOMETIMES (2 or 3), OFTEN (4 or 5) or ALWAYS (6). For those exceptional cases that are impossible to evaluate please check CANNOT EVALUATE.

	Never	Sometimes	Often	Always	Cannot Evaluate		
1. Negotiates solutions to conflicts with other children	1	2	3	4	5	6	_____
2. Tired	1	2	3	4	5	6	_____
3. Easily frustrated	1	2	3	4	5	6	_____
4. Gets angry when interrupted	1	2	3	4	5	6	_____
5. Comforts or assists another child in difficulty	1	2	3	4	5	6	_____
6. Worries	1	2	3	4	5	6	_____
7. Timid, afraid (e.g. avoids new situations)	1	2	3	4	5	6	_____
8. Sad, unhappy or depressed	1	2	3	4	5	6	_____
9. Inhibited or uneasy in the group	1	2	3	4	5	6	_____
10. Screams or yells	1	2	3	4	5	6	_____
11. Accepts compromises when reasons are given	1	2	3	4	5	6	_____
12. Inactive, watches the other children play	1	2	3	4	5	6	_____
13. Maintains neutral facial Expression (doesn't smile or laugh)	1	2	3	4	5	6	_____
14. Remains apart, isolated from the group	1	2	3	4	5	6	_____
15. Takes other children and their point of view into account	1	2	3	4	5	6	_____
16. Hits, bites or kicks other children	1	2	3	4	5	6	_____
17. Cooperates with other children in group activities	1	2	3	4	5	6	_____

	Never	Sometimes		Often		Always	Cannot Evaluate
18. Gets into conflict with other children	1	2	3	4	5	6	_____
19. Irritable, gets mad easily	1	2	3	4	5	6	_____
20. Shares toys with other children	1	2	3	4	5	6	_____
21. Doesn't talk or interact during group activities	1	2	3	4	5	6	_____
22. Attentive towards younger children	1	2	3	4	5	6	_____
23. Goes unnoticed in a group	1	2	3	4	5	6	_____
24. Works easily in groups	1	2	3	4	5	6	_____
25. Hits teacher or destroys things when angry with teacher	1	2	3	4	5	6	_____
26. Helps with everyday tasks (e.g. distributes snacks)	1	2	3	4	5	6	_____
27. Forces other children to do things they don't want to do	1	2	3	4	5	6	_____
28. Opposes teacher's suggestions	1	2	3	4	5	6	_____
29. Defiant when reprimanded	1	2	3	4	5	6	_____
30. Takes pleasure in own accomplishments	1	2	3	4	5	6	_____

VITA

## VITA

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**EDUCATION****PhD. Child Development and Family Studies, July 2008**

Specialization: Developmental Studies

Purdue University, West Lafayette, Indiana

Dissertation: Attachment Security, Representations and Social Competence in Preschool Setting

Major Professor: Germán E. Posada, Ph.D.

**M. S. Child Development and Family Studies, August 2004**

Purdue University, West Lafayette, Indiana

**B. A. Human Development and Family Studies, December 2002**

Pennsylvania State University, State College, Pennsylvania

**Languages:** Fluent in Armenian and Arabic  
Conversational in French and Spanish

***AWARDS & HONORS***

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Child Development and Family Studies Graduate School Research Grant Fellowship,  
Purdue University, Summer 2007

Selected Candidate, Lebanese Representative, UN Graduate Program, Summer 2004

## ***RESEARCH POSITIONS***

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### **Graduate Research Assistant, Purdue University, 2003 – current**

*Germán E. Posada, Ph.D., Principal Investigator*

Serve as Lead Research Assistant on the Mother-Child Attachment Research project with a team of 20 graduate and undergraduate students during any given semester. The study involved observing mother-child interactions in naturalistic settings (park, home visits, and classrooms) to assess secure/insecure attachment relationships to determine security level of attachment between mother and child through use of the Attachment Q-sort. This is a study that has been funded by the Purdue Research Foundation for 4 years and more recently, by the National Science Foundation. Responsibilities included orchestrating family recruitment at elementary schools and maintaining relations with a diverse group of families in an effort to reduce attrition for the longitudinal aspect of the study; coordinating family visits with both graduate and undergraduate students; coordinated and trained graduate and undergraduate students to conduct mother and child observations and get reliable data; interviewed and transcribed mother and child interviews; conducted observation of children's peer relations in the classroom during free play, large group, and small group activities; oversaw and controlled data management

### **Graduate Research Assistant, Purdue University, 2005 – 2006**

*Jim Elicker, Ph.D., Principle Investigator*

Served as a consultant for the child care providers for the “Tuning In” Intervention group focused on improving teachers’ quality of care in preschool and kindergarten classrooms. Intervention included a series of observation and consultation sessions, caregiver self-observations and reflections using a video-feedback technique, plus additional self-assessments and goal-setting. All of the intervention procedures were focused on increasing responsiveness. The design of the evaluation was a randomized clinical trial, with caregivers from Early Head Start and other center-based infant-toddler child care centers in northern Indiana. Other responsibilities included training for and coding teachers’ sensitive behaviors in their interactions with infant-toddler and preschool age children using the Arnett Scale of Caregiver Behavior and the Global Sensitivity scale using the Child-Caregiver Interaction Rating Scale.

### **Graduate Research Assistant, Purdue University, 2004 – 2006**

*Karen Diamond, Ph.D., Principal Investigator*

Served as a research assistant for a Children’s School Success (CSS) program. The aim of the project was to examine immediate and long-term effects of a curriculum, called Children’s School Success. This curriculum is designed to prepare 4 year old children at risk for school failure, to be successful in preschool and the early elementary grades (K - 2). It is designed to support children’s development of language, literacy and reasoning skills and social-emotional competence. Responsibilities included evaluating children’s mathematical and scientific skills in Head Start classrooms using various standardized measures as well as video-taping and observing children’s peer interactions to be coded for child social outcomes at three times periods.

**Research Assistant, Five Acres Residential Treatment Centre for Abused Children, California, 2001 – 2002**

*Dr. Robert Shennum, Ph.D., Principle Investigator*

Studied progress made by children's behavioral problems as determined through quality of program, and assisted in development and implementation of new programs for agency, on improving quality of the various programs for the children within the agency. Other responsibilities included assessing and analyzing monthly reports on children's behavioral progress and presented monthly reports to the director of the agency.

**Undergraduate Research Assistant, Pennsylvania State University, 1999 – 2000**

Head Start Promoting Alternative Thinking Strategies (PATHS) Project

*Mark T. Greenberg, Ph.D. Principle Investigator.*

The PATHS program is designed to improve the social, emotional and cognitive competence of elementary-aged children from low socio-economic backgrounds. Implemented PATHS curriculum in Head Start Schools in the Greater Harrisburg Area, Pennsylvania. Coordinated and supervised Penn State and Harrisburg offices in scheduling training sessions and provided training for Head Start classroom teachers. Other responsibilities included observations of Head Start teachers and providing feedback to them on implementing PATHS curriculum in classrooms; collaborating with community partners to carry out and disseminate prevention and early intervention research and evaluations; assisted in data analysis and management.

***TEACHING POSITIONS***

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**Instructor, Child Development Practicum (CDFS 212A & B), January 2006 – May 2007**

Responsibilities included independently teaching this course which focuses on the development of observation skills and the understanding of the behavior of children between the ages of infancy to kindergarten (6-7 years). The course involves supervised practicum in a setting with young children. In addition, students in CDFS 212B learn strategies for documenting individual children's development and learning, and writing observable and measurable learning objectives. Other responsibilities included creating semester syllabus, grading homework assignments and tests and collaborating with practicum teachers in order to ensure consistency between lecture and practicum materials. This course included 70 students during the spring semester and 35-40 students during the fall semester.

**Graduate Teacher Assistant, Child Development and Family Studies – Life-Span (CDFS 210), Purdue University, 2006**

*Dianna Cooper, Ph.D., Supervisor*

Responsibilities included teaching one third of the course material, preparing quizzes, mid-term and final exams, grading exams and papers, and maintaining course webpage. Number of students enrolled for this class was 180.

**Graduate Teacher Assistant, Purdue Child Development Laboratory School, 2002 – 2004**

*Margaret Story, M.S., Supervisor*

The Purdue University Laboratory School provides a teaching lab for undergraduate practicum students and student teachers. This classroom serves twenty 2.5 – 5 year old children in an inclusive setting for a half day program, four days per week.

Responsibilities included supervising undergraduate students through their practicum experience in day-care setting; conducted monthly assessments for children with special needs, such as physical disabilities, speech delays, attention deficit disorder, and autism. Attended and led conferences with parents of children with special needs and collaborated with colleagues from school and different social service agencies on a bi-monthly basis to assess and re-evaluate children's Individualized Education Program (IEP) designed to meet the specific objectives and goals for children with special needs.

**Lead Teacher, Tiny Tots, Basil, Switzerland, Summer 2000**

*Sujeewa Fernando, Assistant Director*

Led classroom activities, preparing and implementing developmentally age appropriate (4 – 7 years) lesson plans and providing written developmental information to parents and special service staff. Conducted undergraduate research thesis on quality of care of classroom teachers in US vs. Europe.

***OTHER PROFESSIONAL POSITIONS***

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**Volunteer, AGBU, Beirut Summer 2006**

Created educational setting for groups of refugees of the Summer 2006 War of Lebanon between the ages of 4-10, providing them with school materials; taught English and math everyday for 3-4 hours; organised activities for children and had story times.

**Intern, Mission of Lebanon to the United Nation, New York, Aug. 2005 – Dec. 2005**

*Ibrahim Asaaf, 1<sup>st</sup> Secretary, Supervisor and Majdi Ramadan, Counsellor*

Followed Third Committee matters (Humanitarian and Social Issues) during the General Assembly (GA), September through December. Attended "Informal Meetings" on issues concerning Lebanon; Children's Rights, Refugee situation in Lebanon, Women's Rights in the Arab World and discussed these issues with the Deputy Head of the Mission, and accordingly wrote bi-weekly reports on issues related to Human Rights and specifically Women's and Children's Rights to send to the Capital (Beirut, Lebanon). Discussed and edited resolutions to be presented to Third Committee during the daily informal consultations. Attended Annual UNICEF Executive Board Meeting (September) and sent a report to Beirut regarding matters specific to Lebanon. Presented paper to the Arab Group on the "Situation of Children in Lebanon" in collaboration with two Lebanese colleagues.

**Selected Candidate, United Nations Graduate Study Program, Geneva, Switzerland, Summer 2004**

Participated in debates and panel discussions in the Humanitarian Working group. Co-chaired drafting committee for the Human Rights Working Group and presented final document on Human Rights to the panel committee and the rest of the working groups. Discussed and presented feed-back/modifications in collaboration with my group, to other working groups: Environmental Working Group and Economic and Business Working Group.

**Field Specialist, Pacific Clinic, Non-Profit Behavioural Healthcare Agency, Wraparound Services, San Bernadino, California, 2001 – 2002**

*Douglas Thomas, M.S., Supervisor*

Worked and implemented behavioral modification techniques with at-risk children of diverse ethnicities and predominantly low socio-economics status, ages 6 – 18. The aim was to collaborate with the natural and foster families in order to help their children remain in their homes and schools. Created programs for children to achieve their goals and avoid re-admission to acute levels of care. Assessed high-risk/abused children and their families for identification and early intervention, and provided them with parent training/support as well as prevention and early intervention programs for the children. Coordinated with various social service organizations in determining goals and objectives for each child.

**Children's Activities Coordinator, Pediatric Oncology Department, American University of Beirut Hospital, Beirut, Lebanon, Summers 1997 – 2000**

*Randa Shahine, RN, Supervisor*

Coordinated daily activities for terminally ill children, and provided assistance and support for bed-ridden children and their families. Coordinated schedules with families and nurses for all activities, and organized end-of-summer shows for the children to present to their families and hospital staff.

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***PUBLICATIONS AND PRESENTATIONS***

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Posada, G., **Kaloustian, G.** Richmond, M. K., Jacobs, A. (2007). Maternal Secure Base Support and Preschoolers' Secure Base Behavior in Natural Environments. *Journal of Attachment and Human Development*

Posada, G., & **Kaloustian, G.** Child-parent attachment relationships across the life-span. Manuscript in preparation for Handbook chapter (*in preparation*).

Posada, G., **Kaloustian, G.**, & Georgescu, O. Maternal secure base support and children's quality of exploration. Manuscript (*in preparation*).

Posada, G., **Kaloustian, G.**, & Bárrig, P. (2007, April). The secure base phenomenon in preschoolers: Child secure-base behavior and narratives about using mom as a secure base. Poster presented at the biennial meeting of the Society for Research in Children Development. Boston, MA.

Carbonell, O. A, Posada, G., **Kaloustian, G.**, Plata, S., & Alzate, G. (2004, May). A descriptive ethnographic study of caregivers' interactive behavior in a daycare setting. Paper presented at the Symposium The nature and developmental influences of caregiving relationships in infant-toddler child care. 14<sup>th</sup> Biennial International Conference on Infant Studies. ISIS. Chicago, IL.

Presentation for the Arab Group on the session on "The Situation of Children in the Middle East." New York, NY, September 2005. Ramadan, M., & **Kaloustian, G.** The situation of children in Lebanon.

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***PROFESSIONAL ORGANIZATION AFFILIATION/SERVICE***

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Society for Research in Child Development  
National Association for the Education of Young Children