

## **Mother–child attachment in later middle childhood: Assessment approaches and associations with mood and emotion regulation**

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### **Abstract**

This study examined the overlap and validity of several measures of mother–child attachment developed for preadolescents. Validity was assessed in part by examining how attachment is related to children’s mood and emotion regulation. Mother–child attachment was assessed in a sample of 9 to 11 year-old children using a story stem interview technique and questionnaires. Positive and negative mood were scored from daily logs completed by children. Emotion regulation was assessed with mothers’ reports of constructive coping and teacher reports of children’s ability to tolerate frustration. Interview and questionnaire measures of attachment were not consistently related to one another, although both were related to mood and emotion regulation. As expected, secure attachment and maternal secure base support were related to higher levels of positive mood, more constructive coping, and better regulation of emotion in the classroom, with effects stronger for emotion regulation than for mood. Children classified Disorganized or Ambivalent displayed the most negative mood. All effects remained significant after controlling for child temperament.

**Keywords:** *Mother–child attachment, emotional development, attachment assessment, middle childhood*

### **Introduction**

Bowlby’s (1969/1982, 1979) theory of attachment suggests that children’s relationships with their caregivers are an important influence on the child’s social and emotional development. There is substantial support for the theory. For example, children who form more secure attachments to their mothers form higher quality relationships with peers (Schneider, Atkinson, & Tardif, 2001) and manifest higher self-esteem (Thompson, 1999) than do less securely attached children. Although attachment is one of the most investigated topics in social development, certain questions and certain developmental periods have not received much attention, despite their theoretical significance. One goal of the present study was to extend research on methods and measures to assess attachment in later middle childhood (9–11 years of age), an age period that has not been studied extensively. A second goal was to examine further the validity of the measures by examining how attachment is related to emotional development. Emotional development was chosen because of its strong theoretical tie to attachment (Cassidy, 1994; Contreras & Kerns, 2000; Sroufe & Waters, 1977).

Measures to assess individual differences in the quality of children's attachments to parents are typically designed to capture the secure base phenomenon, that is, the degree to which a child is able to use a parent as a secure base from which to explore and as a haven of safety in times of distress or concern (Ainsworth, Blehar, Waters, & Wall, 1978; Kerns, Schlegelmilch, Morgan, & Abraham, 2005; Solomon & George, 1999). In infancy and early childhood, behavioral observation has been employed to describe secure base behavior either in the laboratory (e.g., Strange Situation) or at home (e.g., Attachment Q-sort). Although children continue to use parents as secure bases, at least through adolescence, the frequency and intensity of attachment behavior declines in middle childhood (Bowlby, 1969/1982; Kerns, Tomich, & Kim, 2006; Lieberman, Doyle, & Markiewicz, 1999). This decline in parental secure base usage presumably occurs because of increases in children's coping capacities as they get older and the need for greater self-regulation as children are less frequently in close proximity to parents (Kerns et al., 2006; Marvin & Britner, 1999). It may also reflect the start of a reorientation from parents to peers in preparation for the development of peer attachments in adolescence (Maysseless, 2005). As Main and Cassidy (1988) noted, this shift toward less frequent and more subtle displays of attachment behavior can make behavioral observation of secure base behavior much more challenging.

Children develop not only secure base patterns of behavior, but an associated set of expectations or scripts regarding caregivers and the attachment relationship (Bowlby, 1969/1982; Main, Kaplan, & Cassidy, 1985; Oppenheim & Waters, 1995; Sroufe & Fleeson, 1986), which are typically referred to as children's working models or representations of the attachment relationship. It is thought that children's representations become more elaborated with age as children's verbal and memory capacities improve (Main et al., 1985). Because of this change, and because of the decline in attachment behavior, Main et al. (1985) have argued for the need to "move to the level of representation" when assessing attachment in middle childhood and at older ages. This shift in attachment assessment is also consistent with Bowlby's proposal (Ainsworth, 1990) that the goal of the attachment system changes from proximity of the Attachment Figure (AF) in early childhood to availability of the AF in middle childhood. Thus, by middle childhood, attachment assessments typically have targeted children's representations of the attachment relationship and caregiver availability, rather than directly assessing secure base behavior.

Narrative techniques have been developed to assess attachment representations in preschoolers and early school age children (e.g., Main et al., 1985; Bretherton, Ridgeway, & Cassidy, 1990; see reviews in Page, 2001; Solomon & George, 1999). Although narrative techniques have been used in several studies with 3- to 6-year-olds (Emde, Wolf, & Oppenheim, 2003; Page, 2001; Solomon & George, 1999), fewer studies have tested the utility of narrative story techniques at older ages. Granot and Maysseless (2001) adapted Bretherton's doll story-stem technique for 9–11-year-olds. With this technique, a researcher begins to tell a story, using dolls and props, which introduces an attachment related theme. The child is then asked to complete the story, and the child's response is scored both for how the characters are portrayed (e.g., response of AF to child concerns) as well as for features of narrative style (e.g., story coherence). After extensive piloting of the procedures, and adapting the stories for older children, Granot and Maysseless (2001) found that children's attachment as assessed with the doll play interview was related to children's social adjustment at school. Granot and Maysseless (2001) developed and tested the instrument in an Israeli sample.

In the present study, we extended their work by testing the Granot and Maysseless (2001) measure and attachment classification scoring procedures in an American sample. We also tested the feasibility of adapting a script based scoring technique for scoring older children's

narratives. Although there are many ways to define and measure working models, one way the concept has been conceptualized is as scripts for the attachment relationship (Bretherton, 1985; Main et al., 1985; Oppenheim & Waters, 1995). Waters, Rodrigues, and Ridgeway (1998) pioneered a script-based approach to assessing preschoolers' story-system narratives in which stories were rated for the degree to which they reflected a secure base script (i.e., use of parent figure as a secure base and safe haven). We adapted their procedures to test the feasibility of using the script approach to score older children's story-system narratives. Finally, we included other measures of the attachment relationship in the present study. To provide a broader assessment of attachment, we included in the present study measures of child and parent perceptions of the attachment relationship (i.e., child perceptions of security and parental perceptions of their willingness to serve as an AF for their child).

In addition to examining how different attachment assessments are related to one another, we examined how attachment is related to children's emotional development. Emotion is an integral feature of attachment. For example, displays of positive affect (e.g., affective sharing) characterize secure parent–child relationships, and securely attached children are able to use contact with the AF to regulate their emotions (Sroufe & Waters, 1977). Cassidy (1994) noted that children with secure, avoidant and ambivalent attachments adopt different patterns of emotion regulation within the attachment relationship. Whereas secure dyads are characterized by open expression and adaptive regulation of emotion, in avoidant dyads there is minimization of emotion (especially negative affect) and in ambivalent dyads there is heightening of emotion (Cassidy, 1994). Further, patterns of affect regulation developed within the attachment relationship are hypothesized to become internalized by the child and thus displayed even in the AF's absence (Contreras & Kerns, 2000; Sroufe, 1983). For example, more securely attached children may learn, through interactions with caregivers, adaptive techniques for managing negative emotions and challenges, which they can then apply to new situations, even in the absence of the AF (Contreras & Kerns, 2000). In addition, securely attached children may bring a more positive attitude to social interactions with others, which may enhance the affective quality (i.e., mood) of their social interactions.

Given the central role of emotion within attachment theory, it is surprising that relatively little research has investigated how attachment is related to children's emotional development. There are some studies linking attachment to the display of emotion between parent and child (Thompson, 1999), but in these studies it is unclear if the emotion measures are tapping the dyadic relationship (i.e., are indicators of attachment) or are indicators of the child's emotional development. A few studies of preschoolers have shown that attachment is related to children's emotional development when assessed outside the parent–child dyad. For example, compared to those with insecure attachments, children with secure attachments to their mothers displayed emotion more openly with an experimenter (Lutkenhaus, Grossmann, & Grossmann, 1985), displayed more positive affect with peers (Park & Waters, 1989; Sroufe, Schork, Motti, Laworski, & LaFraniere, 1984), were more ego-resilient in preschool classes (Sroufe, 1983), and showed better understanding of negative emotions (Laible & Thompson, 1998). In middle childhood, more securely attached children have been rated by teachers as showing better social and emotional adaptation in the classroom (Granot & Mayseless, 2001; Kerns, Tomich, Aspelmeier, & Contreras, 2000; Kerns et al., 2006; Sroufe, Egeland, & Kreutzer, 1990). In addition, more securely attached children also show more sophisticated understanding of mixed emotions (Steele, Steele, Croft, & Fonagy, 1999) and are reported by their mothers to use more adaptive coping strategies (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000).

A second goal of the present study was to extend research by examining how attachment is related to two aspects of emotion, as assessed in everyday contexts: mood and emotion regulation. We collected daily mood reports from children to examine whether, as has been found at younger ages (Park & Waters, 1989; Sroufe et al., 1984), children more securely attached to their mothers experience higher levels of positive mood and lower levels of negative mood. In addition, we examined whether more securely attached children displayed more adaptive emotion regulation. Emotion regulation was assessed with mothers' reports of their children's coping strategies and teacher reports of children's ability to tolerate frustration in the classroom. We expected more securely attached children to use more constructive coping strategies (e.g., problem solving rather than aggression) and to show better regulation when working on demanding school tasks.

While some of our assessments were designed to tap a single security dimension, we did obtain attachment classifications that allowed us to examine emotion differences for insecure subtypes. Because children with avoidant attachments are described as employing a strategy of minimizing the display of affect (Cassidy, 1994), we predicted that children with avoidant attachments to their mothers would report experiencing low levels of positive and negative moods in their daily lives. Children with ambivalent attachments are described as adopting a heightening strategy to insure attention from others (Cassidy, 1994) and are low on social maturity (Cassidy & Berlin, 1994), and therefore we expected that these children might display high levels of negative mood and difficulty coping with everyday problems and regulating emotions in the classroom. Although there has been less theoretical speculation about the emotion regulation strategies of disorganized children, because they lack a secure base we expected that disorganized children might also have difficulty regulating their emotions and might also be prone to experiencing high levels of negative mood. Thus, we expected that children manifesting ambivalent or disorganized attachments to their mothers would be characterized by high levels of negative mood and difficulties regulating emotion.

A general concern in any study examining correlates of attachment is whether there are variables other than attachment that might account for the findings. Given our focus on emotion, we were concerned about whether temperament might be a factor that could explain associations between attachment and emotion. One commonly identified dimension of temperament is negative emotionality (Rothbart & Bates, 2006), which refers to experiencing high levels of negative emotions (e.g., irritability, fear) and a lack of soothability. Some research has shown that children who are high on negative emotionality are also more likely to have difficulties regulating their emotions (Contreras et al., 2000; Eisenberg & Fabes, 1999), perhaps because of the intense nature of their emotions. Therefore, we included a measure of negative emotionality in our study so we could examine the relation between attachment and mood and emotion regulation after controlling for negative emotionality.

## **Method**

### *Participants*

The participants were recruited through local elementary schools. Fourth and fifth grade children and their mothers were invited to participate in our study through information sent home through the schools. Interested children and their mothers either returned an interest form or contacted our lab directly. Those participating were 52 children, 26 girls and 26 boys, ages 9 to 11 years, with a mean age of 10 years and 6 months. The sample was 85% Caucasian, 8% African American, and 7% other races. A majority of the children (63%)

were from intact families, with the remainder in single-parent families (27%) or with stepparents (10%).

*Procedure*

As part of a larger study, the children and their mothers made a visit to our university lab. During these visits, the mothers were asked to complete a variety of questionnaires, including a demographics questionnaire, while the children were taken into a separate room to answer questionnaires and perform a Story Completion Task. Additionally, the children were asked to fill out a daily mood log for 4 days after the lab visit (compliance rate 96%) and teachers were contacted and asked to fill out a questionnaire on each child participating (compliance rate of 75%).

**Measures**

Means, standard deviations, and ranges for all main study variables except the attachment classifications are presented in Table I.

*Attachment measures*

To measure attachment we used multiple measures, all based on attachment theory. A questionnaire was used to assess children’s perception of security of attachment to their mothers. The children completed the Security Scale (Kerns, Aspelmeier, Gentzler, & Grabill, 2001), a 15-item self-report questionnaire, during the lab interview. Items on this scale assess children’s perceptions of communication with and accessibility and responsiveness of the mother. This scale presents pairs of statements based on the Harter scale (1982) “some kids/other kids” format, in which children are presented with two possible response types and are asked to indicate which group of kids they are most like. This method of identifying with either one or the other group of kids decreases the child’s likelihood of responding in a sociably desirable manner (Harter, 1982).

Table I. Descriptive information for attachment variables (excluding attachment classifications) and emotion variables.

	<i>M</i>	<i>SD</i>	Range
<b>Attachment-based assessments</b>			
Child perceived security	3.42	0.42	2.00–4.00
Mother willingness to serve as SB	5.12	0.65	2.90–6.00
Secure scriptedness (average score)	26.50	9.81	7.25–45.50
Reunion story rating	26.50	15.15	2.50–52.00
<b>Mood</b>			
Positive mood	3.28	0.40	2.41–3.93
Negative mood	1.37	0.34	1.00–2.35
<b>Emotion regulation</b>			
Constructive coping	13.42	2.24	6.57–17.82
Frustration tolerance	3.50	0.69	1.60–4.60
<b>Emotionality</b>			
Negative emotionality	4.82	0.94	3.00–6.50

*Note:* SB = secure base. Table I includes all of the continuous measures of attachment and emotion. Descriptive information for the categorical measure of attachment is included in the text.

The Security Scale asks questions such as, “some kids go to their mom when they are upset, but other kids do not go to their mom when they are upset.” The child determines which statement is most like them, and then marks whether it is really true or sort of true. Each item was scored from 1 to 4 with a higher score indicating perceptions of greater security. Security scores were computed by calculating the mean of responses for all 15 items ( $\alpha = .81$ ). Reliability also has been demonstrated for this measure in previous studies of middle childhood, with Cronbach alphas around .80 or higher (Kerns et al., 2005). Security scores also are related to measures of parenting and children’s social and emotional development (Kerns et al., 2005).

The Attachment Doll Story Completion Task (Granot & Maysseless, 1999, 2001) was administered during the lab visit. This tool provides a projective assessment of attachment in which story-stems are used to elicit a cognitive and affective response. Projective assessments have been demonstrated to be a valid means of assessing attachment (Main et al., 1985; Page, 2001). In this task, the interviewer begins a story with an attachment related theme and the child completes it. A mother and children were included in the story, with the child characters matched on age and sex to the target child and his or her siblings. After a warm-up story there were five story-stems: the child spills their juice during dinner, the child hurts their knee after falling off a rock, the child sees a scary figure after going to bed, the child is left with a sitter after the mother departs for 3 days, and the mother and child have a reunion after the 3-day separation. The interviewer began a story-stem, using dolls to act out events, and the child was then asked to complete the story and show, using the dolls, what the child thinks will happen. The child’s narrative is coded both on what they recount to the interviewer as well as actions they demonstrate with the dolls.

We used two methods to score the interview. The first was a system developed by Granot and Maysseless (1999, 2001) in which each story was classified secure or insecure based on four criteria. The first criterion was how the parent–child relationship was portrayed. In a secure story we would expect the relationship to be characterized by warmth and stability, while in an insecure relationship we would expect to see distance or inaccessibility of the attachment figure. Four of the five story-stems posed a potential for conflict or negative emotion; therefore, the second criterion was whether the parent and child were able to resolve any negative affect or conflict. A happy ending and a return to normal would be expected in a secure story, with an insecure story demonstrating exaggeration or denial of the conflictual nature of the parent–child interaction or difficulties resolving problems.

The third criterion was based on the expression of emotion. In a secure relationship, the child is able to express both positive and negative emotion and the parent will respond to both. Conversely, in an insecure relationship the child demonstrates either minimization or exaggeration of the emotion expression. The final criterion used was narrative coherence. In a more secure narrative there is a logical progression of reasonable events with a beginning, middle, and an end. In an insecure narrative, there are often extraneous events that are irrelevant to the story line, no consistent time-line, the inclusion of odd or contradictory events, or the story is very brief.

A coder rated each individual story as secure or insecure, and then the child was assigned to one of four attachment classifications (secure, avoidant, ambivalent, or disorganized) based on how closely their entire narrative resembled the prototypes of each attachment strategy. Children who were classified Secure portrayed caregivers as accessible and responsive, generated constructive resolutions to any problems that arose, told stories that included both positive and negative emotions, and produced coherent narratives. Children classified Avoidant manifested a “minimizing” strategy in which children either did not solicit assistance from caregivers or caregivers were highly instrumental (e.g., attending to

physical injury without providing emotional comfort), problems were minimized or resolved quickly, there was little expression of emotion, and stories were coherent but brief. Children classified Ambivalent showed a heightening strategy in which caregivers were portrayed within stories as erratic or inconsistent in responding to child needs, problems tended to escalate and require the continued attention of caregivers, there were displays of intense emotion (especially negative emotion) and swings in emotion within a story, and narratives lacked coherence in that children provided overly long narratives that contained irrelevant details. Children classified as Disorganized showed either a mix of the organized strategies or presented stories in which themes of fright and chaos were prominent. Caregivers were portrayed as punitive or psychologically unavailable, and problems were either not solved or the solution offered was unrealistic (e.g., the target child subdued a burglar in the Scary Figure story). Emotions were displayed inconsistently and the narrative was incoherent with odd or dangerous elements in the story and/or inconsistent timelines and unrealistic events.

Two coders, who had been trained by David Granot and Ofra Mayseless, independently scored the interviews, overlapping on 25 cases for purposes of assessing observer agreement. Agreement for four-way classification was 68% ( $Kappa = .54$ ). The distribution of attachment classifications in this sample was 46% Secure, 27% Avoidant, 4% Ambivalent, and 23% Disorganized. For subsequent data analyses the participants classified Ambivalent ( $n = 2$ ) were combined with those classified Disorganized ( $n = 12$ ) into a Disorganized/Ambivalent (D/Am) group. This was done because of the small number of Ambivalent participants and the expectation that these two groups would be similar on most emotion measures. Other systems for coding attachment in middle childhood have also combined Ambivalent and Disorganized children into a single group (e.g., Verschueren & Marcoen, 1999).

The second way in which the Story Completion Task was scored was to rate the secure scriptedness of children's individual stories. Transcripts were read and scored for the presence or absence of secure-base prototypic scripted elements derived from Waters et al. (1998) and Bretherton et al. (1990). Where appropriate, secure scripts were theorized to include exploration with maintenance of contact, presence of a threat, a return to proximity, resolution of the problem by the caregiver, and a return to exploration. Because the Spilled Juice story involves a discipline encounter, it was difficult to score with the above criteria and was excluded (the Spilled Juice story is also not heavily weighted in the other method for scoring the Attachment Doll Story Completion Task). In the scriptedness scoring the prototypic secure Hurt Knee story included positive elements relating to the parent approaching, comforting, and aiding the child, as well as a quick resolution to the injury and a return to normal routines. Negative elements might include the parent failing to respond to the child's injury or even outright criticizing the child for falling. As in the Hurt Knee stem, positive elements for the Scary Figure stem include the parent approaching, comforting, and aiding the child. Afterwards the caregiver and child must return to a normal routine, with the child going to sleep and the parent usually following suit. Negative elements include the parent ignoring or downplaying the child's fears, the parent getting annoyed or irritated with the child, more than two parental interventions, or the presence of a real threat to the child (e.g., a burglar in the house). A prototypic secure Departure story was conceptualized as the child saying "goodbye" to the parent and then cooperating with the babysitter in a normal routine. Unlike in previous stories, some variability was acceptable in conceptualization of the "normal" routine, as often children would include non-normal activities (e.g., going out for treats) within this script. More important for this narrative were negative elements such as an incompetent or hostile babysitter or persistent distress on the part of the child at the caregiver's absence. As a resolution to the Departure story, the

prototypic positive Reunion story depicted the child as happy to see the parent as well as some positive interaction between the parent and the child taking place. The only negative element of this script was that of unusual and/or negative events and interactions occurring during the story (e.g., mother criticizes child on reunion, mother has car accident while returning home).

We adapted Waters et al.'s (1998) rank ordering technique to score the narratives. Waters et al. (1998) performed, for each story, a complete rank ordering of their 24 participants. The larger number of participants in our study made this task more difficult, so we derived a preliminary rank ordering based on the number of positive and negative elements in a story. Then, coders reread the transcripts and performed a final rank ordering, taking into account qualitative differences between the story narratives. Observer agreement was checked by having a second coder rank order one third of each story set. Observer agreement was good, with  $r$ s for ranking scores ranging from .76 to .84. For ease of interpretation, in the Results section the signs of all correlations for ranking variables were reversed so that positive correlations would reflect a positive association with attachment security.

A concern with narrative assessments is that they may be influenced by verbal skill. To test the discriminant validity of the attachment scoring from the interview, we used a word processing program (WordPerfect) to score the reading level and verbal complexity of a child's narratives. We then examined whether these measures of verbal skill were related to attachment classifications (using ANOVA) and secure scriptedness scores (using correlations). None of these analyses were significant, showing that secure children did not provide more verbally sophisticated narratives. In addition, we used Waters et al.'s (1998) criteria to score story elaborations (i.e., number of unique thought units in a story). We did not find attachment classification or scriptedness scores to be related to the number of story elaborations, possibly because many of the insecure stories in our sample that possessed odd content (e.g., threat to life of target child or AF) were highly elaborated. Thus, unlike at younger ages, when insecurely attached children often simply say, "I don't know" (Main et al., 1985), in preadolescence the narratives of insecurely attached children are not necessarily brief and unelaborated.

#### *Maternal willingness to serve as a secure base*

A questionnaire, based on the Child Rearing Practices Report (CRPR; Block, 1965), was used to assess mothers' willingness to serve as a secure base (SB). Rather than requiring a parent to q-sort the items, the questionnaire version of the CRPR (Rickel & Biasatti, 1982) asks mothers to rate the 91 items of child-rearing beliefs or practices in regards to the child participating in the study using a scale from 1 (not at all descriptive of me) to 6 (highly descriptive of me).

Ten items from the CRPR were used as indicators of a mother's willingness to serve as a SB (see Kerns et al., 2001). Sample items were "I respect my child's opinions and encourage him/her to express them" and "I encourage my child to talk about his/her troubles." The Cronbach alpha for the 10 items was .79. This scale has been demonstrated to show good reliability and validity; Kerns, Klepac, & Cole (1996) and Kerns et al. (2000) reported that mothers' reports had acceptable alphas and were related to child reports of security.

#### *Mood measures*

To assess everyday mood the child was asked to complete the Youth Everyday Social Interaction and Mood (YES I AM) Scales (Repetti, 1996). On this daily mood log the child



answered questions about their mood experience at three time-points during the day: first thing in the morning, after school, and just before bed. The children were instructed to confidentially complete the log on four consecutive days immediately following their lab visit, and then to return the log in a postage-paid envelope. Positive mood ( $n = 7$  items) and negative mood ( $n = 10$  items) were rated on a 4-point scale, and scores from the 12 daily reports were then averaged (internal consistency was .95 for positive mood and .97 for negative mood). As shown in Table II, positive and negative mood scores were not significantly correlated.

#### *Emotion regulation (ER) measures*

Mothers completed the Children's Coping Strategies Scale (Eisenberg et al., 1996) as a measure of the strategies their child uses when he/she is upset or has a problem. The mothers were asked to indicate how often their child performed a certain behavior when they were upset, with scores ranging from 1 (never) to 5 (very often). The statement "when my child is upset or has a problem, he/she . . ." was followed by responses such as "talks about how he/she is feeling" and "does something to solve the problem." A constructive coping score was achieved by summing separately the ratings for the positive coping methods (e.g., reframing, problem solving, seeking support) and the negative coping methods (e.g., aggression, avoidance) and then subtracting the negative score from the positive score. Validity for this measure has been previously demonstrated with constructive coping strategies related to peer reports of pro-social behavior (Eisenberg et al., 1996) and to security of attachment and peer competence (Contreras et al., 2000).

A second ER measure was the Frustration Tolerance subscale from the Teacher-Child Rating Scale, which was completed by a child's main classroom teacher. This measure comes from the Primary Mental Health Project (1995) and has demonstrated good test-retest reliability ( $r$ s of .61-.91). On the 5-item Frustration Tolerance subscale teachers rate the child's school behaviors (e.g., "copes well with failure"). A total of 38 teacher reports were completed for children participating in the study (internal consistency of .82). As shown in Table II, the two indices of ER were moderately related to one another. The mood and ER measures were unrelated to one another except for a positive correlation between positive mood and constructive coping.

#### *Negative emotionality*

A final variable assessed was negative emotionality. Mothers completed the Child Reactions: Parent Report, a shortened (10 item) version of the Affective Intensity Scale (Eisenberg, Fabes, Bernzweig, Karbon, Poulin, & Hanish, 1993). Mothers indicated how often their child responded emotionally to events on a scale from 1 (never) to 7 (always). A sample item is "When my child gets angry, it is easy for him/her to still be rational and not overreact"

Table II. Correlations among the mood and emotion regulation measures.

	Positive mood	Negative mood	Constructive coping
Negative mood	-.13		
Constructive coping	.34*	-.03	
Frustration tolerance	.12	.10	.45**

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

(reverse scored). The negative emotionality score was calculated by averaging across items, with higher scores meaning elevated emotional intensity ( $\alpha = .85$ ). Negative emotionality has been demonstrated to correlate negatively with measures of social competence (Contreras et al., 2000; Eisenberg et al., 1993, 1996). As we wanted to control for negative emotionality in the examination the relation between attachment and the variables of mood and emotion regulation, negative emotionality was used as a control variable in these analyses.

## Results

The first set of analyses examined associations among the different mother–child attachment-based measures. These analyses provided descriptive information regarding the degree of overlap of the measures, and they also were applied to choose a smaller set of attachment variables to include in subsequent analyses. The second set of analyses describes associations between attachment and mood and emotion regulation. All significance tests were 2-tailed.

### *Associations among attachment measures*

The scriptedness scoring yielded separate scores for four of the stories, which allowed us to examine whether children were consistent across stories. First, we calculated the correlations among the secure scriptedness scores for the Hurt Knee, Scary Figure, Departure, and Reunion stories. The correlations ranged from .08 to .39, with an average correlation of .23. We also performed a principal components factor analysis, and a single factor emerged, which explained 42% of the variance in the story scores. Finally, we calculated Cronbach's alpha to examine the reliability of a score based on all four scriptedness scores. This analysis yielded an alpha of .54, and the only story rating with an item-total correlation greater than .30 was the Reunion story (item-total  $r = .47$ ). Thus, collectively these analyses suggested there was substantial variability in children's security scores across stories.

We next used one-way ANOVA to test whether children's attachment classifications, based on the Granot and Mayseless (2001) system, were related to the scriptedness ratings for the individual stories. Significant univariate tests were followed by LSD comparisons of the secure (S), avoidant (Av), and Disorganized/Ambivalent (D/Am) groups to identify the nature of any group differences. We expected to find significant associations, given that we were examining convergence for two different approaches to scoring the same story stems. Nevertheless, these analyses allowed us to examine whether some stories were better than others for discriminating specific attachment groups. Mean scriptedness scores for the three attachment groups are displayed in Table III.

The three attachment classification groups did not differ significantly in their scores for the Hurt Knee story,  $F(2, 49) = 1.46$ . Scores did differ significantly for the Scary Figure story,  $F(2, 49) = 5.05$ ,  $p = .01$ . Posthoc tests revealed that children classified S were rated higher on scriptedness than were children classified D/Am,  $p < .01$ . There was also a marginally significant effect with children classified as Av receiving higher scriptedness scores than children classified D/Am,  $p < .08$ . In addition, there was a significant difference for the Departure story,  $F(2, 49) = 12.22$ ,  $p < .001$ , and similar to the Scary Figure story the effect was due to S and Av children receiving higher scores than D/Am children,  $ps < .01$ . There also was a significant difference for Reunion scriptedness ratings,  $F(2, 49) = 9.39$ ,  $p < .001$ . Posthoc tests on scriptedness scores for the Reunion story revealed that children

classified as S were rated higher than children classified as Av ( $p < .01$ ) or D/Am ( $p < .001$ ), but the latter two groups did not differ from each other. Thus, the Hurt Knee story did not discriminate the groups, the Scary Figure and Departure stories discriminated the D/Am from the others, and only the Reunion story discriminated the S from the insecure groups.

In subsequent analyses, we examined two variables based on the scriptedness scoring: a ranking average based on all four stories, and separately the scoring for the Reunion story. We were specifically interested in the Reunion story, because it was the only variable that discriminated securely attached children from all others, and because reunion behavior has been a strong marker of attachment quality at younger ages. The overall scriptedness score and the Reunion scriptedness score were strongly correlated, as shown in Table IV.

Finally, we examined how the children’s perceptions of security and the mother’s willingness to serve as a SB were related to one another and to the attachment interview (see top part of Table IV). There was a marginally significant positive association between these two variables, with children who reported a more secure attachment having mothers who reported a greater willingness to serve as a SB ( $p < .10$ ). Children’s security scores were not related to scriptedness ratings or attachment classifications from the interview. Maternal reports of willingness to serve as a SB were not related to the interview, except for a

Table III. Attachment classification group means (and standard deviations) of scriptedness scores for individual stories.

Story	Secure (Av)	Avoidant (D/Am)	D/Am comparisons	Posthoc
Hurt Knee	22.75 (15.95)	30.79 (11.96)	28.64 (16.04)	
Scary Figure	20.96 (15.80)	26.50 (14.13)	36.00 (10.30)	S, Av > D/Am
Departure	20.04 (13.49)	23.50 (14.48)	40.57 (8.31)	S, Av > D/Am
Reunion	18.08 (12.76)	31.96 (12.38)	35.46 (14.47)	S > Av, D/Am

Note: Means reflect group averages based on rankings assigned to participants for each story. The sample mean for each of the ranking variables was 26.5 (rankings could range from 1 to 52). Lower values reflect a higher score on the dimension of security (i.e., rankings closer to 1).

Table IV. Associations of mood and emotion regulation with continuous measures of attachment and maternal behavior (mother as AF).

	Security scale	Mother: Secure base	Scriptedness: Overall	Scriptedness: Reunion
<b>Attachment/maternal behavior</b>				
Security scale		.24+	.18	.18
Mother: Secure base			.18	.28*
Scriptedness: Overall				.74***
<b>Mood reports</b>				
Positive mood (child)	.27+	.37**	.15	.27+
Negative mood (child)	-.24+	.11	-.33*	-.30*
<b>Emotion regulation</b>				
Constructive coping (mother)	.26+	.69***	.27+	.42**
Frustration tolerance (teacher)	.01	.45**	.33*	.52***

+ $p \leq .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Note: Ns in analysis: positive mood, 47; negative mood, 46; coping, 49; frustration tolerance, 38.

significant association with Reunion scriptedness ratings, indicating that a greater willingness to serve as a SB was associated with children telling more secure Reunion stories.

*Tests of gender differences for attachment and emotion variables*

We calculated *t*-tests to check if there were any gender differences for our continuous, security based measures of attachment (i.e., child reports of security, mother reports of willingness to serve as a secure base, and the overall and reunion scriptedness scores). None of these analyses were significant. We also performed a Chi Square Analysis to check if attachment classifications from the Attachment Doll Story Completion Task varied by gender. The Pearson Chi Square test was significant,  $X^2(2, 52) = 9.78, p < .01$ . There were equal numbers of boys and girls in the sample, but examination of cell frequencies revealed that girls were more likely than boys to be classified as Secure (15 of 24) and Avoidant (9 of 14) but less likely to be classified as Ambivalent/Disorganized (2 of 14). Because the distribution across insecure attachment classifications was so unequal for boys and girls and the sample size was modest, we were unable to include gender as a second factor when examining relations between attachment classifications and the emotion variables. We also tested whether gender was related to our mood and emotion regulation measures. None of these *t*-tests was significant, although there was a marginally significant trend for negative mood,  $t = 1.82, p = .08$ . The trend was due to boys reporting higher negative mood than did girls, respective means 1.46 and 1.28.

*Associations of attachment with measures of mood and emotion regulation*

In the following analyses we examined child reports of security, maternal reports of willingness to serve as a SB, the average and reunion scriptedness scores, and attachment classifications from the Attachment Doll Story Completion Task in relation to mood and ER. We calculated correlations for the continuous measures of security and maternal behavior.<sup>1</sup> In addition, we calculated regressions to examine the variance in a specific emotion measure that was collectively accounted for by the set of continuous attachment measures. In regression analyses we entered negative emotionality on Step 1. Entering attachment variables on Step 2 thus allowed us to examine how attachment is relation to mood or ER after controlling for negative emotionality. We also used ANOVA to examine group differences based on attachment classifications (S, Av, D/Am).

*Attachment and mood.* Bivariate correlations between the attachment and emotion variables are displayed in Table IV. We found some support for our hypothesis that more securely attached children would report more positive mood in their daily logs. Children who reported more positive mood had mothers who reported a greater willingness to serve as a SB. In addition, children who reported greater security of attachment, and children who were rated more secure on their Reunion story, also reported more positive mood, although these findings were only marginally significant ( $p < .07$ ). In regression analysis, negative emotionality entered on Step 1 predicted 6% of the variance in positive mood ( $p < .10$ ; see Table V). When the attachment variables were entered as a block on Step 2, the test for *F* change was significant, and the attachment variables predicted an additional 19% of the variance in positive mood. We also tested whether attachment classification was related to positive mood, but this effect was not significant,  $F(2, 44) = .15$ .

Similar sets of analyses were calculated to examine associations between attachment and negative mood. Negative mood was not related to mothers' reports of parenting and showed

Table V. Regression analyses with emotionality (step 1) and attachment (step 2) as predictors of mood and emotion regulation.

Dependent variable	Emotionality (step 1)		Mother–child attachment (step 2)	
	<i>F</i> Change	<i>R</i> <sup>2</sup> Change	<i>F</i> Change	<i>R</i> <sup>2</sup> Change
<b>Mood</b>				
Positive mood	2.96	.06	2.65*	.19
Negative mood	1.74	.04	2.42+	.19
<b>Emotion regulation</b>				
Constructive coping	1.70	.04	11.74***	.50
Frustration tolerance	4.62*	.11	5.31**	.35

+*p* < .07; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

Note: *N*s in analysis: positive mood, 47; negative mood, 46; coping, 49; frustration tolerance, 38.

only a marginally significant association with child reports of security (*p* = .10), but was related significantly to the scriptedness ratings. Specifically, as shown in Table IV, children who received higher overall scriptedness scores and children who told more secure Reunion stories reported less negative mood. In regression analysis, Step 1 (emotionality) was not significant. At Step 2, the attachment variables explained an additional 19% of the variance, although the test for *F* change was only marginally significant (see Table V).

Attachment classification was also significantly related to reports of negative mood, *F*(2, 43) = 3.19, *p* = .05. This effect was still significant when emotionality was included as a covariate. Posthoc comparisons revealed that children classified as D/Am reported more negative mood (*M* = 1.58) than did children classified S (*M* = 1.32) or Av (*M* = 1.27), *p*s < .05. S and Av children did not differ from each other on reports of negative mood.<sup>2</sup>

#### *Attachment and emotion regulation*

We expected more securely attached children to use more constructive coping strategies. Although an ANOVA test revealed that attachment classification was not related to coping, our continuous attachment-based measures were. More specifically, children who were reported by their mothers to use more constructive coping had mothers who reported a greater willingness to serve as a SB and received higher secure scriptedness ratings on the Reunion story (see Table IV). In addition, there were marginally significant associations (*p*s < .07) between constructive coping and children’s perceptions of attachment security and the average secure scriptedness score. In regression analyses, Step 1 was not significant, with emotionality accounting for only 4% of the variance in coping. As shown in Table V, Step 2 did produce a significant *F* change, with the attachment variables accounting for an additional 50% of the variance in coping.

Our last analyses tested whether children who are securely attached are better able to tolerate frustration in the classroom. As shown in Table IV, all of the attachment measures except children’s perceptions of security were related to teacher reports of frustration tolerance (FT). Thus, children with mothers who reported a greater willingness to serve as a SB, and children who received higher scriptedness scores on the interview aggregate or the Reunion story, were rated by teachers as better able to tolerate frustration at school. In regression analysis, Step 1 was significant; with Emotionality accounting for 11% of variance in FT. Step 2 also was significant, with the attachment variables accounting for an additional

35% of the variance in FT. Although the continuous measures were related to FT, an ANOVA test comparing children of different attachment classifications was not significant,  $F(2, 35) = .20$ .

## **Discussion**

One goal of the present study was to test the validity of different attachment-based measures of the mother–child relationship. Our measurement battery included an interview that incorporated the story stem technique, which to date has been used primarily with younger children (Solomon & George, 1999; von Klitzing, Kelsay, & Emde, 2003). This method allowed for two different approaches to scoring the attachment narratives. In addition to assigning attachment classifications based on the story themes and narrative coherence, we employed a script-based approach to score security. Both of the interview scoring methods showed some associations with children’s mood and emotion regulation, although findings were stronger for the coding that was based on the scriptedness approach. In addition, there was some evidence of discriminant validity in that attachment scores were not related to indices of the reading level or verbal complexity of children’s stories. The present study extends the findings of Granot and Mayselless (2001) who demonstrated that attachment classifications from the Attachment Doll Story Completion Task were related to preadolescents’ school adjustment, but were not related to measures of logical reasoning or linguistic skill. The two studies thus suggest that the story-stem technique may be a useful tool for assessing attachment in preadolescence.

The study also revealed some of the complexities that arise in the use of the story-stem technique. The low to moderate correlations among the scriptedness scores for different mother–child stories is similar to results found for ratings of preschoolers’ story narratives (von Klitzing et al., 2003; Waters et al., 1998). By contrast, scriptedness scores for adolescents are highly correlated across stories (Elliot, Tini, Fetten, & Saunders, 2003), especially when adolescents tell stories about the same relationship (e.g., mother–child). Our results suggest that preadolescents’ secure base scripts may still be somewhat situationally specific rather than fully integrated into a single, consistent secure base script. In combination with other results from the study, this finding also highlights the need for careful selection of story themes that are appropriate to the particular question under study. One issue is that different story themes may be more or less sensitive as indicators of particular attachment patterns. For example, in our study we found that the Reunion story discriminated secure children from all others, whereas the Scary Figure and Departure stories discriminated the disorganized/ambivalent group from all others. Thus, different stories may be needed, depending on whether an investigator is interested in contrasting specific insecure attachment groups.

Our study also suggests the need to attend to developmental and cultural issues when choosing story themes. In American culture, with its emphasis in preadolescence on the emergence of autonomy and the need to control emotion (Maccoby, 1984; Parker & Gottman, 1989), the Hurt Knee story was not very diagnostic; for most of the American children in our sample, a scraped knee was something to minimize, and even children who told other secure stories did not focus on the child’s emotional response when presented with this story. This contrasts with Israeli samples where there is a stronger focus on emotion in the Hurt Knee story, and consequently this story is one of the best discriminators between secure and avoidant attachment in that cultural context (Granot & Mayselless, personal communication, 2003). The Reunion story showed the strongest associations with parenting and the emotion variables, suggesting that reunions may continue to be a sensitive context

for assessing attachment at older ages. There may be other story themes that address developmentally salient issues in preadolescence and thus provide sensitive contexts for examining secure base behavior. For example, friendships are important to children in preadolescence, and we are currently piloting a story in which we are examining how parents provide secure base support to children when they experience conflict with a friend.

One aspect of evaluating multiple attachment-based measures was to examine the degree of overlap in the different approaches. Both narrative approaches and questionnaires have been developed to assess attachment in adolescence and adulthood (Crowell, Fraley, & Shaver, 1999). In addition to the attachment interview, we included in the present study a child questionnaire to assess attachment security and a parent questionnaire to assess mothers' willingness to serve as a SB. The latter represents an aspect of parental behavior that conceptually is related to secure attachment (Kerns et al., 2000). In the present study, although there were associations between different methods for scoring the interview, questionnaire assessments were not related to the interview, except that mothers' willingness to serve as a SB was related to secure scriptedness ratings for the Reunion story. In addition, there was a marginally significant association between child and mother questionnaires, with children who reported a more secure attachment to their mothers having mothers who also reported a greater willingness to serve as a SB to their child.

An important question is how much overlap to expect when different techniques are used to assess the attachment construct. In early childhood, different measurement approaches have often showed low to modest associations with one another (see Solomon & George, 1999, for a review). For example, a meta-analysis found a modest association ( $r = .31$ ) between security assessed in the Strange Situation and security assessed with the Attachment Q-sort (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). In adolescence and adulthood, associations between interview and questionnaire measures of attachment are typically low, and usually not significant (Crowell et al., 1999). In prior studies in middle childhood, questionnaire and interview measures of attachment have shown some associations with each other (Granot & Mayseless, 2001; Kerns et al., 2000). Despite the low associations among the different attachment based measures in the present study, as discussed further below most of the measures showed evidence of construct validity in that they were related to measures of mood and/or emotion regulation. The results from the present study, as well as earlier research, suggest that different measurement approaches tap different facets of the attachment construct. We believe that it is important to include multiple attachment measures in any given study to provide a broader assessment of the construct and to avoid an over-reliance on a single method (i.e., to study the construct rather than one specific way to operationalize the construct).

Although this study included multiple measures of attachment, we did not include a measure based on an analysis of the content and coherence of children's autobiographical memories of experiences with caregivers. The Adult Attachment Interview (AAI) is an autobiographical interview that was developed to assess an adolescent's or adult's state of mind in regard to attachment (Main et al., 1985). Recently investigators have explored the possibility of adapting the AAI interview procedures for children as young as 8 years of age, scoring either for general state of mind in regard to attachment (Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000) or for security in a particular parent–child relationship (Target, Fonagy, & Schmueli-Goetz, 2003). Attachment classifications and ratings based on AAI procedures developed for younger children have shown adequate test–retest reliability (Target et al., 2003) and some associations with parental AAIs (Ammaniti, Speranza, & Fedele, 2005; Target et al., 2003). In one study, child AAI classifications also showed significant stability between ages 10 and 14 years (Ammaniti et al., 2000). As yet, child AAI

measures have not shown associations to indices of children's social adaptation, or been related to other concurrently obtained measures of attachment. Nevertheless, initial data on reliability and validity suggest it may be fruitful to test further child narrative measures based on the AAI methods and scoring, with age appropriate modifications for scoring dismissing attitudes and coherence (see Ammaniti et al., 2000).

A second goal of the present study was to extend research on mother–child attachment and its links to children's moods and emotion regulation. Attachment was related to the emotion constructs, even after controlling for one aspect of temperament, negative emotionality. In addition, we found relations both within and across sources (i.e., mother report, coder scoring of interviews, and teachers). Our child questionnaire measure of attachment showed the weakest pattern of effects; although effects were usually in the predicted direction, associations were only marginally significant, suggesting that child questionnaire may be less sensitive than the other techniques, and thus less useful in small samples where there is diminished power to detect effects.

Measures of mood, collected three times a day and aggregated across four days, allowed for trait rather than state assessments of positive and negative mood. We found that both positive mood and negative mood were related to our attachment-based measures, which collectively accounted for approximately 19% of the variance in mood scores. Positive mood was most strongly related to maternal reports of willingness to serve as a SB. It may be that synchronous, harmonious interactions with caregivers both directly enhance mood during parent–child interaction (Lay, Waters, & Park, 1989) and, when this interaction style is internalized and enacted with other social partners, enhance positive affect in other contexts as well such as in interactions with peers (Park & Waters, 1989; Sroufe et al., 1984). Social cognitive processes might also play a role, with more securely attached children showing a bias toward more positive recall of prior positive events (Gentzler & Kerns, 2006), which may then enhance positive mood. Negative mood was most strongly related to interview measures of attachment. Children who told stories rated higher on secure scriptedness reported less negative mood. The classification results showed that the disorganized/ambivalent group could be discriminated from the secure and avoidant groups in that they reported the highest levels of negative mood. The latter finding is consistent with other research suggesting that in middle childhood disorganized or ambivalent children may be particularly prone to experiencing internalizing symptoms such as depression or anxiety (Carlson, 1998; Finnegan, Hodges, & Perry, 1996; Graham & Easterbrooks, 2000).

The attachment-based measures were even more strongly related to emotion regulation, collectively accounting for 35–50% of the variance in the specific emotion regulation indices. We replicated an earlier study showing that securely attached children employed more constructive coping techniques than less securely attached children (Contreras et al., 2000). We also replicated earlier studies that showed attachment in middle childhood is related to children's emotion regulation at school (Kerns et al., 2000; Sroufe et al., 1990). The present study thus contributes to the small set of studies showing that, in middle childhood, securely attached children manifest more adaptive regulation of emotion in a variety of contexts. A greater capacity to regulate emotions may in turn be an important mechanism that partially explains why more securely attached children show more adaptive social functioning, such as the capacity to form high quality relationships with peers (Contreras & Kerns, 2000). The associations between attachment and emotion regulation, while confirming an important theoretical hypothesis, nevertheless requires additional explanation. A secure attachment relationship may directly enhance emotion regulation in that a responsive and available caregiver is able to help a child calm down. In addition, a feature of secure mother–child dyads is open communication regarding emotion (Cassidy,



1994). There is some evidence that mothers of more securely attached children may, during dialogues regarding emotion, engage in specific parenting practices that foster emotion understanding in children (Laible & Thompson, 2000; Oppenheim, Koren-Karie, & Sagi-Schwartz, 2004). Research on attachment could be extended by considering further how attachment is linked to the socialization of emotion.

We used two different methods to score the Attachment Doll Story Completion Task. Not surprisingly, the two methods converged with one another, in that children who were classified secure on the Attachment Doll Story Completion Task also were rated as telling stories that more clearly reflected a secure base script. However, the two scoring methods were not redundant as evident by how they related to one another as well as their relations to other variables in the study. As noted earlier, some stories were especially useful for distinguishing secure children from particular insecure groups. Another difference is that there were gender differences for the attachment classifications but not for the scriptedness scoring. It will be important to examine if this result replicates in larger, more diverse samples. In addition, although we expected that both methods of scoring the interview would show consistent relations to measures of emotion, we found scriptedness scoring consistently related to both mood and emotion regulation, but relatively few attachment classification differences on the emotion variables. The latter findings could be due to the small number of children in the insecure groups. Alternatively, it could be due to limitations that occur when classifications are used, such as a failure to capture variation within a group (e.g., some children more avoidant than others) or the forcing of a continuously distributed variable into artificial categories which fail to “carve nature at its joints” (see Fraley & Spieker, 2003). Scoring methods are also constrained by theory development. There has been relatively little discussion of how the specific manifestations of different attachment patterns might change across development. The classification coding was much more difficult to do than the script coding, in part because there is currently some ambiguity regarding how secure and insecure patterns are manifested in the preadolescent years (e.g., how much independence from vs. dependence on the caregiver or how much expression of feelings would be expected from a secure preadolescent child, in a particular cultural context).

There are some limitations to the study which need to be addressed in future research, in addition to those already noted. Although our study allowed for testing a relatively new interview measure of attachment in a different cultural context, our sample was relatively small and homogeneous. As a next step it will be important to test the measure further in more diverse samples. In addition, different cultural and ethnic contexts vary in how emotions are socialized, and it is therefore also important to evaluate whether the associations found in this study between attachment and emotion replicate in other ethnic and cultural groups. The sample size also did not provide enough power to test whether effects differed for boys and girls. Larger samples are needed to examine whether gender moderates associations between attachment and emotional development.

In summary, the present study provides information on the validity of several attachment-based measures of the mother–child relationship. The findings suggest that story stem techniques may be useful assessment tools in preadolescence, although there needs to be careful selection of story themes. The script-based approach, which is a simpler and easier technique for scoring story stem interviews than more clinically oriented systems, may be particularly useful if an investigator is primarily interested in individual differences in security (rather than specific insecure attachment patterns). One strength of the study was the inclusion of multiple measures of the attachment and emotion constructs, with data gathered from different sources. Our findings suggest that attachment may be more highly related to emotion regulation than to mood. Additional research is needed to understand

whether these associations might be due to specific emotion socialization practices of parents.

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## Notes

- 1 A reviewer asked whether the patterns of associations between attachment and the mood and emotion regulation variables differed for boys and girls. This was difficult to evaluate in our sample, given the total sample size, which provided a maximum of 26 cases in an analysis once the sample was divided on gender. For example, for some variables the magnitude of the correlations were similar for boys and girls, and similar to the total sample correlation, but were not significant when examining boys and girls separately due to low power in the analyses. We did calculate all correlation pairs in Table IV separately for boys and girls, and then applied a  $z$ -test to see if the correlations for boys and girls were significantly different. Only one of 16 tests was significant. It should be acknowledged that this test is very insensitive in small samples due to the large confidence intervals around the correlations. We concluded from examining the correlations that there were not consistent gender differences, although we also believe that we have limited power to address the question and we hope that the important question regarding gender differences in the correlates of attachment can be addressed in larger studies.
- 2 Only two children were initially classified as Ambivalent, and we included them with the Disorganized children because we expected, based on theory, that the two groups would score similarly on our emotion measures. For descriptive purposes we did examine the negative mood means separately for the Ambivalent ( $n = 2$ ,  $M = 1.71$ ) and Disorganized children ( $n = 9$ ,  $M = 1.55$ ), and both groups were higher than the Secure ( $n = 22$ ,  $M = 1.32$ ) and Avoidant ( $n = 13$ ,  $M = 1.27$ ) children. When the ambivalent children were excluded, the ANOVA univariate test for the other three attachment groups was no longer significant, although posthoc pairwise tests showed that the Disorganized children reported more negative mood than did the Secure children ( $p = .09$ ) or the Avoidant children ( $p = .05$ ).

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