

The Meaning and Measurement of Attachment in Middle and Late Childhood

Kathleen M. Dwyer

University of Maryland, College Park, Md., USA

Key Words

Attachment · Measurement · Middle childhood

Abstract

This paper is organized to highlight gaps in our current understanding of attachment during the middle and later years of childhood and to allow researchers to make informed decisions regarding measurement selection. First, theoretical and methodological considerations with respect to the study of attachment during this age range are discussed. Thereafter, all published self-report and interview-based measures that have been used with normative samples of children aged eight through twelve years are examined and evaluated in detail in terms of the available evidence of their reliability and validity. Finally, advantages and disadvantages of the measures are highlighted, and specific recommendations are suggested for further research.

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For not only young children, it is now clear, but human beings of all ages are found to be at their happiest and able to deploy their talents to best advantage when they are confident that, standing behind them, there are one or more trusted persons who will come to their aid should difficulties arise.
[Bowlby, 1973, p. 359]

According to attachment theory [e.g., Ainsworth, 1985; Bowlby, 1982], attachment does not disappear with age but rather continues throughout the life span. The predictable outcome of attachment behavior remains proximity and/or communication with the attachment figure, although the means for achieving this end may indeed change drastically with age [Bowlby, 1982]. An enormous amount of research has been conducted to examine the development of attachment during infancy, including the predictors, correlates, and sequelae of individual differences in patterns

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0018-716X/05/0483-0155\$22.00/0

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Kathleen M. Dwyer, Department of Human Development
3304 Benjamin Building, University of Maryland
College Park, MD 20742 (USA)
Tel. +1 301 405 5194, Fax +1 301 405 7735
E-Mail kdwyer@umd.edu

of attachment. This research has been extended to include attachment during the early childhood years [Belsky & Cassidy, 1994]. Likewise, researchers have similarly examined adults' general representations regarding attachment, and this research has been extended to include attachment during adolescence, particularly late adolescence [Belsky & Cassidy, 1994]. However, relatively little attention has been given to attachment during middle and late childhood.

The Meaning of Attachment in Middle and Late Childhood

In expanding attachment theory and research beyond infancy, researchers are faced with important conceptual and methodological issues. Theoretical propositions are needed to guide research on the nature of development beyond infancy, the role of multiple attachment figures, relations among relationship systems, and the development of internal working models [Thompson & Raikes, 2003]. Methodologically, new measures of attachment must be validated, with consideration of the criteria against which measures ought to be validated and theoretical notions regarding the development of attachment [Thompson & Raikes, 2003]. In the present paper, the meaning of attachment during late childhood is discussed, with attention to both normative development and individual differences, followed by a discussion of the measurement of attachment during middle and late childhood and a review of the existing measures of this construct for this age group.

Developments beyond Infancy

Attachment behavior does not remain unchanged beyond infancy. For example, a major transformation occurs with the development of the capacity for what Bowlby [1982] termed a 'goal-corrected partnership' with the attachment figure. With the advances in cognitive ability that take place during the preschool years, children are better able to understand that caregivers have their own goals, motivations, and feelings and can consider these factors when formulating plans to achieve their own attachment-related goals. In addition, developments taking place in adolescence, including the acquisition of formal operational thinking, decreases in egocentrism, and opportunities for objective examination of parent-child relationships may allow for the emergence of general representations of relationships [Allen & Land, 1999; Bowlby, 1973]. Finally, there are reasons to believe that transformations in the attachment system may take place across middle and late childhood, although perhaps to less drastic degrees than in early childhood or adolescence.

Throughout the years of childhood, cognitive abilities improve and knowledge bases increase [Collins, Madsen, & Susman-Stillman, 2002]. As a result, social-cognitive abilities also improve. Children become more skilled in perspective-taking and have access to greater numbers of increasingly sophisticated strategies for dealing with social situations [Selman, 1980]. Thus, children's attachment relationships become more and more complex, as they become more adept at understanding others' points of view and adjusting their goals and strategies accordingly [Bowlby, 1982]. Furthermore, actual presence or absence of an attachment figure is decreasingly influential, whereas expectations regarding the responsiveness and

availability of an attachment figure are increasingly influential, throughout the years of childhood [Bowlby, 1973].

Also during middle childhood, children's self-concepts and their conceptions of others become more comprehensive, such that they increasingly focus on inner traits and encompass generalities across behaviors [Harter, 1998]. With a more solid sense of self, children are increasingly able to regulate their own behaviors. Consequently, the attachment behavioral system is activated less frequently [Bowlby, 1982]. In addition, more autonomy is gradually granted and expected by parents [Collins et al., 2002], and children begin to spend more time away from parents and in the company of peers and unrelated adults, allowing for opportunities to compare relationships with one another. Thus, representations of relationships are likely to become more sophisticated, abstract, and general across the childhood years. Yet, children at this stage are still likely to think about themselves and others in terms of opposites (e.g., nice or mean) and to fail to detect inconsistencies across representations [Harter, 1998]. Thus, although the rudiments of a general state of mind with respect to attachment may be in place, an overarching attachment organization will not be formed until contrasting representations of the self and relationships with multiple attachment figures can be integrated with one another.

Given these developments, then, what is the meaning of attachment behavior in middle childhood? Throughout life, the purpose of attachment behavior is the deactivation of the attachment system, a behavioral system activated in times of distress (e.g., fear, separation). More specifically, the purpose of attachment behavior is the promotion of proximity or communication with a specific figure in the service of feeling secure and, thus, deactivating the attachment system [Hinde, 1997]. During the later years of childhood, communication with the attachment figure, rather than physical proximity, may become the more frequent outcome of attachment behavior [Bowlby, 1982]. Accordingly, it may be that communication with the attachment figure deactivates the attachment system and allows for the activation of other important behavioral systems, such as the exploratory and sociable systems. However, it is worth mentioning that the desire for physical closeness is still obvious during the elementary-school years: Children still hold their parents' hands when they are nervous, go to their parents when they are sick, and even sit on their parents' laps when they are sad, frightened, or otherwise need comfort.

The behaviors that comprise the attachment behavioral system also change as children become more skilled at communicating their attachment needs through speech. However, it is important to note that, although speech may supplement emotional expression and behavior, 'emotion-mediated communication' remains an important component of intimate relationships throughout life [Bowlby, 1988]. Thus, children in the later years of childhood may communicate their attachment needs to attachment figures by not only talking about but also openly expressing their distress.

Individual Differences in Attachment

In addition to issues of normative development there are questions of individual differences to be addressed. Indeed, most researchers studying attachment are interested in individual differences in attachment security.

According to a narrow view of attachment (and the view originally proposed by Bowlby), security is fostered by the caregiver's availability and responsiveness in distress situations [Thompson, 1998]. In that sense, attachment security is the child's confidence in the caregiver's availability and responsiveness in times of distress [Bowlby, 1973]. Behaviorally, secure attachment would manifest itself beyond infancy as free communication between the caregiver and the child, particularly in times of distress, and the child's use of the caregiver as a 'secure base' for exploration during times of non-distress. Regarding representations, the securely attached child would have a mental model of the caregiver as responsive and available and a corresponding model of the self as worthy of care. Although there may be variations in representational models (or 'internal working models') across relationships, the securely attached child will have begun to see him/herself as a person who is worthy of love in general. Finally, discourse regarding attachment-related situations should reveal not only secure behavior and representations but also easy access to all aspects of internal working models of the caregiver and the self (indicating the absence of 'defensive exclusion,' or selective exclusion from processing of painful attachment-related thoughts and feelings).

Consistent with this narrow perspective, attachment security does not encompass all, or even most, aspects of the parent-child relationship [Thompson, 1998]. Although attachment security may be related, for example, to positive parent-child relationship quality and children's perceptions of supportive parenting, the constructs are not identical (again, according to this narrow view). Therefore, by specifically defining attachment, as opposed to espousing a broader view of the parent-child relationship, researchers may be able to uncover the possible differential effects of attachment security and other qualities of the parent-child relationship on child development.

It is also important to note that gender and cultural differences are to be expected in the development of the attachment behavioral system beyond infancy. As in infancy [van IJzendoorn & Sagi, 1999], it is likely that there are cultural differences in the situations that activate the attachment system. Children are likely to be more or less distressed by particular situations depending on experiences and expectations within their culture. Additionally, the manner in which attachment needs are communicated is also likely to vary across cultures and genders, as children are socialized within their culture as to what is appropriate and inappropriate to express. Variation across cultures in the expression of negative emotions may also influence the manner in which attachment needs are communicated. Signals may be more subtle when the expression of negative emotions is discouraged. Finally, expectations of autonomy and independence (e.g., for boys and girls, for children in collectivistic and individualistic societies) may influence both the activation and deactivation of the attachment behavioral system.

The Measurement of Attachment in Middle and Late Childhood

In terms of measuring attachment, normative developments beyond infancy, including children's increasing ability to develop and execute complex plans to achieve their goals (e.g., proximity to and/or communication with an attachment figure), make behavioral assessments much more difficult. Indeed, few researchers

have even attempted to observe attachment behavior beyond early childhood. Rather, following Main, Kaplan, and Cassidy's [1985, p. 67] reconceptualization of 'individual differences in attachment classifications as individual differences in the representation of the self in relation to attachment,' several researchers have examined attachment-related representations revealed through discourse analysis. In addition, a number of researchers have utilized self-report questionnaires to assess various components of attachment, including both behavior and representations.

Approaches to Measurement of Attachment beyond Infancy

Attachment-related discourse analysis and self-report questionnaires represent two contrasting approaches to the study of attachment security. Each has its own set of assumptions, and decisions to use a particular measure must be made with consideration of these assumptions. On the one hand, the interview-based measures assume that an individual's 'state of mind with respect to attachment' may be inferred from the content and quality of narratives elicited through interviews regarding relationships with their parents [Crowell, Fraley, & Shaver, 1999]. On the other hand, the self-report measures assume that an individual can accurately describe his or her own thoughts, feelings, and behaviors relevant to attachment [Crowell et al., 1999]. Is it possible for individuals to report on their own thoughts, feelings, and behaviors relevant to attachment? Adult attachment researchers, including those interested in individual differences in 'state of mind with respect to attachment' and those interested in 'attachment styles' in romantic relationships, have debated this issue for years.

There are theoretical reasons to be cautious regarding self-reports. According to Bowlby [1980], the rules that guide the processing of attachment-relevant thoughts and feelings become so 'overlearned' during childhood and adolescence that they often operate outside of conscious awareness and are applied automatically. Therefore, what may have once been healthy to exclude from awareness because it would be too painful to manage, may later (through overlearning and automatic processing) become an unhealthy 'defensive exclusion' [Bowlby, 1980]. For example, avoidant six-year-olds have been reported to insist that they are perfect in every way [Cassidy, 1988], and adults classified as avoidant, based on analysis of their attachment-related discourse, tend to dismiss the importance of attachment processes yet idealize their formative experiences with caregivers [e.g., 'my mother was a saint'; Cassidy & Kobak, 1988]. Indeed, Ainsworth [1985] explicitly cautioned: 'do not take at its face value a person's self-reports of security, high self-esteem, high sense of competence or freedom from stress and anxiety, even though more credence may be given to self-reports of insecurity, low self-esteem, feelings of incompetence and stress' [p. 798].

Cassidy and Kobak [1988], however, emphasize the importance of examining attachment behavior and representations in relation to their context and organization, rather than simply focusing on their frequency or content. As well, the authors suggest that carefully worded self-report items may be able to tap avoidance and other defensive processes. For example, avoidant individuals may admit to distancing themselves from important others, but they may not admit that stressful situations

Table 1. Overview of reviewed measures

| Measure | Citation | Major variables |
|---|--|--|
| <i>Self-Report Measures</i> | | |
| Security Scale | Kerns, Klepac, & Cole [1996] | Felt security with mother/father |
| Coping Strategies Questionnaire | Finnegan, Hodges & Perry [1996] | Preoccupied & avoidant coping strategies with mother/father |
| Inventory of Parent and Peer Attachment | Armsden & Greenberg [1987] | Attachment to parent |
| <i>Projective Techniques</i> | | |
| Modified Doll Story Completion Task | Granot & Maysless [2001] | Security & insecurity within the attachment relationship; classification as secure, avoidant, ambivalent, disorganized |
| SAT: Slough & Greenberg System | Slough & Greenberg [1990] | Attachment, self-reliant, avoidant responses to pictured separations |
| SAT: Resnick System | Resnick [1993] | Classification as secure/autonomous, dismissing, preoccupied/enmeshed |
| <i>Interview Measures</i> | | |
| AICA | Ammaniti, van IJendoorn, Speranza, & Tambelli [2000] | Classification as secure, dismissing, preoccupied, unresolved |
| CAI | Target, Fonagy, & Shmueli-Goetz, [2003] | Classification as secure, insecure |

activate their attachment systems or have emotional meaning for them [Cassidy & Kobak, 1988]. Thus, self-report of attachment security may be possible, but researchers must ensure that they are not simply relying on the child's report to assess thought and emotional processes that may take place without conscious awareness.

Overview of Review and Criteria for Inclusion of Studies

In the present report, I review measures of attachment for use during middle and late childhood. For the purpose of this report, this developmental period is defined as ages 8 to 12. I have included measures created specifically for use during this age range, as well as those measures originally designed for use with other age groups but recently adapted for or used with school-age children. Only measures of the narrowly defined construct of attachment (i.e., confidence in the accessibility of the caregiver in times of distress) have been included. Thus, I have excluded measures that may assess a broader quality of the parent-child relationship (e.g., positive parent-child relationship quality, perceived support). Finally, I have included only those measures that have been used with normative samples during this age range.

Eight relatively new measures of attachment in middle and late childhood are reviewed. The first three are self-report questionnaires: the Security Scale, the Coping Strategies Questionnaire, and the Inventory of Parent and Peer Attachment. The following three are projective techniques: the Modified Doll Story Completion

Task and two variations of the Separation Anxiety Test (SAT). Finally, the last two measures are variations of the Adult Attachment Interview (AAI): the Attachment Interview for Childhood and Adolescence and the Child Attachment Interview. Table 1 presents an overview of the main instruments and the major variables they were designed to measure. Each of these self-report, projective, and interview measures is described in this paper; in addition, issues relevant to validation of the measures, including scale reliability (e.g., internal consistency and short- and long-term stability), criterion-related validity (e.g., relations to other valid measures of attachment), and construct validity are highlighted.¹

In terms of criterion-related validity, it is important that, at present, there are no observational measures of attachment for the period of middle to late childhood, nor is there a 'gold standard' measure against which to assess validity during this time period. Thus, the best evidence for criterion-related validity would include relations with earlier security in the Strange Situation or later security with the AAI. Observational research, whether in a naturalistic setting (e.g., home observation) or in a contrived setting designed to elicit attachment behavior, is desperately needed in order to provide a behavioral criterion against which to measure the new self-report and interview measures.

Regarding construct validity, attachment theory provides a number of specific hypotheses to be tested. First, following Bowlby's [1973] contention that representations of attachment figures are 'tolerably accurate' reflections of actual experience, attachment security should be positively related to caregiver availability and responsiveness, particularly in times of distress. Second, attachment security should predict 'other important aspects of development' [Solomon & George, 1999]. Specifically, attachment security should be related to child self-esteem, self-reliance, fear and anxiety (e.g., internalizing problems), anger and hostility (e.g., externalizing problems), and qualities of other close relationships [Berlin & Cassidy, 1999]. Yet, it is also important to note that attachment security should not be related to all positive outcomes.

A third prediction concerns the issue of 'lawful discontinuity.' Due to pressures originating within the child (i.e., internal working models guiding future interactions and relationships) and external to the child (i.e., family environments remaining relatively unchanged), attachment organization should remain stable over time, although the specific behaviors may change according to developmental stage and situation [Bowlby, 1973]. However, a substantial change in family environment or parent-child relationship could be expected to influence the security or insecurity of the attachment relationship [Belsky & Cassidy, 1994]. Tests of this hypothesis would involve examining links between short-term and long-term changes in attachment security and changes in the relationship with the attachment figure. Although several researchers have examined changes in attachment security over time, none has yet examined relations between these changes and the ongoing relationships with attachment figures. Thus, at this time, stability data

¹ Note that I used the format of the Solomon and George [1999] chapter in the *Handbook of Attachment* as a guide in the organization of this review.

provide evidence for the reliability of the measures rather than evidence of construct validity.

Finally, although it is clear to which constructs attachment security should be related, it is less apparent to which constructs it should be unrelated. In terms of discriminant validity, measures of attachment security should be unrelated to temperament, intelligence, and verbal ability.

Self-Report Measures

In terms of the self-report measures, three promising attachment-related questionnaires have been developed in recent years.² The first is a measure of ‘felt security’ designed for use during middle childhood [Security Scale; Kerns, Klepac, & Cole, 1996]. The second is a measure of coping strategies, also designed for use during middle childhood [Coping Strategies Questionnaire; Finnegan, Hodges, & Perry, 1996]. Although not a measure of attachment security per se, the latter is included in the present review because the authors intended it to be used in conjunction with a measure of felt security in order to assess patterns of insecurity. The third self-report measure included in the present review was originally designed to assess parent and peer attachment during adolescence [Inventory of Parent and Peer Attachment; Armsden & Greenberg, 1987] but has recently been used to assess attachment in several samples of preadolescents.

Security Scale

The Security Scale [Kerns et al., 1996] is a self-report questionnaire designed for use with children during the period of middle childhood. It assesses children’s perceptions of security in specific parent-child relationships during middle childhood. The scale provides a continuous measure of security, with items tapping the child’s belief in the responsiveness and availability of the attachment figure, the child’s use of the attachment figure as a safe haven, and the child’s report of open communication with the attachment figure.

Internal Consistency and Stability (Test-Retest Reliability). Several researchers have found the Security Scale to be internally consistent across a number of samples, with coefficient alphas ranging from 0.64 to 0.93 for attachment to the mother and 0.81 to 0.88 for attachment to the father [Granot & Mayseless, 2001; Kerns et al., 1996, 2000, 2001; Lieberman, Doyle, & Markiewicz, 1999; Verschueren & Marcoen, 2002]. However, it is noteworthy that the lowest alpha (0.64) was reported for

² Two additional self-report measures of perceived emotional support in the parent-child relationship [Network of Relationships Inventory; Furman & Buhrmester, 1985; My Family and Friends; Reid, Landesman, Treder, & Jaccard, 1989] have been used to approximate attachment security in middle to late childhood [e.g., Booth, Rubin, & Rose-Krasnor, 1998; Karavasilis, Doyle, & Markiewicz, 2003; Rubin, Dwyer, Booth-LaForce, Kim, Burgess, & Rose-Krasnor, 2004]. However, these *proxy* measures are not included in the present review in order to focus the analysis on measures of the narrowly defined construct of attachment.

the youngest group of children (third-graders). As well, fewer than half of the studies included an assessment of felt security with respect to the father, although those that did revealed good internal consistency for the scale. It is also important to note that the samples have been predominantly North American, white, and middle class, although the measure has also been used in two samples outside North America (Israel and Belgium). The measure has also been found to be stable across a short time period (approximately two weeks), with a test-retest correlation coefficient of 0.75 [Kerns et al., 1996]. In terms of longer-term stability, child reports of security within the father-child relationship have been found to be moderately, significantly correlated from third to fifth grade, whereas a nonsignificant relation was found for child reports of security within the mother-child relationship [Kerns, Tomich, Aspelmeier, & Contreras, 2000]. However, these findings regarding long-term stability (or instability) are difficult to interpret without some assessment of the ongoing relationship with the attachment figure. Finally, Lieberman and her colleagues [1999] have also divided the Security Scale into two subscales (dependence and availability), although they did not report the reliability of these subscales.

Relations to Other Measures of Security. Researchers have not yet examined the Security Scale in relation to any behavioral criteria. However, Kerns and her colleagues [2000] have tested an assessment battery developed to measure parent-child attachment during the later years of middle childhood. This battery of assessments included the Security Scale, a measure of children's coping strategies in dealing with parents during everyday stressors (Coping Strategies Questionnaire, described below), and a projective, interview-based assessment of state of mind regarding attachment in general (SAT: Resnick Version, described below). Additionally, Granot and Mayseless [2001] have examined relations between felt security, as measured by the Security Scale, and both continuous and categorical measures of attachment security and insecurity derived from an adaptation of a story completion task (Modified Doll Story Completion Task, described below). With all four of these measures of attachment being relatively new, however, caution is warranted in interpreting these results.

Findings are somewhat mixed regarding the relations among these new measures of attachment in middle childhood. Links are consistent and as expected with avoidance, although to a somewhat lesser degree concerning attachment to the father [Granot & Mayseless, 2001; Kerns et al., 2000]. On the other hand, felt security has been found to be *positively* linked with sixth-graders' preoccupied coping in their relationships with both their mothers and their fathers [Kerns et al., 2000]. In another study, felt security with the mother was not correlated with ratings of ambivalence in terms of children's story completions, and children classified as secure did not differ from children classified as ambivalent in terms of their levels of felt security [Granot and Mayseless, 2001]. Taken as a whole, these results suggest that the Security Scale may not account for the increases in autonomy (and decreases in dependency) that are expected to take place throughout the later years of childhood [see Lieberman et al., 1999].

Core Theoretical Predictions. In terms of links with caregiving behavior, Kerns and her colleagues [2000] have examined links between observed parental responsiveness and children's reports of felt security. Child-parent interactions

were observed across 4 five- to ten-minute interaction tasks, and parent responsiveness to child concerns was coded with the Family Interaction Q-set [Gjerde, 1986]. Fathers of third-graders (but not sixth-graders) who were observed to be more responsive to their children's needs, opinions, and feelings during semi-structured dyadic interactions had children who reported higher levels of felt security with their fathers; felt security with the mother was uncorrelated with maternal responsiveness for both age groups. These results suggest that felt security during preadolescence may be influenced to a greater extent by earlier experiences than by ongoing interactions, perhaps due to the increasing stability of internal working models [Bowlby, 1973]. Longitudinal research is necessary to examine this cross-sectional finding. However, the authors note that the findings may have been attenuated due to the non-stressful context in which observations took place and the sample's overall low level of risk [Kerns et al., 2000]. These issues will need to be addressed in future research.

Although not directly assessing caregiving behavior, Kerns and her colleagues [1996; 2000] have also examined the relation between felt security, as measured with the Security Scale, and parent reports of acceptance of and 'willingness to serve as an attachment figure' for their children. This parenting attitude was operationalized as responses to selected items from Block's [1965] Q-sort, including items assessing the degree to which parents communicate acceptance, appreciation, and willingness to serve as a safe haven and secure base. Mothers who reported greater acceptance of and willingness to serve as a secure base for their children had children who reported more security in the mother-child relationship [Kerns et al., 1996]. In a separate study, third-graders who reported greater security in their father-child relationships had fathers who were more willing to serve as a secure base for their children. In contrast, sixth-graders' level of security was unrelated to their parents' willingness to serve as an attachment figure [Kerns et al., 2000].

Regarding adjustment outcomes, security within the mother-child and father-child relationships, as measured by the Security Scale, has been found to correlate significantly with children's global self-esteem, as well as self evaluations of peer acceptance, behavioral conduct, scholastic competence, and physical appearance [Kerns et al., 1996; Verschueren & Marcoen, 2002]. Using outcomes other than self-report measures, Granot and Mayseless [2001] found moderate, significant relations between child-mother attachment security, as reported by children using the Security Scale, and teacher-reported adjustment to school. Fourth- and fifth-graders reporting greater security were rated higher in terms of scholastic, emotional, and social adjustment. As well, children reporting less security were more likely to exhibit both internalizing and externalizing problems, as reported by teachers.

In terms of peer relationships, Kerns and colleagues [1996] found that children who reported more secure relationships with their mothers were more accepted by their classroom peers, involved in more reciprocated classroom friendships, and reported less loneliness than children who reported less security in their relationships with their mothers. Granot and Mayseless [2001] also found that children who reported less security also received significantly (yet modestly) greater numbers of negative nominations in a sociometric procedure. In contrast, Lieberman and her colleagues [1999] found that attachment security was not related to the presence of reciprocal school friendships or popularity within the school; rather, the relations

were to qualities of close personal relationships. With a Belgian sample of third- and fourth-graders, Verschueren and Marcoen [2002] found that rejected-nonaggressive children reported their relationships with their fathers (but not mothers) to be less secure than those of popular children, whereas this link, which was at least partially mediated by children's feelings of self-worth, was not found for rejected-aggressive children. Although only two subgroups of rejected children were identified (i.e., aggressive and nonaggressive), it seems likely, based on the literature on peer acceptance and rejection [see Rubin, Bukowski, & Parker, 1998], that many children in the nonaggressive-rejected group were socially withdrawn. Perhaps the link between felt security and more distal correlates, such as group acceptance, may best be understood when examined in conjunction with temperamental factors, such as inhibition, sociability, activity level, emotionality, and emotion regulation.

Two studies have examined relations between felt security and aspects of close, friendship relationships. Using observational and self-report measures, Kerns and her colleagues [1996] found that friendship pairs in which both children had reported highly secure relationships with their mothers were more responsive, less critical, and reported more companionship than friendship pairs in which one of the children had reported a less secure relationship with his or her mother. Similarly, with a large sample of nine- to fourteen-year-olds, Lieberman and her colleagues [1999] found relations between aspects of attachment security and qualities of children's close peer relationships. The Security Scale was divided into two subscales: dependence, reflecting whether children and adolescents seek or value help from parents, and availability, reflecting whether parents are perceived as available. The researchers did not report findings regarding the two subscales' internal consistency. Children and adolescents who perceived their parents as available and reported relying on them in times of need reported more positive qualities in their close friendships, specifically help, closeness, and security. Children who perceived their fathers as available also reported less conflict in their close relationships. In examining the dimensions of availability and dependence separately, the authors also discovered an interaction such that children who reported having highly available mothers yet being less dependent on them reported more positive qualities in their close friendships. However, as indicated above, data regarding the reliability of the two subscales were not provided.

Finally, providing some evidence of the discriminant validity of the Security Scale, attachment security has been found to be unrelated to self-reported athletic competence or to GPA [Kerns et al., 1996; Verschueren & Marcoen, 2002].

Coping Strategies Questionnaire

The Coping Strategies Questionnaire [Finnegan et al., 1996] is a self-report questionnaire designed to assess children's styles of coping within specific parent-child relationships during middle childhood. Separate scales measure the degree to which children report the use of preoccupied (vs. nonpreoccupied) and avoidant (vs. nonavoidant) coping strategies with their attachment figure when faced with everyday stressors requiring emotion regulation. Children who receive high scores on the preoccupied coping scale 'report experiencing a strong need for the mother in novel and stressful situations, trouble separating from the mother, excessive con-

cern over the mother's whereabouts, prolonged upset following reunion, and trouble exploring or meeting challenges owing to excessive need for the mother.' On the other hand, children who receive high scores on the avoidant coping scale 'report denial of distress and affection concerning the mother, failure to seek the mother when upset, avoidance of the mother during exploration and reunion, and refusal to use the mother as a task-relevant source' [Finnegan et al., 1996, p. 1321].

The authors caution that the scales should not be considered measures of insecurity in the attachment relationship, in that they do not assess children's perceptions of caregiver availability or responsiveness. Rather, they assess 'how the child uses the caregiver to negotiate everyday minor stresses and challenges' [Finnegan et al., 1996, p. 1325]. These characteristic styles of coping, however, may grow out of insecure attachment, and the authors suggest that attachment researchers use their scales in combination with a measure of felt security.

Internal Consistency and Stability (Test-Retest Reliability). Several researchers have found the preoccupied coping and avoidant coping scales to be internally consistent across several samples, with coefficient alphas ranging from 0.67 to 0.88 for preoccupied coping with respect to the mother, 0.71 to 0.84 for avoidant coping with respect to the mother, 0.76 to 0.87 for preoccupied coping with respect to father, and 0.83 to 0.89 for avoidant coping with respect to father [Finnegan et al., 1996; Hodges, Finnegan, & Perry, 1999; Karavasilis, Doyle, & Markiewicz, 2003; Kerns et al., 2000]. However, it is noteworthy that only one study included an assessment of coping strategies with respect to the father, although it did reveal that the two scales were internally consistent for several age groups [Kerns et al., 2000]. It is also important to note that the studies using the Coping Strategies Questionnaire have been conducted exclusively in North America. As well, the lowest alpha (0.67) was found for preoccupied coping among the most diverse of the samples [i.e., Karavasilis et al., 2003]. The measure has also been found to be stable across a two-week period, with correlations of 0.83 and 0.76 for the preoccupied and avoidant scales, respectively [Finnegan et al., 1996]. In terms of longer-term stability, the scales have been found to be fairly stable across 1 year, with stability coefficients of 0.65 for preoccupied coping and 0.53 for avoidant coping with regard to the mother [Hodges et al., 1999]. The scales have also been found to be modestly stable over the two-year period from third to fifth grade, with stability coefficients of 0.51 for preoccupied coping with regard to both mother and father, 0.31 for avoidant coping with regard to mother, and 0.55 for avoidant coping with regard to the father [Kerns et al., 2000].

Relations to Other Measures of Security. As with the Security Scale, the Coping Strategies Questionnaire has not yet been examined in relation to any behavioral criteria. However, as described above, it has been included in a battery of new measures of attachment in middle childhood [Kerns et al., 2000]. In addition to the counterintuitive links with the Security Scale described above, it is noteworthy that the preoccupied coping scale was not significantly related to emotional openness, coherence of discourse, or overall security, based on discourse regarding separation stories (i.e., SAT: Resnick Version, described below). Indeed, the only significant relation for the preoccupied coping scale was its negative relation with children's dismissing/devaluing of attachment. Links with the SAT scales were stronger for

avoidant coping, particularly with respect to the mother. However, it is also worth noting that, although children reporting more avoidant coping with respect to their fathers were significantly less coherent in their discourse, avoidant coping with respect to the father was not related to ratings of emotional openness or dismissiveness/devaluing of attachment.

Core Theoretical Predictions. Within their study of attachment-based measures in middle childhood, Kerns and colleagues [2000] examined the relation between coping strategies and the accessibility and responsiveness of the specific attachment figures. Results revealed that third-graders who reported high levels of avoidant coping with respect to their mothers had mothers who were significantly more reluctant to serve as an attachment figure and observed to be somewhat less responsive than other mothers. These relations were even stronger for fathers. In the sixth grade, maternal willingness to serve as an attachment figure and observed maternal responsiveness were unrelated to children's avoidant coping, although children who reported high levels of avoidant coping with respect to their *fathers* had fathers who were significantly more reluctant to serve as an attachment figure. In terms of preoccupied coping, third-graders' preoccupied coping was found to be unrelated to maternal or paternal willingness to serve as an attachment figure or observed parental responsiveness, although mothers of sixth-graders reporting high levels of preoccupied coping were observed to be somewhat less responsive.

In terms of adjustment outcomes, Finnegan and colleagues [1996] found relations between coping strategies and peer reports of both internalizing and externalizing problems. Peers nominated children who reported greater use of avoidant strategies significantly more often than other children as aggressive, dishonest, and disruptive. Similarly, boys who reported greater use of preoccupied strategies were nominated by peers significantly more often than were other children as anxious/depressed, immature, victimized, and to utilize a hovering peer entry style. This relation between preoccupied coping and internalizing problems did not obtain for girls, perhaps, as the authors suggest, because the behaviors are perceived as more inappropriate and are, thus, more salient for boys.

Further supporting the link between coping strategies and adjustment difficulties, Hodges and colleagues [1999] found that children who had more peer-reported internalizing problems, such as anxiety/depression, and who reported high levels of preoccupied coping had the highest levels of internalizing problems 1 year later. Although peers may not be the ideal reporters of internalizing problems, the results show an intensification of problems over time. Likewise, children who had more peer-reported externalizing problems, such as aggression, and who reported high levels of avoidant coping had the highest levels of externalizing problems one year later.

Hodges and his colleagues [1999] also found evidence for links among children's relationships: With a sample of fourth- to eighth-graders, children's reports of preoccupied coping with regard to both mother and father were modestly, significantly correlated with children's reports of preoccupied coping with relation to his or her best friend. Likewise, avoidant coping with relation to both mother and father was modestly, significantly correlated with avoidant coping with relation to his or her best friend. These findings provide support for the notion that internal

working models are carried forward from relationships with parents to close friendship relationships.

Inventory of Parent and Peer Attachment

The Inventory of Parent and Peer Attachment [Armsden & Greenberg, 1987] is a self-report questionnaire originally designed to assess attachment during late adolescence. Recently, however, researchers have used this measure with samples of older children and young adolescents [Coleman, 2003; Simons, Paternite, & Shore, 2001]. The scale measures both felt security regarding attachment figures and anger and detachment directed toward the attachment figures. Items tapping felt security represent the extent to which the adolescent trusts that an attachment figure is available and responsive to his or her needs (e.g., 'My parents respect my feelings'). A second group of items assesses the adolescent's perceptions of open communication within the adolescent-parent relationship (e.g., 'My parents encourage me to talk about my difficulties'). Finally, items tapping alienation/isolation regarding the attachment figure represent the hypothesized emotional reactions to actual or threatened disruptions in an insecure attachment bond (e.g., 'I feel that no one understands me'). An overall parent attachment scale is formed by summing the trust and communication scores and subtracting the alienation score. In recent work with younger adolescents and children, the questionnaire has been administered twice, once for mothers and again for fathers, and separate scores were calculated for attachment to mother and attachment to father [Coleman, 2003; Simons et al., 2001].

Internal Consistency and Stability. With samples of fifth- and sixth-graders, researchers have found the composite mother attachment and father attachment scales to be highly internally consistent, with alphas ranging from 0.90 to 0.93 [Coleman, 2003; Simons et al., 2001].

Relations to Other Measures of Security. No study to date has examined relations to other measures of security, such as earlier security in the Strange Situation, concurrent security using projective, interview-based measures, or later security in the AAI.

Core Theoretical Predictions. Importantly, no study to date has examined the relation between security as measured by the IPPA and the accessibility and responsiveness of the attachment figure during middle or late childhood.

In terms of adjustment outcomes, Simons and his colleagues [2001] examined the relations among sixth-graders' adolescent-parent attachment and adolescents' self-esteem, social cognitions, and aggression. Adolescents who reported greater security in their relationships with their mothers reported significantly higher self-esteem, were less likely to display hostile attribution biases (i.e., attributing hostile intent to a hypothetical peer with ambiguous motive who had caused a negative outcome for the adolescent), and were less likely to suggest aggressive responses. On the other hand, adolescents who reported greater security in their relationships with their fathers had significantly higher levels of teacher-reported aggression.

However, because adolescent-father attachment was not related to social cognitions or to self-esteem, this positive relation between security with the father and teacher-reported aggression was not further examined.

Coleman [2003] has also examined the relation between attachment to mothers and fathers, as assessed with the IPPA, and peer relationships. Fifth- and sixth-graders reporting greater security within their relationships with their mothers also reported greater security within their relationships with friends, although this relation was stronger for males. Boys reporting greater security within their relationships with both their mothers and fathers also reported significantly greater social self-efficacy. For boys only, there was a strong relation between attachment to father and attachment to peers. Finally, social self-efficacy mediated the link between attachment to father and attachment to peers [Coleman, 2003].

Projective Techniques

I now describe three semi-projective interview procedures.³ The first is an adaptation of a procedure originally used with younger children to assess representations of the self with regard to attachment [Modified Doll Story Completion Task; Granot & Maysel, 2001]. The second and third are adaptations of a procedure used to assess children's thoughts and feelings with regard to attachment (SAT).

Doll Story Completion Task

The Doll Story Completion Task, originally developed for use with preschoolers [Bretherton, Ridgeway, & Cassidy, 1990] and later modified for use with six-year-olds [Cassidy, 1988], is a projective assessment of the self within the relationship with the attachment figure. Children are asked to use a doll family to complete a series of stories, designed to reflect 'the mental representation of the self in relation to attachment' [Cassidy, 1988; Main et al., 1985, p. 67]. Two stories deal with 'potentially emotionally charged and relationship-acknowledging interactions' between the child and the mother; two deal with conflict within the family; and two stories deal with conflict or a threat from outside the family [Cassidy, 1988, p. 126]. Children's story completions are rated on a five-point scale for security within the attachment relationship, and the scores are then averaged across stories. The story completions are also classified as secure/confident, avoidant, or hostile/negative, and the modal classification is used as an overall classification [Cassidy, 1988].

Granot and Maysel [2001] further modified the stories in such a way as to increase the likelihood of activation of attachment-related feelings with older children. The stories used in their study of fourth- and fifth-graders included the following scenarios: (1) while the family is seated at the dinner table, the child acci-

³An additional adaptation of the Separation Anxiety Test is not reviewed here because its only published use has been in a study with a very small clinical sample and a similarly small normative sample [Wright, Binney, & Smith, 1995].

dentally spills juice on the floor; (2) the child falls off a high rock, hurts his/her knee, cries, and states that s/he is bleeding; (3) the child is sent to bed and cries out that there is something frightening in his/her bedroom; (4) the mother and father leave for a three-day trip and a babysitter stays with the child; and (5) the babysitter sees the parents as they return the following morning and announces their return to the child.

The stories were coded according to Bretherton et al.'s [1990] original classification into three security categories: secure (i.e., all five stories classified as secure), fairly secure (i.e., one or two stories classified as insecure), and insecure (i.e., three or more stories classified as insecure). The authors also developed a coding system such that children also received a classification as secure, avoidant, ambivalent, or disorganized, reflecting the classifications of the Strange Situation. The researchers described the prototypical secure, avoidant, ambivalent, and disorganized child's stories in terms of the 'emotional expression, relationship with caregiver, protagonist world view, and narrative' quality revealed in the story [Granot & Mayseless, 2001, p. 533]. Coding took place in two steps: First, each story was coded on five-point scales for resemblance to each of the four prototypes, and then children were then given an overall classification according to the prototype with the highest score [Granot & Mayseless, 2001].

Interrater Agreement and Stability (Test-Retest Reliability). Granot and Mayseless [2001] report good agreement regarding the classification of children into the secure, fairly secure, and insecure categories (80% agreement; kappa = 0.68), as well as into the secure, avoidant, ambivalent, and disorganized categories (85% agreement; kappa ranged from 0.77 to 0.81). Correlations for the prototype ratings ranged from 0.78 to 0.85. In a separate, small measurement study, there was good agreement across a three-month period (93.8% agreement; kappa = 0.91) for the four prototype classifications, and the correlations between the two times for the prototype ratings ranged from 0.63 to 0.82 [Granot & Mayseless, 2001].

Relations to Other Measures of Security. As described above, in their study of attachment and adjustment in fourth- and fifth-graders, Granot and Mayseless [2001] found links between felt security, as measured with the Security Scale [Kerns et al., 1996], and the 'secure' and 'avoidant' prototypes of the Modified Doll Story Completion Task. Importantly, however, children classified as ambivalent did not differ significantly from any of the other groups in terms of level of felt security [Granot & Mayseless, 2001]. These findings may suggest that, whereas the Modified Doll Story Completion Task may be useful in identifying secure and avoidant children, it may be of less utility in identifying ambivalent children. Alternatively, given that felt security, as measured with the Security Scale, has been linked with preoccupied coping among sixth-graders [Kerns et al., 2000], this finding may also suggest that the Security Scale taps dependence on parents in addition to confidence in their availability and responsiveness. However, these results must be interpreted with caution, as both measures are relatively new.

Core Theoretical Predictions. Granot and Mayseless [2001] did not assess the relation between the Modified Doll Story Completion Task and any caregiving behaviors, and other researchers have not yet included this measure in published stud-

ies of attachment during middle childhood. Use of the Modified Doll Story Completion Task and the prototype classification system by Granot and Maysseless [2001] did, however, reveal relations between attachment classification and concurrent indices of adjustment that could not be identified using only a measure of felt security. Avoidant children were more likely to exhibit both internalizing and externalizing problems, as reported by teachers, than were secure children; disorganized children were more likely to exhibit internalizing problems than secure children and more likely to exhibit externalizing problems than both secure and ambivalent children. Children classified as ambivalent *expected* to receive significantly more negative nominations than did their peers in a sociometric procedure, and the difference between their expected negative nominations and their actual negative nominations was significantly greater than it was for their peers [Granot & Maysseless, 2001].

Finally, as evidence for the measure's discriminant validity, the authors report that secure children did not differ significantly from insecure children in terms of their cognitive skills, specifically their language proficiency and logical thinking [Granot & Maysseless, 2001].

SAT: Slough & Greenberg System

A second projective measure is the SAT, which assesses children's thoughts and feelings with respect to attachment. The measure was originally developed for adolescents [Hansburg, 1972] and later modified for children aged four to seven years [Klagsbrun & Bowlby, 1976]. It is a semi-structured, projective interview in which children are presented with a series of photographs and vignettes depicting a child experiencing a separation, three of which are considered to be mild (e.g., mother putting child in bed), and three of which are considered to be severe (e.g., parents going away for a two-week vacation). For each vignette, the child is then asked how the child in the photograph feels, why she or he feels that way, and what the child in the photograph will do next. In some variations of the interview, children are also asked how they themselves would feel in similar separation experiences [Slough & Greenberg, 1990; Stevenson-Hinde & Verschueren, 2002].

Interview responses have been coded using a number of different procedures. The system described by Main and colleagues [1985] involves coding the emotional openness and constructiveness of the coping responses. Kaplan's [1987] system classifies children, based on these two ratings, as 'resourceful,' 'inactive,' 'ambivalent,' or 'fearful.' A system developed by Slough and Greenberg [1990] for use with five-year-olds has recently been used in a study of older children and, thus, is described here in more detail. This system involves first coding responses into major categories according to the valence of the feeling reported and the justification for the feeling. Responses reflecting sadness or anger about the separation are coded as 'attachment'; 'self-reliant' responses reflect well-being and either feeling comfortable with the separation or else directing attention away from the separation; responses containing aspects of both are coded as 'attachment/self-reliant'; responses reflecting an inability or reluctance to discuss feelings are coded as 'avoidant'; and 'additional' responses include those that indicate anxiety and bi-

zarre or atypical responses. Responses are then coded into one of 21 subcategories based on the child's coping strategy. Finally, three summary scores are formed based on attachment responses to severe separations (i.e., 'expression of vulnerability/need'), self-reliant responses to mild separations, and avoidant responses to all six pictured separations.

Interrater Agreement and Stability (Test-Retest Reliability). Although this procedure was developed for younger children, one study has utilized the procedure to assess attachment in 8.5-year-olds. Bohlin, Hagekull, & Rydell [2000] report good agreement among raters ($\kappa = 0.84$) for classification of answers to single pictures. The researchers also calculated an overall attachment security score (i.e., assigning scores of 0, 1, or 2 to each of the 21 categories, based on the degree of security each represents, and forming the summary score by adding across the six pictures), but did not provide reliability information regarding this scale.

Relations to Other Measures of Security. In one of very few studies examining attachment in both infancy and the later years of middle childhood, Bohlin et al. [2000] did not find a significant relation between infant security (vs. insecurity) in the Strange Situation and later security, as assessed using the Slough and Greenberg [1990] version of the SAT and an overall attachment security scale. Moreover, children classified as secure in infancy did not differ from those classified as insecure on any of the three individual dimensions (i.e., attachment, self-reliance, and avoidance).

Core Theoretical Predictions. Researchers have not yet examined relations between the SAT and caregiving behaviors using the Slough and Greenberg [1990] system in middle childhood. However, in terms of child functioning, Bohlin and her colleagues [2000] found overall attachment security at age 8.5 to be positively and significantly related to aspects of social competence, including children's social initiative, as observed and as rated by mother and teacher at child ages 8 and 9, and teacher-rated popularity. In examining the SAT scale scores separately, there was a significant, positive relation between the attachment scale score and both rated and observed social initiative, and between attachment and teacher-reported popularity. Conversely, there was a significant, negative relation between the avoidance scale score and both rated and observed social initiative and teacher-reported popularity. As well, children who scored low on the self-reliance scale reported themselves to be significantly more socially anxious than more self-reliant children. Finally, controlling for sex and early attachment status, there were significant independent effects of overall attachment security at 8.5 years on concurrently rated social initiative and popularity and self-reported social anxiety.

SAT: Resnick System

Resnick [1993] has also developed a version of the SAT specifically for use with 11- to 14-year-olds. The interview procedures are based on Kaplan's version of the SAT as well as on Hansburg's original version. The separation scenarios are more severe than in Kaplan's version (as would be appropriate for older children

and young adolescents), although there is still a range in degree of severity. As well, the age-appropriate coding system draws from both Kaplan's system and the procedures used to code AAI transcripts.

Children's responses to open- and closed-ended questions regarding the feelings of each pictured teenager are transcribed and scored according to the following categories: (1) 'emotional openness and vulnerability'; (2) 'dismissing/devaluing of attachment relationships'; (3) 'self-blame'; (4) 'resistance/withholding'; (5) 'preoccupied anger'; (6) 'displacement of feelings'; (7) 'anxiety (optimism/pessimism)'; and (8) 'coherence of transcript.' Constructiveness of the proposed solution is also scored. These nine variables are then used to classify children as secure/freely valuing of attachment relationships, dismissing of attachment/avoidant, or enmeshed/preoccupied/ambivalent. Secure children have high scores on emotional openness, coherence, and optimism; dismissing/avoidant children have high scores on the dismissing, resistance, and displacement scales and low scores on emotional openness, coherence, and optimism; and preoccupied children have high scores on the self-blame and preoccupying anger scales and low scores on the emotional openness, coherence, optimism, and constructive solution scales.

Interrater Agreement and Stability (Test-Retest Reliability). Kerns and her colleagues [2000] reported good agreement among raters for three of the Resnick scales ($\gamma = 0.94$ for emotional openness, 0.83 for dismissing of attachment, and 0.61 for coherence of discourse); the remaining six scales were not analyzed. Whereas interrater agreement was low for classifying children as secure/autonomous, dismissing/avoidant, or preoccupied/ambivalent (64% agreement; $\kappa = 0.35$), it was acceptable for classifying children as secure or insecure (80% agreement; $\kappa = 0.61$). It is noteworthy that only 5% of the children in the sample were classified as preoccupied using the three-category system (59% were secure, 36% dismissing).

Aviezer, Sagi, Resnick, and Gini [2002] also report acceptable interrater agreement for the emotional openness (76%, intraclass $r = 0.80$), constructiveness of solution (88%, intraclass $r = 0.84$), and coherence of transcript (85%, intraclass $r = 0.89$) scales. Coherence of transcript was scored according to recent AAI guidelines, rather than according to the Resnick scoring system. These researchers, however, found the three scales to be highly correlated (intraclass $r = 0.95$) and, thus, computed a mean SAT score from the three.

Relations to Other Measures of Security. In contrast to the findings of Bohlin and her colleagues [2000], Aviezer et al. [2002] found a moderate yet significant, negative relation between infant security (vs. insecurity) in the Strange Situation and SAT security in later childhood. The authors interpreted this negative correlation as indicative of a tendency toward discontinuity for children in this kibbutz sample. The finding certainly does not provide support for the criterion-related validity of the SAT. It does highlight the difficulty inherent in using relations with earlier security to establish the validity of measures developed for use with older children.

In addition, as described above, Kerns and her colleagues [2000] tested an assessment battery that included the SAT (with the Resnick scoring system), the Security Scale, and the Coping Strategies Questionnaire. In terms of the SAT, re-

sults revealed that fifth-graders classified as insecure reported significantly higher levels of avoidant coping with respect to both their mothers and fathers, and children classified as secure reported somewhat (but not significantly) greater felt security. Given that most of the children classified as insecure were avoidant, it is not surprising that the relations found were with avoidant rather than preoccupied coping strategies. Three of the Resnick scales were also examined separately. Children rated high on emotional openness in the SAT reported significantly less avoidant coping with respect to their mothers on the Coping Strategies Questionnaire. Children rated high on dismissing/devaluing of attachment in the SAT reported significantly more avoidant and less preoccupied coping with respect to mothers on the Coping Strategies Questionnaire and significantly lower levels of felt security on the Security Scale; children scoring high on dismissing/devaluing of attachment also reported somewhat (although not significantly) less preoccupied coping with respect to fathers. Finally, children rated high on coherence of discourse in the SAT reported significantly higher levels of felt security with respect to both mothers and fathers; they also reported less avoidant coping with respect to both parents, although this relation did not reach significance for mothers.

Core Theoretical Predictions. Using the two-category classification system (i.e., secure vs. insecure), Kerns and her colleagues [2000] did not find differences between secure and insecure children in terms of their parents' willingness to serve as attachment figures. However, children scoring high on the emotional openness scale had fathers who were significantly more willing to serve as attachment figures. Likewise, children scoring high on coherence of discourse had fathers who were somewhat more willing to serve as attachment figures. No relations were found between mothers' willingness to serve as attachment figures and the SAT scores.

In terms of child functioning, Aviezer and her colleagues [2002] found the SAT to be significantly correlated with teachers' ratings of school functioning, including scholastic attitude, scholastic skills, social competence, general competence, and GPA. The correlations between the SAT and teachers' ratings of emotional maturity and behavior difficulty were not significant. These findings suggest that the SAT may assess a construct other than or at least broader than attachment security. As evidence for discriminant validity, however, the authors indicate that there was no significant correlation between the SAT and verbal ability.

Interview Measures

Finally, I now review two recent adaptations of the AAI.⁴ The first is the Attachment Interview for Childhood and Adolescence [AICA; Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000], and the second is the Child Attachment Interview [CAI; Target, Fonagy, & Shmueli-Goetz, 2003].

⁴Another interview procedure, the Family Attachment Interview [Bartholomew & Horowitz, 1991], has also recently been used with a clinical sample of older children and young adolescents [Scharfe, 2002] yet is not reviewed here because it has not been used with a normative sample.

Attachment Interview for Childhood and Adolescence

The AICA [Ammaniti et al., 2000] is an adaptation of the AAI for use with children during the period of middle childhood and early adolescence. As in the AAI [see Crowell et al., 1999], children are questioned regarding their relationships with their parents, attachment-related events, and the manner in which early relationships have influenced later personality. Modifications to the AAI included only minor changes in the wording of the interview, including clarification of the meaning of questions [Ammaniti et al., 2000].

Interviews are then analyzed according to the AAI coding system, with an emphasis on the structure, rather than content, of the interview. Narratives are rated in terms of probable childhood experience with parents and present representations of attachment. The 'probable childhood experience' scales, rated separately for each parent, include: (1) loving; (2) rejecting; (3) neglecting; (4) involving; and (5) pushing to achieve. The representational scales include: (1) idealization (scored separately for relationships with mother and father and then aggregated); (2) anger (scored separately for relationships with mother and father and then aggregated); (3) derogation (scored separately for relationships with mother and father and then aggregated); (4) passivity of speech; (5) coherence of transcript; (6) lack of memory; and (7) meta-cognitive monitoring (although this last scale did not show enough variance in the validation study to be included in analysis). Adjustments to the coding system take into account the developmental stage of the interviewees. For example, interviews may be rated as moderately coherent even if children have difficulty differentiating between past and present experiences or speaking in abstract terms about their relationships, or if children's normalizing of early experiences suggest continuity in their relationships rather than a dismissive attachment strategy [Ammaniti et al., 2000]. Finally, as with the AAI scoring system, patterns of scale scores are used to classify children as secure, preoccupied, dismissing, or unresolved.

Interrater Agreement and Stability (Test-Retest Reliability). With an Italian sample, Ammaniti and his colleagues [2000] interviewed children using the AICA at both 10 years of age and 14 years of age. Raters of the interviews were trained AAI coders. The authors reported a mean concordance rate of 82% across all four AAI classifications (i.e., dismissing, secure, preoccupied, and unresolved attachment representation) and acceptable interrater agreement for the probable childhood experience and representational scales at both time points [Ammaniti et al., 2000]. The average stability of AICA classification was 71% across the four years, with secure and dismissing classifications being somewhat more stable than preoccupied classification [Ammaniti et al., 2000]. The authors also examined the stability and change in the individual probable childhood experiences and representations scales. Although there was considerable stability in these scales over time, there was also an overall increase in the 'rejecting mother' and 'rejecting father' experience scales [Ammaniti et al., 2000]. In other words, as children became older, they were more likely to portray rejecting parents, regardless of attachment classification. As well, children were more likely to score higher on the 'lack of recall' and 'derogation' representation scales at age 14 than at age 10. The authors suggest that these changes may indicate children's cognitive and affective attempts to gain

autonomy from their parents as they enter adolescence [Ammaniti et al., 2000]. Indeed, Allen and Land [1999] suggest that adolescence may bring with it a 'temporary perturbation' in attachment organization. However, it is important to note that the Ammaniti et al. [2000] study did not include any assessment of life changes that may have also influenced change in attachment organization.

Relations to Other Measures of Security and Core Theoretical Predictions. With only one published study utilizing the AICA, there is limited evidence to date regarding the criterion-related and construct validity of the measure. Ammaniti and his colleagues [2000] did not examine relations between the AICA and other measures of security, such as earlier security in the Strange Situation, concurrent security using other measures, or later security in the AAI. Nor did they examine relations between the AICA and caregiving behavior or child functioning.

Child Attachment Interview

The CAI [Target et al., 2003] is a second interview measure that, like the AICA, is an adaptation of the AAI. In this case, new questions were developed, appropriate for 7- to 12-year-olds, that would activate children's attachment systems and elicit attachment-related information. Unlike the AAI's focus on early parent-child relationships and attachment-related events, the CAI focuses on recent attachment-related events and representations of current parent-child relationships [Target et al., 2003].

A new coding system has also been developed to assess children's overall current state of mind with respect to attachment, although some of the scales are rated separately for child-mother and child-father representations. Scales include: (1) emotional openness; (2) preoccupied anger (rated separately for relationships with mother and father); (3) idealization (rated separately for relationships with mother and father); (4) dismissal (rated separately for relationships with mother and father); (5) self-organization; (6) balance of positive/negative references to attachment figures; (7) use of examples; (8) resolution of conflicts; and (9) overall coherence. In contrast to the coding system used by Ammaniti and colleagues [2000], this coding system takes into account not only the form/content of children's narratives but also the non-verbal communication that takes place during the interview. Patterns of scale scores are used to classify children as secure, preoccupied, dismissing, or disorganized, and to rate children in terms of their level of security.

Interrater Agreement and Stability (Test-Retest Reliability). Target and her colleagues [2003] report acceptable interrater agreement and stability for the CAI. After two iterations of coding, interrater agreement was acceptable for the scale scores, with correlation coefficients ranging from 0.66 to 0.94. In terms of classifications, interrater agreement was best when categorizing children as secure or insecure, with kappas ranging from 0.79 to 0.92. Interrater agreement was borderline acceptable for three-way and four-way categorizations. With a large enough sample, disorganization was reliably identified. Finally, after the second iteration of coding, interrater agreement was also acceptable for level of security with mother and father. Scale scores were found to be quite stable across a three-month period

and a one-year period, with the exception of idealization of father. Indeed, overall coherence, emotional openness, use of examples, and anger with mother were remarkably stable across the one-year period, with stability coefficients of 0.75, 0.63, 0.57, and 0.54, respectively. Classifications were also quite stable across both time periods, although consistently less stable with respect to attachment to the father than with respect to attachment to the mother.

Relations to Other Measures of Security. The CAI has not been examined in relation to other measures of security, such as earlier security in the Strange Situation, concurrent security using other measures, or later security in the AAI.

Core Theoretical Predictions. Target et al. [2003] did not examine links between the CAI and caregiving behavior or child functioning. (Although they mention that mothers completed the Child Behavior Checklist, they do not report the relevant results). They did, however, report significant links between child CAI classifications and mother AAI classifications, with the secure and preoccupied classifications being the most predictive of the partner's classification. In terms of discriminant validity, children classified as secure did not differ significantly from those classified as insecure in terms of their age, verbal IQ, gender, socioeconomic status, ethnicity, or household composition (i.e., whether the child lived with both parents).

Conclusions and Directions for Future Research

Attachment in middle and late childhood has emerged as a topic of great interest over the past several years. Researchers have begun to address issues regarding the normative development of attachment during this age range as well as individual differences in attachment organization, stability of these variations, and the correlates and consequences of the various attachment patterns. As with the early research regarding attachment in infancy [Thompson & Raikes, 2003], advances in theory and methodology have complemented one another in furthering the field. Yet gaps remain in our current understanding of attachment in the later years of childhood, and as pointed out in the above summaries, there are limitations in the methodology that must be considered. A discussion of these limitations, and their implications for theory development, follows below.

First, in measuring attachment during middle childhood, researchers have used a variety of measures to assess an equal variety of constructs, from felt security in the parent-child relationship (e.g., Security Scale) to state of mind regarding attachment (e.g., SAT). These various constructs are not necessarily equivalent, although they may be strongly related to one another. It does appear that school-age children can be directly interviewed regarding their thoughts and feelings about attachment-related issues. Appropriately constructed projective instruments are also effective in activating the attachment systems of older children, although researchers should keep in mind that general representations emerge from representations of specific relationships but do not replace them. Overall, there is a clear need for specificity and consistency across studies in both the conceptual and operational definitions of attachment in the later years of childhood. Researchers should use care to select

measures that assess the constructs they are intending to assess and that are developmentally appropriate for their samples.

In terms of the self-report measures, the Security Scale has been the most commonly used in studies of attachment during the later years of childhood. Researchers have found it to be reliable across a number of samples, with children in the third through sixth grade, and with reference to both mothers and fathers. Felt security, as measured with the Security Scale, has been linked positively with projective, interview-based assessments of security and negatively with both self-reported avoidant coping and avoidance as measured through projective interview assessments. Yet felt security has also been positively linked with self reports of preoccupied coping among preadolescents. Moreover, children classified as ambivalent in projective, interview-based assessments of attachment have not been found to differ from secure, avoidant, or disorganized children in their reports of felt security. Perhaps, then, the Security Scale is capturing an age-inappropriate dependence on parents.

Felt security, as assessed with the Security Scale, has been linked with aspects of caregiving behavior and child functioning. Yet, the results are not entirely consistent. For example, although these relations were significant for younger children, felt security has been found to be unrelated to parent reports of 'willingness to serve as an attachment figure' and to observed parental responsiveness among preadolescents. On the other hand, felt security has been consistently linked with good adjustment outcomes, especially those concerning self-worth and perceived competence. Relations have also been found between felt security in the parent-child relationship and positive characteristics of children's friendships. Finally, it has not yet been demonstrated that felt security, as assessed with the Security Scale, differs from such other constructs as perceived relationship quality or, more specifically, emotional support in the relationship.

In terms of the second self-report measure, the Coping Strategies Questionnaire has been found to generate reliable scales of preoccupied and avoidant coping with respect to mothers and fathers. Researchers have found avoidant coping to be meaningfully related to a projective, interview-based assessment of attachment and to an index of felt security. On the other hand, these relations have not been found in terms of preoccupied coping. Indeed, preoccupied coping has even been linked positively with felt security. Although both scales have been found to be meaningfully related to caregiving behavior and aspects of child functioning, the findings are weaker and far less consistent for preoccupied coping. Finally, what seems to be missing is an index of healthy coping: What is the variation in coping responses for children of this age range when they must deal with situations requiring emotion regulation, and how do the patterns of responses relate to children's confidence in the supportiveness of their caregivers?

Regarding the final self-report measure, the IPPA has been used with fifth- and sixth-graders and found to generate reliable scales of attachment security with respect to mothers and fathers. However, it is unlikely that it is applicable to school-age children in general. The measure was originally validated with college students, and it has not been modified to account for the abilities of younger adolescents or children. The one modification has been to ask about mother and father separately, rather than ask about 'parents' in general. This is an important change because, at least according to the narrow definition of attachment, attachments are to specific individuals, regardless of the age group being studied. In terms of the

validity of the measure, researchers using the instrument for the period of middle to late childhood have relied on the validity evidence provided by researchers who have used the instrument with older adolescents [e.g., Armsden & Greenberg, 1987]. However, it is essential that links to other measures of security, caregiving behavior, and other proximal correlates of attachment (e.g., self-worth) be examined in samples of older children before the IPPA can be considered a valid measure for this age group.

In terms of the projective and interview measures, all offer the ability to classify children as secure, ambivalent/preoccupied, avoidant/dismissing, or (sometimes) disorganized, an option not available with measures of felt security. Yet, neither the adaptation of the Doll Story Completion Task used by Granot and Maysseles [2001] nor the two recently developed interview measures [Ammaniti et al., 2000; Target et al., 2003] have been utilized in other studies of children during the later years of childhood. Similarly, researchers have not used the same protocol or coded the SAT according to the same system across studies. (For the purpose of future studies, it is important to note that the Slough and Greenberg [1990] system was developed for five-year-olds, and the Resnick [1993] system was developed for 11- to 14-year-olds. Neither may be appropriate for children across the entire period of middle to late childhood. Researchers should consider the developmental stage of their participants in deciding which system to use.) Each of these projective measures holds promise, however, because they are adaptations of measures that have been validated with other age groups and, more important, because they are at least in part open-ended, allowing the researcher to explore the full range of responses to such attachment-relevant situations as separation and fear.

With respect to classification of types of insecurity, however, Fraley and Spieker [2003] have recently proposed that attachment strategies may be best represented along dimensions rather than as typologies. Although their analysis of Strange Situation data collected in the NICHD Study of Early Child Care revealed 'hints' of naturally occurring types (or patterns) of attachment organization, the data more consistently supported a continuous model of individual differences in attachment organization. Moreover, analysis of the behavioral indicators of attachment patterns suggested a two-dimension model, with infants varying along the dimensions of 'proximity-seeking versus avoidant strategies' and 'angry and resistant strategies.' Thus, it is possible that the variation in older children's attachment is better represented by instruments that provide continuous measures of attachment security or attachment strategies, rather than categories of security and insecurity. Fraley and Spieker [2003] also suggested that multidimensional scaling may be a useful tool in more precisely measuring attachment organizations while still maintaining the richness of typologies. Researchers interested in attachment in the later years of childhood may be well served by exploring these options.

Constructing measures to be valid across the developmental transition from childhood to adolescence is a difficult task. However, latent variable analysis may aid in answering the questions posed by attachment theorists. Although using multiple measures of attachment is time-consuming and expensive, especially if one or more of these measures are observational, projective, or interview-based, information from multiple measures is critical to establishing the construct validity of a particular measure. Importantly, these multiple measures may be used as *indicators*

of an underlying attachment. This latent factor, then, could be used as either an outcome of relationship variables or a predictor of individual functioning. Moreover, changes in the construct could be assessed over time. For example, one may discover that the structure of attachment at two ages may differ; yet attachment at one age may predict attachment at the second.

Overall, there is a clear need for more longitudinal studies and cross-cultural work. It is necessary to assess stability and change in underlying attachment organizations over time in order to understand the development of attachment patterns. Moreover, longitudinal studies will be necessary to examine the emergence of a general state of mind regarding attachment issues from multiple representations of specific relationships. Finally, cross-cultural validation of measures provides necessary evidence that the construct being measured is indeed the universal, species-specific behavioral system of attachment proposed by Bowlby [1982; Solomon & George, 1999].

Acknowledgement

I am grateful to Cathryn Booth-LaForce, Jude Cassidy, and Ken Rubin for their thoughtful comments on previous drafts of this paper.

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