The adult attachment interview and self-reports of romantic attachment: Associations across domains and methods

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Abstract

Two lines of research on adult attachment have emerged; both are based on Bowlby and Ainsworth's attachment theory, which in turn relies on evolutionary theory. Investigators in one tradition use the Adult Attachment Interview (AAI) to assess "state of mind with respect to attachment." The AAI has been validated primarily by its ability to predict the attachment classification of an interviewee's child in Ainsworth's "strange situation." Investigators in the second tradition use self-report measures to assess romantic "attachment style." The self-report measures have been validated by their ability to predict features of romantic/marital relationships. Although the two constructs, state of mind and romantic attachment, are importantly different and so would not be expected to relate highly, some of their components, especially ability to depend on attachment figures, should be related if both stem from a person's attachment history. We report associations between components, or aspects, of the two measures. Overlap occurs mainly in the areas of comfort depending on attachment figures and comfort serving as an attachment figure for others. Implications of the findings for attachment theory and research, as well as for evolutionary psychology, are discussed.

One of the most influential theoretical approaches to the study of close relationships is Bowlby and Ainsworth's attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969/1982; see Cassidy & Shaver, 1999; Colin, 1996, for overviews). According to the theory, human beings are endowed with an "attachment behavioral system" that was designed by evolution to assure a person's—especially a young child's—proximity to a caregiver who provides assistance or protection in times of need. Although every person, regardless of age, is believed to possess an attachment behavioral system, individuals differ in what the theory refers to as "quality of attachment," with quality varying in terms of security versus insecurity (as well as *kind* of insecurity—e.g., avoidant, anxious, or disorganized). These differences are thought to stem from differences in the caregiving environment encountered by different children (a theoretical claim supported by extensive evidence; see Weinfield, Sroufe, Egeland, & Carlson, 1999; van IJzendoorn, 1995, for reviews). The theory highlights the importance to young children of being able to depend on one or more specific "attachment figures" (e.g., parents and caregivers) and the ability of attachment figures to protect the children who are attached to them. Caregiving is conceptualized in attachment

theory as stemming from a separate caregiving behavioral system (George & Solomon, 1999). The child's attachment system is portrayed as becoming especially activated in times of need, which in turn increases the activation level of the attachment figure's caregiving system.

The theory was explicitly formulated as a lifespan theory (Ainsworth, 1989; Bowlby, 1979) and, in recent years, has been applied to the study of adult romantic relationships (see Feeney, 1999; Shaver & Clark, 1994, for overviews). In that context, each partner is thought to be both attached to and, when needed, available to provide care for the other. Use of the attachment behavioral system to enhance pair-bonding in adulthood, which in turn promotes the safety and health of adults and increases the likelihood of effective parenting, is considered, like child–parent attachment, to be an outcome of evolution (Fraley & Shaver, in press; Hazan & Zeifman, 1999; Simpson, 1999).

Over the past 10 to 15 years, attachment theory has generated two largely independent lines of research based on different conceptualizations and assessments of "adult attachment" (see Bartholomew & Shaver, 1998; Cassidy & Shaver, 1999; and Simpson & Rholes, 1998, for overviews). The first line was begun by developmental psychologists (Ainsworth et al., 1978) who used observational techniques to study child–parent relationships, and was subsequently extended by developmentalists and clinicians who used interviews to study parents' "state of mind with respect to attachment" (e.g., Main, Kaplan, & Cassidy, 1985). The principal measure of "state of mind" is the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), an hour-long interview concerning an adult's memories of childhood relationships with attachment figures. The AAI was originally designed to predict a *child's* quality of attachment to his or her parent based on the parent's state of mind with respect to attachment. (The child's quality of attachment to the parent is usually assessed with Ainsworth's well-known "strange situation" laboratory procedure.) The AAI is coded primarily in terms of an adult's *coherence of discourse* while discussing emotion-laden attachment-relevant experiences as well as his or her *ability to collaborate* effectively with the interviewer (Hesse, 1999).

The second line of research on adult attachment was initiated in the mid-1980s by social psychologists (Hazan & Shaver, 1987) who applied Bowlby and Ainsworth's ideas to the study of romantic relationships. These researchers noticed parallels between Ainsworth's three infant quality-of-attachment types—secure, avoidant, and anxious/ambivalent—and patterns of behavior and feelings in adolescent and adult romantic relationships. Secure romantic partners, like secure infants, feel comfortable depending on romantic partners. Avoidant romantic partners, like avoidant infants, seem both excessively self-reliant and uncomfortable with closeness. Anxious/ambivalent romantic partners, like anxious/ambivalent infants, seem unusually insecure, clingy, and emotionally labile. Hazan and Shaver (1987, 1990) developed simple self-report measures suitable for use in experiments and surveys, and these measures were then improved and elaborated in various ways by other investigators, including the addition of a fourth "type" as had been done in the infant literature (Main & Solomon, 1990). (See Brennan, Clark, & Shaver, 1998; Collins & Read, 1990; Griffin & Bartholomew, 1994; and Simpson, 1990, for examples of self-report attachment measures.) The typical self-report measure involves either qualitative (i.e., categorical) self-classification of attachment-related feelings and behaviors in romantic relationships (e.g., Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987) or quantitative self-ratings on several items designed to tap the two or three dimensions underlying differences among romantic "attachment styles" (e.g., Brennan et al., 1998; Collins & Read, 1990; Griffin & Bartholomew, 1994; Simpson, 1990).

Given that the constructs measured by the AAI and the various self-report measures of attachment are distinct and the as-

sessment procedures are different, one would not expect the two kinds of measures to be highly related. The romantic attachment measures concern the role of attachment in the context of mating and pair-bonding, whereas the AAI concerns mainly the ways in which state of mind with respect to attachment affects parenting. Modern evolutionary theory (e.g., Simpson, 1999) leads us to expect that, while both mating/pair-bonding and parental investment may have common roots in a person's attachment history, they are also influenced independently by other variables (e.g., sexual attractiveness in the case of mating and pair bonding, viability of offspring and harshness of the environment in the case of parental investment).

Moreover, a person's orientation to *romantic relationships* (e.g., one's ability to trust someone of the opposite sex) might be especially affected by the person's attachment history with the opposite-sex parent (Collins & Read, 1990), whereas for both genders one's orientation to *parenting* might be more affected by his or her childhood relationship with mother, given that mother is usually the most involved and available parent (Hesse, 1999; Main et al., 1985). Belsky (1999), in particular, has argued that the absence of (or low parental investment on the part of) fathers might cause daughters to expect little help from male romantic or marital partners. This in turn might cause them to adopt an unrestricted sociosexual orientation, having sexual relations fairly early and without much faith in continued investment on the part of male partners.

Despite these reasons for expecting something less than strong associations between the AAI and measures of romantic attachment, both "state of mind" as it affects parenting and "attachment style" as it affects romantic relationships are thought to emerge from a person's history of attachments, beginning with parents. Moreover, both the AAI and the self-report measures of attachment style deal with *security* and *strategies of affect-regulation* (sometimes called "hyperactivating"

vs. "deactivating" strategies; Dozier & Kobak, 1992), and both kinds of measures yield typological classifications that are thought to be psychodynamically similar to those identified by Ainsworth and colleagues (1978). Assuming that a person's degree of security, comfort with intimacy, and characteristic ways of coping with anxiety and anger stem from a long history of interactions with attachment figures, it seems unlikely that there is no relationship at all between aspects of a person's state of mind with respect to attachment and aspects of his or her romantic attachment style. In both domains—child–parent attachment and romantic attachment—one's ability to depend on the care of another is fundamental. And in both domains, one's willingness to allow another person to be, in times of need, dependent upon oneself is also fundamental.

To date, the few direct comparisons between the AAI and either Hazan and Shaver's (1987, 1990) or Bartholomew and Horowitz's (1991) self-report measures (e.g., Borman & Cole, 1993; Crowell, Treboux, & Waters, 1993, 1999) have not yielded statistically significant associations at the level of typological categories, although the association was nearly significant ($p < .07$) in the study reported by Crowell et al. (1999). Most such studies have been presented at conferences but not published, making it difficult to evaluate their methods and findings. This has led many attachment researchers to believe that the AAI and self-report romantic attachment measures are completely unrelated. Bartholomew and Shaver (1998) reviewed such studies and found that most of them relied on insufficient sample sizes (and therefore lacked adequate statistical power to reject the null hypothesis), involved inappropriate comparisons (e.g., equating different forms of avoidance), were based on outright statistical errors (e.g., misreporting p values associated with key findings), and failed to include analyses conducted at the level of underlying dimensions, which might have yielded more precise information than categorical analyses.

As Bartholomew and Shaver (1998) and Fraley and Waller (1998) have explained in detail, much of the information included in the AAI coding scales is lost when a coder decides, at the end of his or her efforts, to place a person into one of a handful of categories. The same kind of information loss occurs when participants in self-report research are asked to place themselves into a single romantic attachment category. Using taxometric statistical procedures (Waller & Meehl, 1998), Fraley and Waller showed that there is no empirical basis for reducing self-report attachment dimensions to categories. Whether or not the AAI identifies true "types" in Meehl's (1992) sense has not yet been determined.

Despite the general failure to find associations between AAI categories and self-reported romantic attachment categories, a few published studies have shown either that self-report romantic attachment measures predict attitudes and behaviors related to parenting (e.g., Goodman, Quas, Batterman-Fauce, Riddlesberger, & Kuhn, 1997; Rholes, Simpson, & Blakely, 1995; Rholes, Simpson, Blakely, Lanigan, & Allen, 1997) or that the AAI predicts behaviors and feelings in romantic or marital relationships (e.g., Cohn, Silver, Cowan, Cowan, & Pearson, 1992; Crowell & Waters, 1997). Moreover, the self-report romantic attachment measures predict several aspects of psychological functioning—for example, defenses (Fraley & Shaver, 1997), memory for emotional experiences (Mikulincer & Orbach, 1995), and personality disorders (Brennan & Shaver, 1998)—that have also been associated with the AAI (see Crowell, Fraley, & Shaver, 1999a; Hesse, 1999, for reviews). Thus, there are lingering suggestions that at least some aspects of state of mind with respect to attachment and some aspects of romantic attachment styles are related.

The purpose of the present article is to explore this issue in detail using data from a community sample of adult women who completed Collins and Read's (1990) Adult Attachment Scale (AAS), a self-report measure of romantic attachment style, and who were also administered the AAI. Our primary goal was to examine possible connections between the two measures at the most concrete level, before coders' state-of-mind ratings and participants' romantic self-report item responses were aggregated to yield typological classifications. It seems likely that certain aspects of "state of mind," which are assessed quantitatively by coders using more than 20 rating scales, and certain aspects of romantic attachment self-reports are related. For example, coders' impressions that a given woman's mother and father were loving (which is assessed by two coder rating scales) might relate to the woman's degree of comfort depending on romantic partners (one of the three subscales of the AAS, as explained below). It also seems likely that the major AAI indicators of overall security, the scores for "coherence of interview transcript" and "coherence of mind" (explained below), are related to all three AAS subscales, which together define romantic attachment security. In general, our analyses were exploratory, although informed by theory and empirical findings in the two lines of research mentioned above. They took advantage of an expensive and unusual data set (i.e., one containing both the AAI and a self-report measure of romantic attachment) to determine whether largely unpublished reports of the independence of these two kinds of measures were premature and misleading.

To summarize, the purpose of the present study was to examine associations between AAI categories and coding scales, on the one hand, and self-reports of romantic attachment style, on the other. Our primary hypotheses, or expectations, were as follows: (1) that the AAI coding scales would be related to the self-report measures, especially to the ability to depend on attachment figures, an issue that lies at the heart of attachment theory; and (2) that women's mental representations of their childhood attachment relationships with father might be more important to romantic attachment than representations of relationships with mother, whereas the obverse would be the case with respect to AAI security (i.e., ma-

ternal representations would be more central than paternal representations, as has been previously documented; see Hesse, 1999). We also conducted additional, more exploratory, analyses in search of a better understanding of the areas of overlap between the AAI and the AAS.

Method

Subjects

Participants in the study were 138 Caucasian women from working- and middle-class, maritally intact families living in a semi-rural university town in central Pennsylvania. The women were recruited to participate in an extensive investigation of parent and child development during the so-called terrible twos, the second and third years of a child's life (Belsky, Woodworth, & Crnic, 1996a, 1996b). Each woman was a mother of a first-born 10-month-old child at the time of enrollment into the larger research project. At this time, mothers' average age was 28.8 years (range: 20 to 41 years), average education was 15 years (range: 12 to 25 years), and average number of years of marriage was 4.72 (range: 1 to 17 years). Annual family income (early 1990s) for participating families ranged from less than $5,000 to almost $100,000, with a mean of approximately $35,000. Families were identified via birth announcements in the local newspaper and contacted via a recruitment letter, followed by a phone call. Seventy-one percent of eligible families agreed to enroll in the larger study and were paid for each data collection.

Procedures and instruments

Data considered in this report were collected across a 2-month period, ranging from the time each participant's child was 10 to 12 months of age. Each mother was visited at home, and as part of an extensive questionnaire battery she completed Collins and Read's (1990) multi-item version of the Hazan and Shaver (1987) measure of attachment styles, which refers explicitly to

romantic relationships. Two months later each mother visited the university to participate in the Adult Attachment Interview. (Incidentally, this 2-month gap is likely to have reduced the associations between the two measures.)

Self-report attachment measure. Collins and Read's (1990) Adult Attachment Scale (AAS) consists of 18 statements, reproduced here in Table 1. (We will refer to specific items by number throughout the Results section.) Respondents in our study were asked to rate each item on a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Collins and Read (1990) created three subscales based on factor analysis: Close (comfort with closeness), Depend (being willing and able to depend on others in times of need), and Anxiety (anxiety about abandonment and being unloved). In the present study, these scales yielded internal consistency reliability (alpha) coefficients of .71, .81, and .75, respectively. The Close and Depend scales correlated .54 with each other; the Close and Anxiety scales correlated $-.19$; the Depend and Anxiety scales correlated $-.37$.[1]

The convergent and discriminant validities of self-report attachment measures, including the AAS, are well established (see Crowell et al., 1999a, for a review). The measures predict many theoretically relevant aspects of intrapsychic processes (e.g., affect regulation, emotion-elicitation, attachment-related memories) and relational

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1. In subsequent studies (e.g., Collins, 1996), Collins combined the Depend and Close scales to create a two-dimensional measure similar to ones devised by Bartholomew and colleagues (e.g., Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). We found, in preliminary analyses for the present study, that a two-factor reduction of the 18 items produced factors that correspond well to the Avoidance and Anxiety factors identified by Brennan et al. (1998) in their large-N study of all (then-existing) self-report attachment scales. In the present data set, we also conducted analyses using the two factors, Avoidance and Anxiety. In most cases, the results for the Avoidance scale were what one would expect given that this scale is essentially a combination of Close and Depend items.

Table 1. *Collins and Read's (1990) scales*

Close (a = .71)
 1. I find it relatively easy to get close to others.
 8. I do not often worry about someone getting too close to me.
 9. I am somewhat uncomfortable being close to others. (R)
10. I am nervous when anyone gets too close. (R)
14. I am comfortable having others depend on me.
17. Often, love partners want me to be more intimate than I feel comfortable being. (R)

Depend (a = .81)
 3. I find it difficult to allow myself to depend on others. (R)
 4. People are never there when you need them. (R)
 7. I am comfortable depending on others.
15. I know that others will be there when I need them.
16. I find it difficult to trust others completely. (R)
18. I am not sure that I can always depend on others to be there when I need them. (R)

Anxiety (a = .75)
 2. I do not often worry about being abandoned. (R)
 5. In relationships, I often worry that others do not really love me.
 6. I find others are reluctant to get as close as I would like.
11. In relationships, I often worry that others will not want to stay with me.
12. I want to merge completely with another person.
13. My desire to merge sometimes scares people away.

Note. A parenthesized *R* following an item indicates that the item is reverse-scored when computing the scale score to which it contributes.

behavior (e.g., self-disclosure, actual reliance on attachment figures in times of stress); they are independent of intelligence, and they cannot be reduced to either relationship satisfaction or the Big Five personality factors (Shaver & Brennan, 1992).

Adult Attachment Interview. The Adult Attachment Interview (AAI; George et al., 1985) is an 18-question, approximately 1-hour, structured but open-ended interview that measures adults' representations of early attachment experiences with parents. As described by Hesse (1999, p. 396):

The interview begins with a call for a general description of relationships to parents in childhood, followed by a request for five adjectives that would best represent the relationship with each parent. After the adjectives are provided (first for the mother), the speaker is probed for specific episodic memories that would illustrate or support why each descriptor was chosen. [Repeated for the father and other significant attachment figures.] . . . The protocol goes on to ask what the speaker did when emotionally upset, physically hurt, or ill, and how the parents responded. The subject is asked about salient separations, possible experiences of rejection, threats regarding discipline, and any experiences of abuse. The speaker is then queried regarding the effects of these experiences on his or her adult personality; whether any experiences constituted a significant setback to development; and why the parents are believed to have behaved as they did. . . . [The AAI also includes a section] addressing experiences of loss of significant persons through death. . . . Finally, the speaker is asked about the nature of the current relationship with parents [and how the past relationship may have affected his or her ability to parent].

Two trained interviewers administered AAIs to mothers in the present study. Interviews were audiotaped and then transcribed. Verbatim transcripts were rated using 9-point scales that measure probable childhood experiences with each parent as inferred by the coder—the "experience scales": *rejecting, loving, neglecting, pressure to achieve,* and *role-reversing,* which in attachment theory refers to the parent relying

on the child to be a caregiver for the parent. The transcripts were also rated using several 9-point scales designed to reflect the subject's present state of mind with respect to attachment: *idealizing* (viewing mother or father favorably in light of conflicting evidence), *derogating* (three scales: downplaying the importance of attachment relationships in general or with mother or father in particular), *lack of memory* for specific examples of attachment experiences, *passivity of speech* (e.g., inability to focus, using vague phrases or nonsense words, wandering onto irrelevant topics), *metacognitive monitoring* (having a meta-perspective on what one is saying), *coherence of transcript* (following the language-philosopher Grice's, 1989, maxims of cooperative, rational discourse: quantity, quality, relation [relevance], and manner), *coherence of mind* (consistency of episodic and semantic memories, lack of gaps and defenses, believability—which are closely related to coherence of transcript but potentially broader), *unresolved mourning or trauma, feared loss of one's own child,* and *"involving" anger* (with respect to each parent). The term "involving" refers to the fact that the anger is continuing, currently experienced, uncontrolled, and disruptive of the interview. (See Hesse, 1999, or the AAI scoring manual [Main & Goldwyn, 1994] for details.)

Adult attachment classifications were derived from the AAI primarily based on the state-of-mind scores. Complete AAI data were obtained for 135 of the 138 participants. Adults were identified as belonging to a secure attachment group (i.e., secure/autonomous with respect to attachment [n = 82]) if they clearly valued attachment relationships and could cooperate with the interviewer in coherently discussing early attachments, regardless of whether retrospective accounts of child-rearing were positive or negative. (In general, coherent discourse is associated with positive representations of experiences with parents, but this is not required. Some adults who were badly treated as children are classified as secure/autonomous based

on their coherence and ability to collaborate with the interviewer, a practice supported by the fact that these "earned secures" often have infants who are classified as securely attached in the "strange situation" [Hesse, 1999].) Adults were identified as belonging to one of two primary insecure groups (i.e., dismissing [n = 24] or preoccupied [n = 19]) if they were incoherent in one of two ways. Dismissing individuals devalue attachment relationships, "normalize" what seem actually to have been troubled relationships with parents, and often fail to remember or fail to elaborate sufficiently to allow the interviewer to understand what is being said. Preoccupied individuals seem enmeshed in past attachment relationships, and their speech reflects lack of distance from or perspective on these experiences. They tend to provide too much information while remaining vague or off-topic. In addition, individuals were assigned an unresolved classification (n = 10) if they had not resolved their feelings regarding loss or traumatic experiences. Lack of resolution is reflected in lapses of monitoring of reasoning or discourse, such as believing (implicitly) that a dead person is still alive, exhibiting long silences while appearing to be lost in reverie, or lapsing into eulogistic speech. (For a detailed description of the four AAI categories, see Hesse, 1999, Table 19.2.)

The reliability of the AAI has been demonstrated in studies examining the stability of attachment classifications from periods ranging from 2 months to 1.5 years (Bakermans-Kranenburg & van IJzendoorn, 1993; Benoit & Parker, 1994). The convergent and discriminant validities of the instrument have also been extensively demonstrated (Bakermans-Kranenburg & van IJzendoorn, 1993; Crowell et al., 1999a; Crowell & Treboux, 1995; Hesse, 1999). As mentioned earlier, the interview predicts the "strange situation" classification of interviewees' children; it is also related in predictable ways to particular psychological disorders (e.g., Carlson, 1998; Dozier, Stovall, & Albus, 1999); and (also as mentioned earlier) it predicts aspects of marital

functioning. Finally, AAI classifications are independent of non-attachment-related memory, verbal and performance intelligence, and social desirability (Bakermans-Kranenburg & van Ijzendoorn, 1993).

The interviews used in this study were coded by Dr. Miriam Steele, who was blind to all other data and had established reliability with Dr. Mary Main, one of the designers of the AAI scoring system. Dr. Steele has had extensive AAI coding experience in her own studies (e.g., Steele, Steele, & Fonagy, 1996).

Results

The results are organized into four sections. In the first section we show how AAI coding scales correlate with the self-report romantic attachment scales and how the AAI maternal and paternal experience scales correlate with the AAI state-of-mind scales. These analyses allow detailed tests of the two major hypotheses. In the subsequent sections we present three sets of exploratory analyses. First we consider the predictability of the self-report romantic attachment scales from combinations of AAI rating scales. Next we examine the ability of groups of self-report items to predict the AAI scales. Finally, we explore the ability of self-report scales and items to predict the dimensions that distinguish among the four AAI categories.

Correlations between AAI coding scales and self-report romantic attachment scales

Table 2 displays correlations between the AAI coding scales and the three Collins and Read (1990) self-report romantic attachment scales. Overall, 33% of the correlation coefficients were significant at the .05 level, 20% at the .01 level or beyond, and 11% at the .001 level. Although it is difficult to evaluate this outcome precisely because some of the scales within each measure are correlated with each other (i.e., are not independent), the results certainly indicate that the two adult attachment measures are

related at the scale level. Thus, our first hypothesis was supported.

More specifically, the *Close* scale (comfort with closeness in romantic relationships) correlated significantly with three AAI experience scales: mother loving, mother (not) neglecting, and father pressuring to achieve. (Here as elsewhere in our results, pressure to achieve comes across as a positive force, contrary to the presumed intentions of the AAI's designers. Pressure to achieve may sometimes be perceived by children as an indication of parental interest and involvement.) The Close scale also correlated significantly with two AAI state-of-mind scales: coherence of transcript and coherence of mind, which were themselves highly intercorrelated ($r = .95, p < .001$).

The *Depend* scale (ability to depend on romantic partners) correlated significantly with seven AAI experience scales—mother loving, mother (not) role-reversing, mother (not) neglecting, father loving, father (not) rejecting, father pressuring to achieve, and father (not) neglecting—as well as six AAI state-of-mind scales: (absence of) involving anger toward mother, (absence of) involving anger toward father, (no) lack of memory for childhood experiences with parents, (no) passivity of speech, coherence of transcript, and coherence of mind.

The *Anxiety* scale (anxiety about abandonment and insufficient love from romantic partners) correlated significantly with two AAI experience scales—father (not) loving and father neglecting—and five AAI state-of-mind scales: passivity of speech, (poor) metacognitive monitoring, feared loss of child, (low) coherence of transcript, and (low) coherence of mind.

Certain patterns in the data warrant attention. First, as mentioned earlier, the Close and Depend scales were correlated ($r = .54, p < .001$), which fits with the general view that they measure two facets of "avoidance" (Brennan et al., 1998). This means, of course, that they also correlated in the same direction with most of the AAI coding scales. Nevertheless, the correlations involving the Depend scale were all higher than those involving the Close scale. Thus,

Table 2. *Correlations between AAI and self-report attachment scales*

	Collins and Read Scales		
	Close	Depend	Anxiety
AAI Experience Scales			
Mother–loving	.22*	.33***	−.13
Mother–rejecting	−.13	−.15	.04
Mother–role-reversing	−.08	−.23**	−.04
Mother–pressuring to achieve	.11	.04	−.11
Mother–neglecting	−.20*	−.30***	.07
Father–loving	.16	.40***	−.30***
Father–rejecting	−.14	−.30***	.17
Father–role-reversing	−.02	−.02	.03
Father–pressuring to achieve	.26**	.24**	−.14
Father–neglecting	−.07	−.31***	.24**
AAI State-of-Mind Scales			
Mother–idealization	.07	−.03	.12
Mother–involving anger	−.03	−.21*	.03
Mother–derogation	−.04	−.10	−.01
Father–idealization	.02	−.01	.01
Father–involving anger	−.13	−.21*	.15
Father–derogation	−.11	−.16	.13
Derogation of attachment	−.01	−.04	.05
Lack of memory	−.11	−.24**	.04
Passivity of speech	−.16	−.26**	.18*
Metacognitive monitoring	.05	.13	−.19*
Unresolved mourning	−.07	−.06	.16
Unresolved trauma	−.08	−.13	.01
Feared loss of child	−.14	−.09	.19*
Coherence of transcript	.21*	.35***	−.19*
Coherence of mind	.25**	.33***	−.19*

Note: ***$p < .001$. **$p < .01$. *$p < .05$. Ns varied from 132 to 135, except for the two unresolved scales (loss, N = 129–130; trauma, N = 99–100).

the revealed association between aspects of AAI responses and romantic attachment self-reports seems to be due primarily to ability and willingness to depend on attachment figures. Second, the Anxiety scale was significantly related to certain experience-with-*father* variables but not to any of the corresponding experience-with-*mother* variables. This result supports our second hypothesis, that in a sample of married, presumably heterosexual women, romantic attachment style would be more affected by attachment-related experiences (or, at least, mental representations of those experiences) with father than with mother.

The second hypothesis also implies that where there are correlations between either the Close or the Depend scale and mother or father experience scales, these correlations should generally be larger for father than for mother. On the whole, the correlations between the Depend scale and the following experience scales support this part of the hypothesis: father loving, .40; mother loving, .33; father rejecting, −.30; mother rejecting, −.15; father pressuring to achieve, .24; mother pressuring to achieve, .04. Only in the case of role-reversal were the results opposite of what was predicted: father, −.02; mother, −.23.

This aspect of hypothesis 2 was tested more rigorously with a series of simultaneous multiple regression analyses in which each of the three AAS scales was predicted sequentially from father and mother experience scales considered as two sets. Each

analysis was computed twice, to see whether significant increases in variance-accounted-for were obtained when mother variables were entered after father variables and vice versa. For the Depend scale, the set of father experience variables accounted for 19.6% of the variance, and there was no significant gain in variance accounted for when the mother variables were added. The mother variables alone accounted for 15.9% of the variance, and the father variables accounted for a significant increase in variance accounted for. For the Anxiety scale, the father variables accounted for 8.3% of the variance and the mother variables did not add significantly to the equation. The mother variables alone accounted for 6.4% of the variance, and the father variables added significantly to the equation. Only in the case of the Close scale did this pattern fail to appear. When entered alone, the father variables accounted for 7.3% of the variance; when the mother variables were entered alone they accounted for 7.6% of the variance. Neither set of parent variables added significantly to the equation when entered second.

Another component of the second hypothesis is that one's "state of mind" with respect to attachment will be better predicted by experiences with mother than with father, owing to the greater likelihood of mothers than fathers occupying the primary-caregiver role. To test this prediction we conducted a series of simultaneous regression analyses in which each state-of-mind coding scale not specifically associated with mother or with father was predicted sequentially from the mother and father experience scales (considered as two sets).[2] Each

2. As might be expected, for two of the three state-of-mind scales related specifically to father—involving anger and derogation—father experience scales performed better than did mother experience scales, and the latter did not add significantly to the prediction equation after father variables were entered. For father idealization and the three mother state-of-mind scales, mother experience variables performed better than did father experience variables, and the latter did not add significantly to the prediction equation after mother variables were entered.

analysis was computed twice, as explained in the previous paragraph. The results were in line with the prediction. For the lack of memory coding scale, the set of mother experience variables accounted for 41.7% of the variance, whereas the set of father experience variables accounted for only 21.8%, and there was no significant gain in variance accounted for when the father experience variables were entered after the mother experience variables. For passivity of speech, the corresponding figures were 30.1% and 21.9%; for derogation of attachment, 17.3% and 13.6%; for coherence of mind, 61.0% and 43.7%; for coherence of transcript, 60.3% and 43.1% and—the only exception to the predicted pattern—for metacognitive monitoring, 11.6% and 13.7%, which were not statistically different. In every other case, the mother variables added significantly to the prediction equation even after the father variables were entered, but the father variables never improved significantly on the mother variables. (The predicted pattern was also obtained, but only weakly, for feared loss of child, 10.1% and 5.2%, and unresolved mourning, 6.4% and 4.3%, where the figures were small because of the limited number of subjects who exhibited these characteristics at all.)

In summary, both components of our second hypothesis were generally supported. Experiences with fathers, at least as represented in the AAI, were at least somewhat more related to the self-report romantic attachment scales than were experiences with mothers. In contrast, experiences with mothers were more related than experiences with fathers to state-of-mind scales that were not parent-specific. These findings are compatible with the reasoning of evolutionary psychologists (e.g., Belsky, 1999; Kirkpatrick, 1998; Simpson, 1999), who view poor or nonexistent relationships in childhood between girls and their fathers as possible influences on their later romantic and sexual behavior; and with the findings of attachment researchers (e.g., Main et al., 1985) who have found actual early experiences with mother (as reflected in the "strange situation" assessment proce-

dure) to be more important, on average, than actual experiences with father as determinants of childhood states of mind related to attachment.

The remaining portions of the Results section report exploratory regression analyses designed to illuminate aspects of the relations between AAI state of mind and romantic attachment style. Each set of analyses produced findings of theoretical interest that are, in our judgment, worth pursuing in future studies.

Predicting self-report dimensions from AAI coder ratings

To determine which AAI coding scales, taken together, best predict the three Collins and Read scales, we computed three stepwise regression analyses. All of the Rs were statistically significant and at least moderate in size. The Close scale was predictable from coherence of mind ($\beta = .40$), mother idealization ($\beta = .32$), father pressuring to achieve ($\beta = .31$), and father involving anger ($\beta = -.17$), all but the last of which were associated with greater comfort with closeness in romantic relationships ($R = .48, F [4,122] = 8.89, p < .001$). The most heavily weighted predictor variable, coherence of mind, is the essence of AAI security (Fyffe & Waters, 1997). The ability of the other two variables to contribute to the prediction of closeness is somewhat puzzling, given that parental idealization and pressure to achieve were thought by the AAI's designers to be associated with insecurity. The Depend scale was predictable from father loving ($\beta = .39$), father pressuring to achieve ($\beta = .29$), and not being angrily entangled with mother ($\beta = -.23$). Here again, it appears that good relations with parents, especially father, make positive contributions to a woman's feeling that she can safely depend on male romantic partners ($R = .52, F [3,123] = 5.41, p < .001$). Finally, the Anxiety (about abandonment) scale was predictable only from father loving: Women who portrayed their father as loving were less anxious about being aban-

doned by a romantic partner ($\beta = -.30, R = .30, F [1,125] = 12.03, p < .001$).

Predicting AAI scales from Collins and Read items

Next, we were also interested in determining which Collins and Read *items* made the largest independent contributions in stepwise regression analyses predicting AAI coding scales, because these lower-level connections provide useful clues for future analyses of the underlying architecture of state of mind and romantic attachment style. The results of these analyses are summarized in Table 3.

Here we will mention only a few general points, the first being that every AAI coding scale except one is predictable to a significant degree from one or two self-report items. The second point is that the extent of predictability is just as great for the AAI state-of-mind scales, including the theoretically very important coherence-of-mind scale, as it is for the experience scales, which might at first seem closer than the state-of-mind scales to being self-reports. (That is, they might seem to require fewer abstract inferences on the part of coders, although the experience scales themselves are inferential to some extent, as explained earlier. They reflect a coder's judgment about, say, how loving an interviewee's mother actually was, regardless of what the interviewee said directly about this issue.)

The third point is that certain of the 18 Collins and Read self-report items turn up again and again in the analyses, whereas others do not appear at all. The most frequently appearing item is 15, "I know that others will be there when I need them," again revealing the importance to the shared territory of the AAI and the AAS of a feeling that attachment figures will be available and responsive when needed. This is what Sroufe and Waters (1977) called "felt security," the subjective side of the "secure base" concept in Bowlby and Ainsworth's attachment theory. The self-report item with the next-most appearances in the table is 14, "I am comfortable having

Table 3. *Results of stepwise multiple regressions predicting 25 AAI rating scales from individual Collins and Read items*

AAI Ratings	β (Collins and Read Item Number)		Multiple R
Experience Scales			
Mother–loving	.32 (CR15)		.32***
Mother–rejecting	.19 (CR3)		.19*
Mother–role-reversing	−.33 (CR15)		.33***
Mother–neglecting	.23 (CR9)	−.17 (CR15)	.31**
Mother–pressuring to achieve	−.21 (CR7)	−.24 (CR16)	.27**
Father–loving	−.22 (CR11)	.30 (CR15)	.43***
Father–rejecting	.32 (CR18)		.32***
Father–role-reversing	.11 (CR8)		.11
Father–neglecting	−.29 (CR15)		.29***
Father–pressuring to achieve	.17 (CR8)	−.26 (CR16)	.34***
State-of-Mind Scales			
Mother–idealization	−.23 (CR2)	.19 (CR8)	.28**
Mother–involving anger	−.23 (CR15)		.23**
Mother–derogation	.17 (CR13)		.17*
Father–idealization	−.21 (CR14)		.21*
Father–involving anger	−.23 (CR8)	.21 (CR18)	.35***
Father–derogation	.17 (CR4)		.17*
Derogation of attachment	.18 (CR2)	.24 (CR13)	.26*
Lack of memory	.31 (CR4)	−.19 (CR14)	.38***
Passivity of speech	.27 (CR11)	−.19 (CR14)	.34***
Metacognitive monitoring	−.21 (CR17)		.21*
Unresolved mourning	.18 (CR11)		.18*
Unresolved trauma	.22 (CR18)		.22*
Feared loss of child	.23 (CR4)	−.18 (CR14)	.31**
Coherence of transcript	.35 (CR15)		.35***
Coherence of mind	.26 (CR14)	−.29 (CR18)	.40***

***p < .001. **p < .01. *p ≤ .05.

others depend on me," which has as much to do with caregiving (i.e., being an attachment figure for others) as it does with one's own feelings about being attached. This is not surprising given that the AAI was originally designed to predict the effects of an adult's behavior as a caregiver to his or her young child. The third-most common item is 18, "I am not sure that I can always depend on others to be there when I need them"—a reversal of item 15. Notice that all three of these items contain the word "depend." Across the entire table, all of the items that mention depending on attachment figures appear at least once, whereas of the five items that do not appear at all, three deal with anxiety about abandonment (5, 6, and 12) and two with closeness (1 and 10). These results suggest that the major

areas of overlap between the AAI and the AAS (and therefore between state of mind with respect to attachment and romantic attachment style) concern ability to depend on others and to serve as a caregiver, or attachment figure, for others.

Prediction of AAI dimensions from self-report scales and items

The analyses presented so far are based on the lowest level of aggregation of the AAI data, the individual coder rating scales. Given that AAI data are usually reported only at the level of categories—secure, dismissing, preoccupied, and unresolved—we wanted to see how the self-report romantic attachment scales and items relate to the major dimensions that distinguish among

the AAI categories. We therefore entered all of the AAI rating scales (except unresolved trauma, which would have reduced *N* considerably) in a discriminant analysis to predict membership in the four AAI categories: secure, preoccupied, dismissing, and unresolved. (For this analysis, *N* = 124 because cases were excluded if they contained missing data on *any* of the many variables involved.)

All three discriminant functions were statistically significant. (See Table 4 for correlations among the 24 scales [all but unresolved trauma] and scores based on the three discriminant functions.) Scores based on the first function correlated negatively with coherence and mother loving, and positively with passivity of speech. This function mainly discriminated between insecure (especially preoccupied) and secure categories (χ^2 [*df* = 72] = 344.92, *p* < .001).

Scores based on the second function correlated negatively with all three derogation scales, negatively with maternal rejection, and positively with involving anger toward father. This function distinguished mainly between preoccupied and dismissing women (χ^2 [*df* = 46] = 164.38, *p* < .001). The third function, which correlated mainly with the unresolved mourning scale, discriminated unresolved women from all others (χ^2 [*df* = 22] = 43.11, *p* < .01). The percentage of the sample correctly classified by this analysis was 96%–98% of the secures, 95% of the preoccupieds, 96% of the dismissings, and 90% of the unresolveds.

Stepwise regression analyses were computed to explore the predictability of each of the three discriminant functions from romantic attachment variables. These analyses were performed in two ways, first using

Table 4. *Pooled within-group correlations between 24 AAI rating scales and three significant canonical discriminant functions used to predict four-category AAI classifications*

AAI Rating Scales	Function 1	Function 2	Function 3
Coherence of transcript	−.68	.11	.15
Coherence of mind	−.68	.18	.31
Passivity of speech	.47	.31	.16
Mother–loving	−.45	.32	.14
Father–role-reversing	.28	.19	.16
Mother–idealization	.28	−.25	.01
Father–idealization	.26	−.07	−.24
Lack of memory	.25	−.18	−.09
Father–loving	−.24	.23	.20
Mother–role-reversing	.24	.16	.13
Metacognitive monitoring	−.24	.10	.08
Mother–neglecting	.18	−.16	−.10
Feared loss of child	.12	−.12	−.06
Mother–involving anger	.10	.09	−.08
Derogation of attachment	.11	−.45	−.01
Mother–derogation	.13	−.28	.17
Mother–rejecting	.21	−.24	−.11
Father–derogation	.11	−.22	.10
Father–involving anger	.00	.12	−.09
Father–pressuring to achieve	−.03	.05	.00
Unresolved mourning	.12	.10	−.43
Father–neglecting	.06	−.14	−.22
Father–rejecting	.11	−.12	−.16
Father–pressuring to achieve	.04	.07	.12

Note: For Function 1, χ^2 (*df* = 72) = 344.92, *p* < .001. For Function 2, χ^2 (*df* = 46) = 164.38, *p* < .001. For Function 3, χ^2 (*df* = 22) = 43.11, *p* < .01. *N* = 124. Percent correctly classified: 96%.

the three Collins and Read scales as predictors and, second, using the 18 Collins and Read items. The item-level analyses were conducted to determine which particular aspects of romantic attachment styles relate most strongly to the core AAI dimensions. Scores based on the first function, *insecurity,* were predictable from the Depend scale ($\beta = -.28, p < .001; R = .28, F[1, 135] = 11.64, p < .001$). Scores based on the second function, *nonderogation,* were not predictable from any of the Collins and Read scales. Scores based on the third function, *resolved mourning,* were slightly predictable from the Anxiety scale ($\beta = -.19, p < .05; R = .19, F[1, 135] = 4.81, p < .05$).

Using individual items, the *insecurity* function score was predicted by item 14, "I am comfortable having others depend on me" ($\beta = -.18, p < .05$) and item 15, "I know that others will be there when I need them" ($\beta = -.22, p < .05$) ($R = .34, F[2, 132] = 8.69, p < .001$), the two now-familiar sides of the dependence-on-attachment-figures coin. The *nonderogation* function score was not predictable from any of the individual Collins and Read items, suggesting that it is an untapped construct in the AAS. Finally, the *resolved mourning* function score was predicted by item 11, "In relationships, I often worry that others will not want to stay with me" ($\beta = -.19, p < .05; R = .19, F[1, 133] = 4.80, p < .05$), perhaps suggesting that both of these variables tap insecurity about loss of and abandonment by attachment figures.

Taken as a whole, these analyses indicate that connections between the major security dimension of the AAI and the Collins and Read item pool have to do fairly specifically with two of the most fundamental issues in attachment theory: ability to depend on attachment figures and being comfortable serving as an attachment figure for others. In addition, there is a suggested connection between unresolved mourning about lost attachment figures and an AAS item expressing worry about abandonment (i.e., loss). The complete failure of the AAS items to predict the nonderogation function, which distinguishes the dismissing and preoccupied AAI categories, provides an important clue concerning why categorical comparisons between AAI and self-report category systems have yielded weak associations.

Discussion

The results supported our main predictions. In line with the first hypothesis, there was an extensive network of moderate-sized associations between the AAI coder-rating variables and the self-report romantic attachment scales and items, even though the self-report scales we used, the three factors of Collins and Read's (1990) Adult Attachment Scale, were not designed with the AAI in mind. Moreover, these associations were evident even though the two measures were administered 2 months apart and the self-report measure used was very brief and simple (Collins & Read, 1990). (Improvements in the psychometric properties of self-report attachment measures have occurred since this study was conducted, so better measures are now available; cf. Brennan et al., 1998.) In line with the second hypothesis, father-related AAI variables predicted aspects of self-reported romantic attachment style in our all-female sample better than did mother-related AAI variables; and mother variables outperformed father variables in predicting women's "state of mind with respect to attachment," which strongly predicts parental caregiving. Results for both hypotheses will be discussed in turn, followed by implications for future research.

Most of the similarities and connections between the AAI scales and the self-report items and scales had something to do with one of two issues: (1) feeling able to depend on others and (2) being comfortable having others depend on oneself. The first issue is the focus of one of Collins and Read's (1990) three romantic attachment scales and is explicitly articulated in that scale's items. It is represented less directly in the AAI coding scales, by such phenomena as memory failure, anger at parents, and inability to organize thoughts about child-

hood experiences with parents. Despite the very different approaches to assessment of comfort depending on attachment figures, the resulting scales are related. The second issue—serving as an attachment figure for others—is one that crept into research on romantic attachment accidentally. Hazan and Shaver (1987), in the first self-report measure of romantic attachment style, used the statement "I am comfortable having others depend on me." They did not realize that attachment theory does not include this comfort as a legitimate part of *being attached;* it is, instead, part of *being an attachment figure, or caregiver, for others* (Cassidy, 1999). In later work by Hazan and Shaver (1990) and Kunce and Shaver (1994), the potentially misleading statement was edited out of the self-report romantic attachment measure. For good or ill, however, it had already been incorporated into self-report measures constructed by Bartholomew and Horowitz (1991) and Collins and Read (1990).

Thus, when one of us (J.B.) used the Collins and Read measure in the project from which the present study is derived, item 14 in Table 1 was imported: "I am comfortable having others depend on me." This item turned out to correlate more strongly than most of the others with important AAI coding scales. Why? We suggest it is because the AAI was originally designed to predict what might be called "state of mind with respect to serving as an attachment figure for one's child." It seems also to implicitly assess a more general comfort with serving as an attachment figure. This comfort is related to self-reported comfort with serving as an attachment figure for a romantic partner—something we would not have learned had Hazan and Shaver not accidentally included the caregiving statement in their romantic attachment measure. Whether or not this item *should* be part of a romantic attachment measure (a topic that deserves deeper consideration elsewhere), it is now a source of commonality between such measures and the AAI.

The fact that the AAI and the AAS were related certainly does not mean that overall

they measure the same thing or can be substituted for each other. The degree of association was relatively modest, and due only to certain aspects of each measure. Are the differences between the two kinds of measures likely to be a function of domain differences—that is, differences between state of mind, defined mostly in relation to child–parent relationships, and romantic attachment—or mode-of-measurement differences (interviews vs. self-reports), or both? Crowell et al. (1999a) summarized the existing studies in a Table (20.1) defined by the dichotomy between child–parent and romantic domains and the dichotomy between interview and self-report measures. Even when the same kinds of measures (e.g., interviews or self-reports) are used to assess both child–parent attachment (including AAI state of mind) and attachment to romantic or marital partners, statistical associations between the two forms of attachment are only modest-to-moderate in size (e.g., Bartholomew & Shaver, 1998; Carlson, Onishi, & Gjerde, 1997; Hazan & Shaver, 1987; Owens et al., 1995). This suggests that romantic attachment styles are not isomorphic with child–parent attachment and are not explicable solely in terms of an adult's history of relationships with parents. Future research should be directed toward potentially important influences on romantic attachment style (e.g., romantic relationship history, including characteristics of a person's most important previous partners; current romantic relationship; perceptions of parents' relationship with each other; personality variables other than ones attributable to attachment history). Crowell et al. (1999a) also showed that method differences reduce the associations between variables, as would be expected.

One important avenue for future theory and research is being explored by evolutionary psychologists and anthropologists (e.g., Belsky, 1999; Chisolm, 1996; Kirkpatrick, 1998) who point to the different functions and dynamics of the domains of mating and pair-bonding, on the one hand, and parental investment, on the other. Choosing a mate is thought to be based partly on

such qualities as physical attractiveness (viewed as a rough index of health and reproductive fitness), resources, alternatives, status and dominance, and personality (e.g., kindness, intelligence). Some of these judgments may be related to assessments of potential parental investment and parenting qualities, but there are other determinants of actual parental investment as well. Although the ability to contribute to the quality and durability of a romantic pair-bond relationship may be related to the ability to serve as an effective parent, and both may be related to childhood attachment history, the two issues are partly distinct and must have some of their own unique determinants.

We should mention, at least briefly, two other issues that emerged in analyses connected with the first hypothesis. First, in the present study the AAI parental idealization and pressure to achieve scales were associated with higher rather than lower Close scores on the AAS. This is surprising because both of these scales were included in the AAI coding system because they were expected to predict childhood *insecurity;* in contrast, the AAS Close scale (measuring comfort with closeness in romantic relationships) is supposed to measure an important aspect of adult *security.* Perhaps the meaning of parental idealization and pressure to achieve are different in different samples, as a function, say, of subculture or socioeconomic status. In our sample, these parental behaviors seemed to be interpreted by, or experienced by, our female subjects as signs of parental interest and support.

Second, we were unable to predict the AAI "nonderogation" discriminant function from AAS items or scales. Because this function is associated mainly with dismissing behavior in the AAI, its lack of predictability suggests that the AAS is poor at capturing the dismissing orientation. At least two reasons explain why this might be the case. Carlson et al. (1997) have shown that the dismissing pattern of romantic attachment is the most difficult to capture with self-report items because it involves greater

defensiveness and self-deception than do the other attachment patterns. Although this may explain our inability to predict derogation of attachment figures in the AAI, it is also possible that the AAS, which was based on Hazan and Shaver's (1987) three-category typology, is simply deficient in tapping dismissing attachment because Bartholomew (1990; Bartholomew & Horowitz, 1991) had yet to argue for the dismissing pattern of romantic attachment when Hazan and Shaver's measure was created. More recent scales and item pools (e.g., Brennan et al., 1998) may make it easier to tap at least some aspects of dismissing attachment.

Our second hypothesis concerned gender-of-parent effects on state of mind and romantic attachment. In general, when the AAI coding scales are intercorrelated, mother-related variables are more strongly correlated than are father-related variables with key coder state-of-mind ratings, such as lack of memory and coherence. (Similar findings were obtained, using a different data set, in a factor analysis of the interscale correlation matrix reported by Fonagy, Steele, & Steele, 1991.) In contrast, when predicting self-report romantic attachment variables, the AAI father scales are somewhat more important than the AAI mother scales. This pattern of results suggests that heterosexually married women's feelings and expectations about male romantic partners are based partly on their feelings and expectations about their fathers. Our study needs to be replicated in a sample containing adequate numbers of both men and women, so that the relative importance to the two sexes of their childhood relationships with mothers and fathers can be assessed. (See Collins & Read, 1990, Study 3, for relevant self-report findings.)

Although it was not our intention to show either that the AAI and the AAS assess the same construct or that self-report measures can effectively measure variables such as coherence of mind or passivity of discourse, the fact that self-report measures of romantic attachment are correlated with AAI coding scales suggests that it might be

possible to create a workable self-report measure of state of mind with respect to attachment. This has been attempted in the past by AAI researchers (e.g., Benoit, 1993; Lichtenstein & Cassidy, 1991; Main, van Ijzendoorn, & Hesse, 1993), but so far this research has not been published. To date, researchers who have constructed self-report approximations of the AAI have tried to turn the AAI coding scales (e.g., lack of memory for attachment-related events, idealization of parents) directly into self-report items and scales. Because so many of the AAI scales require sophisticated inferences based on features of discourse that research participants are unlikely to notice, it is not surprising that people are poor at making those inferences.

Such a feat may not be necessary, however. In our study, the coherence-of-discourse scale was predicted with a multiple R of .40 from two self-report items: "I am comfortable having others depend on me" and "I am not sure that I can always depend on others to be there when I need them." Presumably, coherence and these self-report items are related because all three variables are related to attachment security. If the right set of self-report items concerning child–parent attachment security were written, they might adequately stand in for the major AAI dimensions even if they did not look the same. Self-report measures of romantic attachment style do not ask people to report on unconscious psychodynamics; yet these measures are related in theoretically meaningful ways to memories of emotional events in childhood (Mikulincer & Orbach, 1995), suppression of loss-related ideation (Fraley & Shaver, 1997), and affect-regulation strategies (Brennan & Shaver, 1995). The trick is to find noticeable feelings, beliefs, expectations, and behaviors that are related to, or arise from, underlying mental models and psychodynamic processes.

In conclusion, although the AAI and the AAS do not measure all of the same things, and therefore cannot be used interchangeably, they share certain underlying constructs essential to attachment theory, especially the ability to rely on attachment figures in times of need and to provide caregiving when needed. The degree of underlying similarity between the two kinds of measures is compatible with the theoretical notion that both "state of mind with respect to serving as a parental attachment figure," which is some of what the AAI measures, and a person's orientation to romantic relationships grow out of partially overlapping histories of relationships with attachment figures. We believe that studying the areas of overlap and nonoverlap between representations of childhood relationships with attachment figures, current orientation toward being a parent, and current orientation toward romantic/sexual/marital relationships will help to clarify both the content and origins of these attachment-related orientations.

References

Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist, 44,* 709–716.

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

Bakermans-Kranenburg, M. J., & van Ijzendoorn, M. H. (1993). A psychometric study of the Adult Attachment Interview: Reliability and discriminant validity. *Developmental Psychology, 29,* 870–879.

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal Relationships, 7,* 147–178.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61,* 226–244.

Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25–45). New York: Guilford Press.

Belsky, J. (1999). Modern evolutionary theory and patterns of attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 141–161). New York: Guilford Press.

Belsky, J., Woodworth, S., & Crnic, K. (1996a). Troubled family interaction during toddlerhood. *Development and Psychopathology, 8,* 477–495.

Belsky, J., Woodworth, S., & Crnic, K. (1996b). Trouble in the second year: Three questions about family interaction. *Child Development, 67,* 556–578.

Benoit, D. (1993). *Adult Attachment Questionnaire 3.0:*

Further validation and reliability assessment. Unpublished document, Department of Psychiatry, Hospital for Sick Children, Toronto, Canada.

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

Borman, E., & Cole, H. (1993, March). *A comparison of three measures of adult attachment.* Poster presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA.

Bowlby, J. (1979). *Making and breaking of affectional bonds.* New York: Tavistock.

Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books. (Original work published 1969)

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.

Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin, 21,* 267–283.

Brennan, K. A., & Shaver, P. R. (1998). Attachment styles and personality disorders: Their connections to each other and to parental divorce, parental death, and perceptions of parental caregiving. *Journal of Personality, 66,* 835–878.

Carlson, E. A. (1998). A prospective longitudinal study of disorganized/disoriented attachment. *Child Development, 69,* 1107–1128.

Carlson, K. S., Onishi, M., & Gjerde, P. F. (1997, August). *Assessment of romantic attachment: Comparison of self-report and interview methodologies.* Paper presented at the annual convention of the American Psychological Association, Chicago, IL.

Cassidy, J. (1999). The nature of the child's ties. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 3–20). New York: Guilford Press.

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

Chisolm, J. S. (1996). The evolutionary ecology of attachment organization. *Human Nature, 7,* 1–38.

Cohn, D., Silver, D., Cowan, P., Cowan, C., & Pearson, J. (1992). Working models of childhood attachment and couple relationships. *Journal of Family Issues, 13,* 432–449.

Colin, V. L. (1996). *Human attachment.* New York: McGraw-Hill.

Collins, N. L. (1996). Working models of attachment: Implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology, 71,* 810–832.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58,* 644–663.

Crowell, J. A., Fraley, R. C., & Shaver, P. R. (1999a). Measurement of individual differences in adolescent and adult attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 434–465). New York: Guilford Press.

Crowell, J. A., & Treboux, D. (1995). A review of adult attachment measures: Implications for theory and research. *Social Development, 4,* 294–327.

Crowell, J. A., Treboux, D., & Waters, E. (1993, March). *Alternatives to the Adult Attachment Interview? Self-reports of attachment style and relationships with mothers and partners.* Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA.

Crowell, J. A., Treboux, D., & Waters, E. (1999). The adult attachment interview and the relationship questionnaire: Relations to reports of mothers and partners. *Personal Relationships, 6,* 1–18.

Crowell, J. A., & Waters, E. (1997, April). *Couples' attachment representations: Stability and relation to marital behavior.* Paper presented at the biennial meeting of the Society for Research in Child Development, Washington, DC.

Dozier, M., & Kobak, R. R. (1992). Psychophysiology in attachment interviews: Converging evidence for deactivating strategies. *Child Development, 63,* 1473–1480.

Dozier, M., Stovall, K. C., & Albus, K. (1999). Attachment and psychopathology in adulthood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 497–519). New York: Guilford Press.

Feeney, J. A. (1999). Adult romantic attachment and couple relationships. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 355–377). New York: Guilford Press.

Feeney, J., & Noller, P. (1996). *Adult attachment.* Thousand Oaks, CA: Sage

Fonagy, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant–mother attachment at 1 year of age. *Child Development, 62,* 891–905.

Fraley, R. C., & Shaver, P. R. (1997). Adult attachment and the suppression of unwanted thoughts. *Journal of Personality and Social Psychology, 73,* 1080–1091.

Fraley, R. C., & Shaver, P. R. (in press). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Journal of General Psychology.*

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77–114). New York: Guilford Press.

Fyffe, C. A., & Waters, E. (1997). *Empirical classification of adult attachment status: Scoring adult attachment security on a continuum.* Paper presented at the biennial meeting of the Society for Research in Child Development, Washington, DC.

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

George, C., & Solomon, J. (1999). Attachment and caregiving: The caregiving behavioral system. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 649–670). New York: Guilford Press.

Goodman, G. S., Quas, J. A., Batterman-Faunce, J. M., Riddlesberger, M. M., & Kuhn, G. (1997). Children's reactions to and memory for a stressful

event: Influence of age, anatomical dolls, knowledge, and parental attachment. *Applied Developmental Science, 1,* 54–75.

Grice, P. (1989). *Studies in the way of words.* Cambridge, MA: Harvard University Press.

Griffin, D. W., & Bartholomew, K. (1994). The metaphysics of measurement: The case of adult attachment. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 17–52). London: Jessica Kingsley.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52,* 511–524.

Hazan, C., & Shaver, P. R. (1990). Love and work: An attachment-theoretical perspective. *Journal of Personality and Social Psychology, 59,* 270–280.

Hazan, C., & Zeifman, D. (1999). Pair bonds as attachments: Evaluating the evidence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 336–354). New York: Guilford Press.

Hesse, E. (1999). The Adult Attachment Interview: Historical and current perspectives. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 395–433). New York: Guilford Press.

Kirkpatrick, L. A. (1998). Evolution, pair-bonding, and reproductive strategies: A reconceptualization of adult attachment. In J.A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 353–393). New York: Guilford Press.

Kunce, L. J., & Shaver, P.R. (1994). An attachment-theoretical approach to caregiving in romantic relationships. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 205–237). London: Jessica Kingsley.

Lichtenstein, J., & Cassidy, J. (1991, April). *The Inventory of Adult Attachment: Validation of a new measure.* Paper presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.

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

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

Main, M., van IJzendoorn, M. H., & Hesse, E. (1993, March). *Unresolved/unclassifiable responses to the Adult Attachment Interview: Predictable from unresolved status and anomalous beliefs in the Berkeley-Leiden Adult Attachment Questionnaire.* Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), Growing points in attachment theory and research. *Monographs of the Society for Research in Child Development, 50* (1–2, Serial No. 209), 66–106.

Meehl, P. E. (1992). Factors and taxa, traits and types,

differences of degree and differences of kind. *Journal of Personality, 60,* 117–174.

Mikulincer, M., & Orbach, L. (1995). Attachment styles and repressive defensiveness: The accessibility and architecture of affective memories. *Journal of Personality and Social Psychology, 68,* 917–925.

Owens, G., Crowell, J. A., Pan, H., Treboux, D., O'Connor, E., & Waters, E. (1995). The prototype hypothesis and the origins of attachment working models: Adult relationships with parents and romantic partners. In E. Waters, B. E. Vaughn, G. Posada, & K. Kondo-Ikemura (Eds.), Caregiving, cultural, and cognitive perspectives on secure-base behavior and working models. *Monographs of the Society for Research in Child Development, 60* (2–3, Serial No. 244), 216–233.

Rholes, W. S., Simpson, J. A., & Blakely, B. S. (1995). Adult attachment styles and mothers' relationships with their young children. *Personal Relationships, 2,* 35–54.

Rholes, W. S., Simpson, J. A., Blakely, B. S., Lanigan, L., & Allen, E. A. (1997). Adult attachment styles, the desire to have children, and working models of parenthood. *Journal of Personality, 65,* 357–385.

Shaver, P. R., & Brennan, K. A. (1992). Attachment styles and the "big five" personality traits: Their connections with each other and with romantic relationship outcomes. *Personality and Social Psychology Bulletin, 18,* 536–545.

Shaver, P. R., & Clark, C. L. (1994). The psychodynamics of adult romantic attachment. In J. M. Masling & R. F. Bornstein (Eds.), *Empirical perspectives on object relations theory* (Vol. 5, pp. 105–156). Washington, DC: American Psychological Association.

Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59,* 971–980.

Simpson, J. A. (1999). Attachment theory in modern evolutionary perspective. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 115–140). New York: Guilford Press.

Simpson, J. A., & Rholes, W. S. (Eds.). (1998). *Attachment theory and close relationships.* New York: Guilford Press.

Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. *Child Development, 48,* 1184–1199.

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

van Ijzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117,* 387–403.

Waller, N. G., & Meehl, P. E. (1998). *Multivariate taxometric procedures: Distinguishing types from continua.* Newbury Park, CA: Sage.

Weinfeld, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). The nature of individual differences in infant–caregiver attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 68–88). New York: Guilford Press.