

The Adult Attachment Interview

Historical and Current Perspectives



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In 1985, the publication of a monograph entitled "Growing Points of Attachment Theory and Research" (Bretherton & Waters, 1985) marked a major turning point for the direction of the field. Here, Main, Kaplan, and Cassidy (1985) reported that an interview-based method of classifying a parent's state of mind with respect to attachment was strongly associated with the infant's behavior toward that parent during Ainsworth's strange situation procedure conducted 5 years previously (Ainsworth, Blehar, Waters, & Wall, 1978). At the same time, infant attachment classification with the mother was found predictive of verbatim transcripts of children's responses to Kaplan's version of the Separation Anxiety Test at age 6 (see also Kaplan, 1987), and both mother-child and father-child discourse patterns were found sharply predicted by strange situation behavior towards the same parent in infancy (see also Strage & Main, 1985, and Main, 1995). Taken together, the above discoveries led these authors to appropriately subtitle this publication "A Move to the Level of Representation" in attachment research.

Until that time, research in attachment had focused almost exclusively upon nonverbal behavior as observed in or found to be correlated with the Ainsworth strange situation. This structured laboratory separation and reunion procedure yields three traditional categories of infant

attachment with respect to a particular parent (secure, avoidant, and resistant or ambivalent; a fourth category, disorganized/disoriented, has subsequently been added). Studies of nonverbal behavior as related to these categories centered primarily upon (1) home observations of mother-infant interactions (see Belsky, Chapter 12, this volume) and (2) follow-up investigations examining corresponding differences in preschool and kindergarten behavior. In this latter context, children judged secure with their mothers during infancy were repeatedly found to enjoy more favorable outcomes (see Weinfield, Sroufe, Egeland, & Carlson, Chapter 4, this volume). It was not until the advent of the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984, 1985, 1996), however, that representational processes as the likely mediator of differences in parental caregiving behavior were fully comprehended and made accessible to investigation.

The AAI protocol was developed in the early 1980s, as was an accompanying system for scoring and classification (Main & Goldwyn, 1984a, 1998a). Main and Goldwyn's initial analysis showed that several continuous rating scales appearing to reflect a parent's current state of mind with respect to his or her own attachment experiences were substantially related to aspects of the infant's behavior toward that parent in the

strange situation 5 years previously. For example, scores for an infant's avoidance of the mother during the reunion episodes of the strange situation were correlated with her insistence upon lack of memory for childhood within the AAI, and with her idealization of her own mother. Finally, a strong relation was uncovered between the four categories of parental AAI response (secure/autonomous, dismissing, preoccupied, and unresolved/disorganized, described below) and the infant's strange situation response to the parent (secure, avoidant, resistant or ambivalent, and disorganized/disoriented; see Main, 1985, 1995, 1996; Main et al., 1985; Main & Goldwyn, 1998; Main & Hesse, 1990; Main & Solomon, 1990).

Since these initial publications first reporting a marked correspondence between the parent's AAI classification and the infant's strange situation response, the relation between Adult Attachment Interview and infant strange situation categories has been replicated in over 18 samples. In addition, the instrument has been extensively tested for its psychometric properties; secure-autonomous parents have repeatedly been found to be more sensitive than others to infant signals; and remarkably few subjects in clinical populations have been found secure/autonomous. Finally, when the system of interview analysis described here has been used (as opposed to alternative approaches; see below), in three out of four low-risk samples, an infant's secure versus insecure strange situation response to the mother has predicted the coherence of that individual's life narrative 16 to 20 years later.

This chapter begins with an overview of the AAI protocol and a summary of the adult attachment categories. Here the specific relations between parental AAI and infant strange situation responses are noted. Next the development of the AAI and of the scoring and classification system are considered from a historical perspective, culminating in a discussion of the greater emphasis now placed upon the analysis of the discourse properties of the interview. These properties were later found to be consonant with the principles of cooperative, rational discourse described by the linguistic philosopher P. Grice (1975, 1989). Third, AAI training institutes and their effects are mentioned briefly. Fourth, a review of present and emerging empirical findings is provided. Finally, several common queries and sources of confusion regarding the AAI and its analysis are addressed.

THE ADULT ATTACHMENT INTERVIEW: PROTOCOL AND OVERVIEW OF THE CATEGORIES

Protocol

The AAI is a semistructured, hour-long protocol consisting of 18 questions (see excerpts in Table 19.1). The entire interview exchange is transcribed verbatim (i.e., the full conversational interaction between the interviewer and the subject), although any cues to intonation, prosody, or nonverbal behavior are omitted. 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. This process is then repeated for the father, and for any other significant attachment figure (e.g., a stepfather or nanny). 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.

An especially important feature of the AAI protocol is the section addressing experiences of loss of significant persons through death. Each report of such an experience is systematically probed regarding reactions to the event, changes in feelings over time, and effects upon adult personality. Finally, the speaker is asked about the nature of the current relationship with parents, and any speaker who is now a parent himself or herself is asked how experiences of being parented may have affected responses to his or her own child.

Summary of the AAI Categories

Hesse (1996) has suggested that the central task presented to the subject by this interview is that of (1) producing and reflecting upon memories related to attachment while *simultaneously* (2) maintaining coherent (in Grice's conceptualiza-

**TABLE 19.1. Brief Précis of the Adult Attachment Interview Protocol
Excerpted from George, Kaplan, and Main (1996)**

1. To begin with, could you just help me to get a little bit oriented to your family—for example, who was in your immediate family, and where you lived?
2. Now I'd like you to try to describe your relationship with your parents as a young child, starting as far back as you can remember.
- 3-4. Could you give me five adjectives or phrases to describe your relationship with your mother/father during childhood? I'll write them down, and when we have all five I'll ask you to tell me what memories or experiences led you to choose each one.
5. To which parent did you feel closer, and why?
6. When you were upset as a child, what did you do, and what would happen? Could you give me some specific incidents when you were upset emotionally? Physically hurt? Ill?
7. Could you describe your first separation from your parents?
8. Did you ever feel rejected as a child? What did you do, and do you think your parents realized they were rejecting you?
9. Were your parents ever threatening toward you—for discipline, or jokingly?
10. How do you think your overall early experiences have affected your adult personality? Are there any aspects you consider a setback to your development?
11. Why do you think your parents behaved as they did during your childhood?
12. Were there other adults who were close to you—like parents—as a child?
13. Did you experience the loss of a parent or other close loved one as a child, or in adulthood?
14. Were there many changes in your relationship with parents between childhood and adulthood?
15. What is your relationship with your parents like for you currently?

Note. The AAI cannot be conducted on the basis of this brief, modified précis of the protocol, which omits several questions as well as the critical follow-up probes. The full protocol, together with extensive directions for administration, can be obtained by writing to Professor Mary Main, Department of Psychology, University of California at Berkeley, Berkeley, CA 94720. Adapted from George, Kaplan, and Main (1996). Copyright 1996 by the authors. Adapted by permission.

tion, consistent/collaborative) discourse with the interviewer. This is not as easy an undertaking as it might appear, and George et al. (1984, 1985, 1996) have remarked upon the potential of the protocol to “surprise the unconscious.” The interview moves at a relatively rapid pace, requiring the speaker to reflect upon and answer a multitude of complex questions regarding life history. Ample opportunities are thereby provided for speakers to contradict themselves, to find themselves unable to answer questions clearly, and/or to be stimulated into excessively lengthy or digressive discussions of particular topics. To maintain a consistent and collaborative narrative, a speaker must remember (and potentially reflect upon) what he or she has said, in order to integrate the overall presentation as it unfolds.

In the current system of AAI analysis (see below for a historical overview), speakers are judged “secure/autonomous” when they produce an acceptably coherent and collaborative narrative, whether experiences are reported as having been favorable or unfavorable. In essence, these speakers appear to answer questions with sufficient (but not excessive) elaboration, and then return the conversational turn to the interviewer. This, again, can be achieved whatever the nature

of the experiences being described, and thus, for example, an individual providing a coherent narrative that includes descriptions of physical or sexual abuse by parents will, following this rule system, be judged secure/autonomous. The children of coherent speakers are consistently classified as secure.

Interviews are classified as “dismissing” when discourse appears aimed at minimizing the discussion of attachment-related experiences. Typically, these transcripts violate coherence in that they are internally inconsistent, while responses are often excessively terse (e.g., “I don’t remember”). Descriptions of parents are most often favorable to highly favorable. Unlike secure individuals utilizing similar descriptors, however, those classified as dismissing fail to provide supportive evidence for these globally positive representations, and not infrequently contradict them. For example, it is not uncommon for dismissing speakers to respond to later interview queries in ways clearly at odds with the positive impression presented at the outset (e.g., describing instances of being afraid to go to a parent when badly hurt). Speakers falling in this category have repeatedly been found to have children classified as avoidant.

Individuals classified as "preoccupied," while not necessarily internally inconsistent, produce narratives that nonetheless violate the principle of collaboration (described below). Thus the interview questions appear to stimulate memories, but the speaker is often unable to maintain a focus or to contain his or her responses to a given question. In many cases, therefore, the memories aroused, rather than the intent of the question itself, appear to draw the subject's attention and guide the subject's speech (Hesse, 1996). Among some preoccupied speakers, this is evidenced in lengthy, angry discussions of childhood interactions with the parent(s), which may inappropriately move into the present tense and/or into discussions of the present relationship. Preoccupied speakers may also digress to remote topics, use vague language and on occasion oscillate regarding their view of a parent several times within the same sentence. Infants of these speakers are typically judged resistant/ambivalent.

The above provides a summary of what Main (1995) has termed the three central or "organized" AAI categories. These categories, again, parallel and predict the three original infant strange situation response patterns delineated by Ainsworth et al. (1978). Although both dismissing and preoccupied narratives have been described as incoherent, they are each nonetheless considered organized because a singular strategy or approach to the discourse task is manifested. More specifically, dismissing speakers attend chiefly to providing a positive impression of childhood experiences while avoiding discussing particular events. Preoccupied speakers, in contrast, maximize attention to attachment-related experiences and their effects at the expense of retaining appropriate conversational collaboration.

Two additional AAI categories involve either local disorganization surrounding discussions of potentially traumatic events, or failure to maintain an organized discourse strategy across the interview as a whole. The first, termed "unresolved/disorganized" is assigned when substantial lapses in the monitoring of reasoning or discourse occur during discussions of potentially traumatic events (e.g., significant loss experiences or abuse; see below). Unresolved attachment has repeatedly been found to be predictive of disorganized/disoriented infant strange situation behavior, a category added to Ainsworth's original three-part classification system by Main and Solomon (1986, 1990). An overview of the first four adult attachment categories as seen in relation to infant strange situation behavior is

provided in Table 19.2. This table incorporates several references to Grice's maxims, discussed at length below.

Finally, the recently delineated "cannot classify" category (Hesse, 1996) is assigned when the interview manifests a combination of contradictory and incompatible linguistic patternings. This category is too new to have been subjected to psychometric examination, and has not yet been found to be related to any specific infant strange situation response (other than disorganized, see Ammaniti & Speranza, 1994). The cannot classify category has, however, been found to be associated with adults' histories of psychiatric disorder, marital and criminal violence, and sexual abuse.

To this point, the global linguistic features of the five AAI categories have been briefly summarized, and four of these categories have been noted to be predictive of particular infant strange situation response patterns. What is most striking about this association is that it suggests that the form in which an individual presents his or her life narrative (regardless of its content) predicts caregiving behavior in highly specific and systematic ways. Thus the combination of internal consistency and collaboration in a speaker's discourse regarding attachment predicts that speaker's capacity to impart security to an infant. The specificity of these linkages between language and nonverbal behavior is unprecedented.

THE DEVELOPMENT OF THE ADULT ATTACHMENT INTERVIEW: A BRIEF HISTORY

Evolution of the Protocol

The AAI and its accompanying scoring and classification system evolved in the context of a 6-year follow-up study of mothers, fathers, and their children who had been seen in the strange situation when the children were 12 (mothers) and 18 (fathers) months of age. Data collection began in January 1982, with families participating in several procedures: free play (Main et al., 1985), sandbox play (Weston & Richardson, 1985), and parent-child reunions (Main et al., 1985; Main & Cassidy, 1988). Early pilot-testing of the interview protocol was conducted by Carol George and Nancy Kaplan. George's doctoral dissertation (George, 1984) focused on videotaping family responses to watching excerpts from a documentary about a 2-year-old undergoing fos-

TABLE 19.2. AAI Classifications and Corresponding Patterns of Infant Strange Situation Behavior

Adult state of mind with respect to attachment	Infant strange situation behavior
<p><u>Secure/autonomous (F)</u></p> <p>Coherent, collaborative discourse. Valuing of attachment, but seems objective regarding any particular event/relationship. Description and evaluation of attachment-related experiences is consistent, whether experiences are favorable or unfavorable. Discourse does not notably violate any of Grice's maxims.</p>	<p><u>Secure (B)</u></p> <p>Explores room and toys with interest in pre-separation episodes. Shows signs of missing parent during separation, often crying by the second separation. Obvious preference for parent over stranger. Greets parent actively, usually initiating physical contact. Usually some contact maintaining by second reunion, but then settles and returns to play.</p>
<p><u>Dismissing (Ds)</u></p> <p>Not coherent. Dismissing of attachment-related experiences and relationships. Normalizing ("excellent, very normal mother"), with generalized representations of history unsupported or actively contradicted by episodes recounted, thus violating Grice's maxim of quality. Transcripts also tend to be excessively brief, violating the maxim of quantity.</p>	<p><u>Avoidant (A)</u></p> <p>Fails to cry on separation from parent. Actively avoids and ignores parent on reunion (i.e., by moving away, turning away, or leaning out of arms when picked up). Little or no proximity or contact-seeking, no distress, and no anger. Response to parent appears unemotional. Focuses on toys or environment throughout procedure.</p>
<p><u>Preoccupied (E)</u></p> <p>Not coherent. Preoccupied with or by past attachment relationships/experiences, speaker appears angry, passive, or fearful. Sentences often long, grammatically entangled, or filled with vague usages ("dadadada," "and that"), thus violating Grice's maxims of manner and relevance. Transcripts often excessively long, violating the maxim of quantity.</p>	<p><u>Resistant or ambivalent (C)</u></p> <p>May be wary or distressed even prior to separation, with little exploration. Preoccupied with parent throughout procedure; may seem angry or passive. Fails to settle and take comfort in parent on reunion, and usually continues to focus on parent and cry. Fails to return to exploration after reunion.</p>
<p><u>Unresolved/disorganized (U)</u></p> <p>During discussions of loss or abuse, individual shows striking lapse in the monitoring of reasoning or discourse. For example, individual may briefly indicate a belief that a dead person is still alive in the physical sense, or that this person was killed by a childhood thought. Individual may lapse into prolonged silence or eulogistic speech. The speaker will ordinarily otherwise fit Ds, E, or F categories.</p>	<p><u>Disorganized/disoriented (D)</u></p> <p>The infant displays disorganized and/or disoriented behaviors in the parent's presence, suggesting a temporary collapse of behavioral strategy. For example, the infant may freeze with a trance-like expression, hands in air; may rise at parent's entrance, then fall prone and huddled on the floor; or may cling while crying hard and leaning away with gaze averted. Infant will ordinarily otherwise fit A, B, or C categories.</p>

Note. Descriptions of the adult attachment classification system are summarized from Main, Kaplan, and Cassidy (1985) and from Main and Goldwyn (1984a, 1998a). Descriptions of infant A, B, and C categories are summarized from Ainsworth, Blehar, Waters, and Wall (1978), and the description of the infant D category is summarized from Main and Solomon (1990). Data from Main (1996).

ter care placement ("Thomas"; see Robertson & Robertson, 1967–1972); Kaplan's master's thesis investigated 6-year-olds' responses to an adaptation of Hansburg's Separation Anxiety Test using pictured parent-child separations (Kaplan, 1984). Nancy Kaplan and a visiting London anthropology student, Ruth Goldwyn, served as AAI interviewers, and by the summer of 1982 Main and Goldwyn had begun to devise a scoring and classification system for interview analysis.

Recognition of the Match between Responses to Protocol Inquiries and the Quality of the Infant's Attachment to the Speaker

The Adult Attachment Interview evolved, then, somewhat serendipitously out of a diverse group of research aims. At the time of its original development, however, the ways in which it would actually be employed in research were somewhat unclear. During a review of the early protocols,

Main became intrigued by a particular narrative that, for reasons not yet fully specifiable, appeared to contain discourse of a kind that would be produced by a parent whose baby would be classified B4 in the strange situation. B4 is a subclassification of security in which emotional expressions of distress and desire for contact after separation are exaggerated, as compared to prototypically secure (B3) infants. Although Main had not yet operationalized the reasons leading to the initial conclusion that the particular speaker under study would have had a child showing a B4 response to him 5 years earlier, this in fact turned out to be the case.

How was it that when this transcript was read, the speaker was predicted to be the parent of a B4 infant? Although there are no definitive answers to this question, several possible explanations arise. The first is that perhaps the reader imagined how this speaker would, as a parent, stimulate and shape an infant response which—although essentially secure—nonetheless required exaggeration of affect in order to maintain the speaker's attention. In contrast, like a B4 infant, the speaker could have conveyed the impression of attempting in a mildly exaggerated way to draw the listener's attention and perhaps even to evoke a caring or sympathetic response. A third possibility is, of course, that both factors were contributory.

The discovery of this correspondence was so intriguing that additional transcripts were read, and the strange situation response of the infant was often correctly predicted. This preliminary outcome led Main and Goldwyn to attempt to develop a formal rule system for capturing the processes involved in making these distinctions. The approach taken to this task began with the random selection of a series of 44 "development" transcripts, which were then categorized, with feedback regarding the strange situation status of each speaker's infant being obtained after each narrative was analyzed. When an appropriate match was found, the "rules" that had been generated to classify the transcript were retained and at times elaborated (see Main & Cassidy, 1988, for a description of a similar development procedure). As this process moved forward, and further matches and mismatches appeared, the existing rules were confirmed, disconfirmed, and refined (Main, 1993, 1995). Gradually, a preliminary system for classifying transcripts into one of three categories predictive of Ainsworth's original infant strange situation response patterns was de-

veloped. Later, rules for identifying transcripts predictive of Main and Solomon's (1986, 1990) fourth strange situation category were generated.

Formalizing the Relation between Parental AAI and Infant Strange Situation Response

After the 44 transcripts in the development sample were discarded, the rule system was tested "blind" on the remaining 66 transcripts. Here no feedback respecting individual cases was provided, and no further adjustments were made to the system. This original rule system was largely composed of a set of general descriptors of the overarching characteristics that made each of the three categories unique. These descriptors have remained active and critical components in the classification process to the present time.

The AAI categories were introduced above via an emphasis upon the discourse process itself—that is, the production of a coherent or incoherent life narrative emerging out of an interaction between two speakers. Although the original category descriptors are now always considered within this larger conversational context, the reader should also be familiar with their more content-oriented parameters. These can be summarized as follows (Main & Goldwyn, 1998a, pp. 148–177).

Secure/Autonomous: Freely Valuing and Yet Objective (F)

Transcripts are placed in the secure/autonomous category when the speaker appears to value attachment relationships and regard attachment-related experiences as influential, but seems relatively independent and objective (autonomous) regarding any particular experience or relationship, and free to explore thoughts and feelings during the course of the interview. If one or both parents are described as loving, there is sufficient evidence to support this description. If, in contrast, the parents are portrayed negatively, these descriptions appear reflective, thoughtful, and often implicitly forgiving. Discussions tend to include "an avowal of a need to depend on others . . . setting parents in relevant contexts when criticizing them, or showing a sense of proportion and balance through humor" (Main & Goldwyn, 1998a, p. 160). Finally, these speakers often evidence a capacity for metacognitive monitoring of their memories and atti-

guage (Main, 1991), described as "an ability to examine the evidence afresh, even while the interview is in progress" (Main & Goldwyn, 1998a, p. 161).

Some speakers manifesting the above-described characteristics will seem to have had highly unfavorable attachment-related experiences, in which case they are often referred to as "earned secure." This designation is based on the notion that the nature of their experiences as presented would ordinarily create a pathway to an insecure state of mind, suggesting that "earned secure" individuals have gained access to a trajectory that would not have been anticipated. "Earned secure" status has been of interest to many investigators, especially in view of the fact that as parents these individuals have to date been found no less sensitive and responsive to their children than those with apparently more favorable early attachment-related experiences (Pearson, Cohn, Cowan, & Cowan, 1994), even when parenting under stressful conditions (Phelps, Belsky, & Crnic, 1998). Later, however, some of the complexities involved in assessing "earned secure" attachment status are discussed.

Dismissing of Attachment: Dismissing, Devaluing, or "Cut Off" from Attachment Relationships and Experiences (Ds)

The dismissing category is assigned to transcripts in which the speaker's state of mind seems to indicate an attempt to limit the influence of attachment relationships in thought, in feeling, or in daily life. There is an implicit claim to strength, normality, and/or independence, and parents are often presented in positive to highly positive terms that are either unsupported or contradicted. In addition, potential negative effects of parenting or other untoward experiences are denied or minimized, or (rarely) attachment figures or attachment-related phenomena are derogated. What dismissing adults appear to have in common is an organization of thought that permits attachment to remain relatively deactivated (Main, 1995).

Preoccupied: Preoccupied with or by Early Attachments or Attachment-Related Experiences (E)

Interviews are placed in the preoccupied category when the transcript suggests an excessive, confused, and unobjective preoccupation with

particular attachment relationships or experiences. Discussions of these experiences often appear neither fruitful, objective, nor incisive. Descriptions of early relationships may seem vague and uncritical, or else angry, conflicted, and unconvincingly analytical. Finally, some (rare in low-risk samples) seem fearfully preoccupied with and overwhelmed by traumatic experiences, the discussion of which interrupts portions of the interview focused on other topics.

Correspondence of the First Three Categories with Strange Situation Classifications

In Main and Goldwyn's first formal investigation, the three organized infant strange situation classifications (secure, avoidant, and resistant/ambivalent) were compared with the three existing organized AAI classifications (secure/autonomous, dismissing, and preoccupied), and a significant correspondence was uncovered for both the mother-infant and father-infant subsamples (Main, 1985; Main & Goldwyn, 1998b). The three-way match for the 32 mothers and infants seen in the strange situation 5 years previously was 75% (37% expected by chance, $\kappa = .61$, $p < .001$), while the three-way match for the 35 fathers and infants was 69% (46% expected by chance, $\kappa = .41$, $p < .005$). In addition, a highly significant correspondence appeared regarding subcategories (46% match across the eight corresponding infant and adult subcategories, with 17% match expected by chance).

Hence, what had begun with a single transcript suspected of belonging to the parent of a B4 infant, but yet to be operationalized with respect to the characteristics leading to this conclusion, had now been developed into a global system encompassing all the categories and subcategories corresponding to those originally delineated for the strange situation (Ainsworth et al., 1978). The system, then, had been sufficiently refined within the development sample to allow the replication of this original prediction in a larger sample subjected to "blind," formal analysis.

AAI Scale Scores for Inferred Early Experiences and Current State of Mind

In addition to the classification descriptors, a preliminary set of continuous (9-point) scales regarding (1) inferred early experiences with each parent and (2) the speaker's current state of mind

with respect to attachment had been developed. Strikingly, AAI scale scores were found to be correlated with continuous scores for particular infant strange situation behavior patterns, so that, for example, across this sample of 32 mothers scores for idealization of the speaker's mother ($r = .47$) and father ($r = .43$), and her insistence on lack of memory for childhood ($r = .41$) were found to be associated with infant scores for avoidance of the mother 5 years previously, while the mother's preoccupied anger in speaking of her own mother ($r = .56$) was correlated with her infant's earlier angry resistance (Main & Goldwyn, 1984b, 1998b). Similar patterns of correlations emerged among the 35 fathers seen in this sample, so that, for example, the infant's avoidance of the father in the strange situation 5 years earlier was associated with father's insistence upon lack of memory for childhood ($r = .47$), his idealization of his own mother ($r = .53$), and interestingly, most strongly of all, with his idealization of his own father ($r = .64$).

Several new scales have since been developed, and Table 19.3 provides an overview of selected continuous scoring systems (Main & Goldwyn, 1998a). Based on five AAI samples (364 subjects, including a large subgroup of Bay Area subjects collected by Main, Hesse, and van IJzendoorn), Fyffe and Waters (1997) have recently demonstrated the close fit between the continuous scale scores assigned to interview transcripts and interview classifications. Thus, two multiple discriminant functions (secure vs. insecure, and dismissing vs. preoccupied) have been derived, which (1) permit researchers to test for expectable relations between scale scores and classifications in new samples and (2) allow secure, preoccupied, and dismissing states of mind to be approached from a continuous, as well as a categorical, perspective. The continuous scales are also each of import in themselves and are

coming into increasing use in emerging studies. For reasons of space, however, this review of AAI studies must necessarily focus upon categorical findings.

Unresolved/Disorganized with Respect to Potentially Traumatic Experiences (U)

The next discovery regarding the AAI (Main & Hesse, 1990) was that marked lapses in the metacognitive monitoring of reasoning or discourse during the discussion of loss experiences (see below) were related to disorganized infant behavior as defined by Main and Solomon (1990). More specifically, in a subsample of 53 mothers and infants drawn from the Main and Goldwyn study, it was reported that in "blind" analyses only 16% (3 of 19) of mothers showing no significant lapses had disorganized infants, while 91% (11 of 12) with marked discourse/reasoning lapses (unresolved mothers) had infants who had been judged disorganized with them in the strange situation 5 years previously. Thus there was now an AAI category corresponding to and predictive of each of the four strange situation categories in use at that time.

Elaborations and Reconceptualizations in the AAI Scoring and Classification System

Since its inception, the AAI scoring and classification system has undergone a number of changes, the most significant being a refinement of the continuous scales. This made it possible to quantify distinctions in narrative form in ways that took the discourse process itself (i.e., the conversational interaction between interviewer and subject) more fully into consideration. This advance led in turn to the realization that the approach being utilized in fact fit well with the

TABLE 19.3. "State-of-Mind" Scales Used in the AAI, Related to the Three Major Categories

Scales associated with the secure/autonomous adult attachment category

*Cohere*nce of transcript. For the highest rating, the speaker exhibits a "steady and developing flow of ideas regarding attachment." The person may be reflective and slow to speak, with some pauses and hesitations, or speak quickly with a rapid flow of ideas; overall, however, the speaker seems at ease with the topic, and his or her thinking has a quality of freshness. Although verbatim transcripts never look like written narratives, there are few significant violations of Grice's maxims of quantity, quality, relation, and manner. The reader has the impression that on the whole this text provides a "singular" as opposed to a "multiple" model of the speaker's experiences and their effects (see Main, 1991).

(continued)

TABLE 19.3. (continued)

Metacognitive monitoring. For the highest rating, evidence of active monitoring of thinking and recall is evident in several places within the interview. Thus the speaker may comment on logical or factual contradictions in the account of his or her history, possible erroneous biases, and/or the fallibility of personal memory. Underlying metacognitive monitoring (Forguson & Gopnik, 1988) is active recognition of an appearance–reality distinction (the speaker acknowledges that experiences may not have been as they are being presented); representational diversity (e.g., a sibling may not share the same view of the parents); and representational change (e.g., the speaker remarks that what is said today might not have been said yesterday).

Scales associated with the dismissing adult attachment category

Idealization of the speaker's primary attachment figure(s). This scale assesses the discrepancy between the overall view of the parent taken from the subject's speech at the abstract or semantic level, and the reader's inferences regarding the probable behavior of the parent. Since the reader has no knowledge of the speaker's actual history, any discrepancies come from within the transcript itself. For the highest rating, there is an extreme lack of unity between the reader's estimate of the speaker's probable experience with the primary attachment figure(s) and the speaker's positive to highly positive generalized or "semantic" description. Despite inferred experiences of, for example, extreme rejection or even abuse, the portrait of the parent is consistently positive, and gratuitous praise of the parents may be offered (e.g., references to "wonderful" or "excellent" parents).

Insistence on lack of memory for childhood. This scale assesses the speaker's insistence upon her inability to recall her childhood, especially as this insistence is used to block further queries or discourse. The scale focuses upon the subject's direct references to lack of memory ("I don't remember"). High ratings are given to speakers whose first response to numerous interview queries is "I don't remember," especially when this reply is repeated or remains firmly unelaborated. Low scores are assigned when speakers begin a response with a reference to lack of memory, but then actively and successfully appear to recapture access to the experience they have been asked to describe.

Active, derogating dismissal of attachment-related experiences and/or relationships. This scale deals with the cool, contemptuous dismissal of attachment relationships or experiences and their import, giving the impression that attention to attachment-related experiences (e.g., a friend's loss of a parent) or relationships (those with close family members) is foolish, laughable, or not worth the time. High ratings are assigned when a speaker makes no effort to soften or disguise his or her dislike of the individual or of the topic, so that—in keeping with the apparent intent of casting the individual (or topic) aside ("My mother? A nobody. No relationship. Next question?")—the sentences used are often brief and the topic is quickly dropped. Moderately low scores are given for "gallows" humor: "Oh hell, I didn't mind another separation, I guess that one was #13." (Note: Speakers receiving high scores on this scale are assigned to a relatively rare adult attachment subcategory, Ds2, in which attachment figures are derogated rather than idealized.)

Scales associated with the preoccupied adult attachment category

Involved/involving anger expressed toward the primary attachment figure(s). Accurate ratings on this scale depend upon close attention to the form of the discourse in which anger towards a particular attachment figure is implied or expressed. Direct descriptions of angry episodes involving past behavior ("I got so angry I picked up the soup bowl and threw it at her") or direct descriptions of current feelings of anger ("I'll try to discuss my current relationship with my mother, but I should let you know I'm really angry at her right now") do not receive a rating on the scale. High ratings are assigned to speech that includes, for example, run-on, grammatically entangled sentences describing situations involving the offending parent; subtle efforts to enlist interviewer agreement; unlicensed, extensive discussion of surprisingly small recent parental offenses; extensive use of psychological jargon (e.g., "My mother had a lot of material around that issue"); angrily addressing the parent as though the parent were present; and, in an angry context, slipping into unmarked quotations from the parent.

Passivity or vagueness in discourse. High scores are assigned when, throughout the transcript, the speaker seems unable to find words, seize on a meaning, or focus upon a topic. The speaker may, for example, repeatedly use vague expressions or even nonsense words; add a vague ending to an already completed sentence ("I sat on his lap, and that"); wander to irrelevant topics; or slip into pronoun confusion between the self and the parent. In addition, as though absorbed into early childhood states or memories, the subject may inadvertently (not through quotation) speak as a very young child ("I runned very fast") or describe experiences as they are described to a young child ("My mother washed my little feet"). Vague discourse should not be confused with restarts, hesitations, or dysfluency.

work of the linguistic philosopher Grice (1975, 1989) regarding the principles of cooperative discourse.

*Incorporating Discourse Properties
as Conceptualized by Grice
into the Interview Analysis*

From the beginning, scores for overall coherence of AAI transcript were found to be a strong correlate of infant security of attachment (e.g., $r [31] = .48$ for mothers, $r [34] = .53$ for fathers; Main, 1985; Main & Goldwyn, 1998). *Webster's Dictionary* (1959, p. 520) states that the term "coherence" is derived from the Latin, meaning approximately "a sticking together or uniting of parts." Elaborating upon this definition, Main and Goldwyn (1998a) have stated that "coherence" may be identified as "a connection or congruity arising from some common principle or relationship; consistency; [or] connectedness of thought, such that the parts of the discourse are clearly related, form a logical whole, or are suitable or suited and adapted to context" (p. 44). From this point of view, coherence involves more than simply internal consistency. This is made clear in the statement "form a logical whole, or are suitable to . . . and adapted to context" (emphasis added). In other words, even if an individual speaks in a manner that is plausible and internally consistent, thereby adhering to the first aspect of the criterion, he or she may still discuss a topic at excessive length or make obscure analogies, thus failing to shape speech in a manner suitable to the discourse exchange. Thus conversational cooperation, as well as internal consistency, was an important component in Main and Goldwyn's original conceptualization of coherence (Main, in press).

Grice's principles of cooperative, rational discourse thus appeared to relate to the scoring and classification system already constructed for the AAI. Grice (1975, 1989) identified rational or coherent discourse as following an overriding "Cooperative Principle," which normally¹ requires adherence to four maxims and can be summarized as follows:

- Quality*—be truthful, and have evidence for what you say.
- Quantity*—be succinct, and yet complete.
- Relation*—be relevant to the topic at hand.
- Manner*—be clear and orderly.

To participate most effectively in the interview, then, the speaker must respond to each

question as relevant, and then relinquish his or her conversational turn. Discourse is judged coherent when a subject appears able to access and evaluate memories while *simultaneously* remaining plausible (consistent, or implicitly truthful) and collaborative (Hesse, 1996). In presentations of this kind, the discussion and evaluation of attachment-related experiences are reasonably consistent, clear, relevant, and succinct, leading to relatively high AAI coherence scores and placement in the secure/autonomous category.

As discussed earlier, in dismissing interviews typically one or both parents are described in positive terms that are unsupported or contradicted. Intriguingly, in the Main and Goldwyn scoring system, these speakers had already been identified via high scores for idealization of the parent(s), which pointed to a violation of Grice's maxim of quality ("have evidence for what you say"). Many dismissing speakers had also been described as excessively succinct, violating quantity by cutting short the conversational exchange by using such statements as "I don't remember." These speech habits had been quantified as insistence on lack of memory.

Preoccupied speakers tend primarily to violate Grice's maxims of relevance, quantity, and manner, which can be termed the maxims of collaboration. With respect to relevance, some preoccupied speakers wander from topic to topic or move away from the context of the query (e.g., discussing current relations with parents when asked about childhood experiences), while others became embroiled in excessively lengthy descriptions of past or current problems with parents. Violations of manner also typify certain preoccupied speakers, as seen in vague speech ("sort of, sort of—and that"), excessive use of psychological jargon ("my mother had a lot of material around that issue"), and use of nonsense words ("dididididi"). Phenomena conforming to these violations and pointing to the preoccupied classification had already been quantified in continuous scales identifying passivity or vagueness of discourse (manner) and involved/involving anger (relevance, quantity, and manner).

*Development of the Unresolved/Disorganized
Attachment Category*

Main and Goldwyn had noted as early as 1984 that the parents of disorganized/disoriented infants often spoke in unusual ways regarding loss experiences. At that time, however, the specific linguistic features that led to considering such in-

dividuals as tentatively "unresolved" were not well operationalized. Unresolved or "disordered" mourning had most commonly been understood as falling into two general categories: (1) "chronic mourning," a continuing strong grief reaction that does not abate over an extended period of time (but see Fraley & Shaver, Chapter 32, this volume); or (2) "failed mourning," in which expectable grief is substantially minimized or does not occur (see Bowlby, 1980). As the analysis of discussions of loss experiences within the AAI development sample proceeded, however, it became evident that the linguistic indicators of "unresolved" attachment status in adults that predicted disorganized attachment in infants did not appear as explicit manifestations of chronic or failed mourning.

Over time, it would become increasingly clear that what the parents of disorganized infants had in common were various indications of what was ultimately termed "lapses in metacognitive monitoring" during discussions of potentially traumatic experiences (Hesse & Main, in press). More specifically, the AAI transcripts of these individuals were distinguished by the appearance of (ordinarily) brief slips in the apparent monitoring of thinking or the discourse context during the discussion of loss or (later) other potentially traumatic events. These discourse/reasoning lapses appear suggestive of temporary alterations in consciousness or working memory, and are believed to represent either interference from normally dissociated memory or belief systems, or unusual absorptions involving memories triggered by the discussion of traumatic events (Hesse & Main, 1999; Hesse & van IJzendoorn, 1998; Hesse & van IJzendoorn, in press).

Lapses in the monitoring of *reasoning* are manifested in statements suggesting that the speaker is temporarily expressing ideas that violate our usual understanding of physical causality or time-space relations. Marked examples of reasoning lapses are seen when speakers make statements indicating that a deceased person is believed simultaneously dead and not-dead in the physical sense—for example, "It was almost better when she died, because then *she could get on with being dead* and I could get on with raising my family" (Main & Goldwyn, 1998a, p. 118; emphasis added). This statement implies a belief, operative at least in that moment, that the deceased remains alive in the physical sense (albeit perhaps in a parallel world). Statements of this kind may thus indicate the existence of incompatible belief and memory systems, which, nor-

mally dissociated, have intruded into consciousness simultaneously as a result of queries regarding the nature of the experience and its effects.

Lapses in the monitoring of discourse, in contrast, sometimes suggest that the topic has triggered a "state shift" indicative of considerable absorption, frequently appearing to involve entrance into peculiar, compartmentalized states of mind (Hesse, 1996; Hesse & van IJzendoorn, in press). Thus, for example, an abrupt alteration or shift in speech register inappropriate to the discourse context occurs when a subject moves from his or her ordinary conversational style into a eulogistic or funereal manner of speaking, or provides excessive attention to detail.

Both state shifts and the sudden appearance of incompatible ideas suggest momentary but qualitative changes in consciousness.² Discourse/reasoning lapses of the kinds just described often occur in a high-functioning individual and are normally not representative of the speaker's overall conversational style. For this reason, among others, transcripts assigned to the unresolved/disorganized (hereafter, unresolved) category are given a best-fitting alternate classification (e.g., U/Ds or unresolved/dismissing).

Emergence of the Cannot Classify Adult Attachment Category

As mentioned earlier, a fifth interview category, "cannot classify," emerged as expert judges began noting a small percentage of transcripts that failed to meet criteria for placement in one of the three central or organized attachment categories. This was first observed in transcripts where, for example, an unsupported positive description of one of the parents led to a relatively high idealization score, while in direct contradiction to the expected global patterning, this same parent was later discussed in an angrily preoccupied manner. Thus the idealization score called for placement in the dismissing category, while other portions of the transcript called for preoccupied category placement. Main and Hesse (see Hesse, 1996) therefore concluded that these transcripts were unclassifiable and should be placed in a separate group.

TRAINING INSTITUTES AND THEIR EFFECTS

Since its inception, the AAI has been used in many different countries and research contexts,

with new studies emerging on a continuous basis. The methodology is complex, however, and achieving competence at scoring and classifying transcripts requires a significant investment of time.

The first formal 2-week AAI training institute, which included 12 attendees, was held at the University of Virginia in 1985, with Mary Ainsworth acting as host and participant. A second institute was organized by John Bowlby and John Byng-Hall at the Tavistock Clinic in 1987, and in 1988 two additional institutes were held at the University of Virginia. Having established reliability across 100 transcripts, Mary Ainsworth served as cotrainer for the first of these institutes with Mary Main. At this time, the 2-week training emphasized a "top-down" or global-features approach to mastering a recognition of the differing categories.

In 1989, the first institute made up of non-native English speakers was organized by Massimo Ammaniti and Nino Dazzi at the University of Rome. This institute was taught by Mary Main and Erik Hesse, and it was concluded that because of potential complications created by working from English texts, participants would undertake the analysis of only one case (as opposed to two or three cases) per day. The surprising result of this "experiment" was that trainees appeared to gain a grasp of the system more quickly, and to apply it with greater accuracy. Future institutes therefore followed this format, and in 1991 a further important change was implemented, in that greater emphasis was given to a "bottom-up" or scale-oriented approach to the transcripts and their classification.

From 1989 to 1997, only Mary Main and Erik Hesse served as qualified trainers in the AAI. In 1997, a 2-week "training to train" institute was organized at Berkeley, certifying four new trainers (Nino Dazzi, Deborah Jacobvitz, David Pederson, and June Sroufe) to teach the scoring and classification system. As in the case of the 2-week strange situation training institutes held at Minnesota (see A. Sroufe, 1990), all AAI institutes are now followed by a 30-case reliability check.

EMPIRICAL FINDINGS AND EMERGING DIRECTIONS

Empirical work regarding the AAI can be roughly divided into six topical or conceptual areas. The first is the series of studies replicating the

capacity of the AAI to predict an infant's strange situation response to the speaker. It has also been critical to test the psychometric properties of the instrument; to examine relations to parental behavior, particularly parental sensitivity to infant signals; to investigate clinical populations; and to compare strange situation assessments in infancy and the *same* individuals' later responses to the AAI. At present, the AAI is also being used to address many new research topics, including, for example, attachment in couples and the applicability of the instrument to latency-age children.

Predicting Infant Strange Situation Response from Parental Adult Attachment Interviews

Despite the impressive nature of the initial findings regarding the prediction of infant strange situation response from parental attachment interviews, replication remained a first necessity. Using a Charlottesville sample with interviews coded by Mary Ainsworth 2 to 6 months following the strange situation ($n = 45$), Ainsworth and Eichberg (1991)—"blind" to infant strange situation status—replicated the relation between the three organized AAI categories and infant strange situation behavior (80% correspondence; for reasons of space limitation, statistics are no longer given for early individual studies of AAI—strange situation correspondence, but see van IJzendoorn, 1995, below).

Ainsworth (personal communication, 1988) also replicated the adult to infant sub-classification match reported by Main and Goldwyn (1998b), finding 45% correspondence (18% expected by chance). Additionally, as in the Main and Hesse (1990) report, unresolved attachment status strongly predicted disorganized strange situation response (89% correspondence). As regards unresolved adult attachment status, Ainsworth and Eichberg demonstrated that loss in and of itself (even early loss of a parent) did not predict infant disorganization. Instead, infant disorganization was related specifically to lapses in discourse or reasoning surrounding the discussion of loss.

Another critical issue regarding Adult Attachment Interview—strange situation correspondence was the possible influence of the offspring upon the parent's state of mind. To rule out this potential confound, it was necessary to administer the interview prior to the birth of the subject's first child. The pioneering work in this area was conducted by Fonagy, Steele, and Steele (1991).

Here 96 London mothers were interviewed *before* childbirth, and strange situation assessments at 12 months were conducted by judges unaware of the mothers' AAI status. The overall two-way (secure-insecure) match between mothers' prenatal interviews and children's security of attachment was 75%, and the three-way match was 66%.

Several additional prebirth studies have now been conducted, with similarly impressive results. Using an Australian sample of 44 dyads that included the unresolved category, Radojevic (1994) was the first to replicate the Bay Area findings relating fathers' AAI status to "blind" assessments of their infants' strange situation behavior. The secure-insecure match between fathers' prebirth interviews and infants' response to the father at 15 months was 77%, and 60% of unresolved fathers had disorganized infants. Prebirth AAIs in the London study uncovered similar secure-insecure correspondence between fathers' interviews and infant strange situation response (71%; Steele, Steele, & Fonagy, 1996).

Benoit and Parker (1994) are to date the only investigators to complete a three-generation study, examining the match between AAIs conducted with mothers and their adult daughters. A striking three-way correspondence of 75%—directly comparable to the mother-infant matches reported in previous studies—was found between mothers (grandmothers) and their adult daughters, with secure grandmothers tending overwhelmingly to have secure adult daughters. In addition, the daughters' AAI status was assessed prior to their infants' birth, yielding an 81% three-way and 77% four-way AAI-strange situation correspondence. A simple parent-to-child transmission model was found to account for the results, and grandmothers' adult attachment categories were significantly related to those of their grandchildren.

Ward and Carlson (1995) were the first to examine the correspondence between AAI and strange situation response in a high-risk sample of unmarried inner-city adolescent mothers and infants. Seventy-four mothers were administered the AAI prior to the birth of each mother's first child, and their infants were seen in the strange situation at 15 months. Independent, "blind" codings replicated the three-way (78%) and four-way (68%) mother-infant associations reported for middle-class samples.

In 1995, van IJzendoorn provided a meta-analytic overview of the parent-infant matches in the 14 studies then available (18 samples, 854

dyads). This analysis was based on investigations conducted in six countries, and included two reports comparing the AAI to Waters's (secure-insecure) Attachment Q-Sorts of child behavior observed in the home (Eiden, Teti, & Corns, 1995; Posada, Waters, Crowell, & Lay, 1995). For the secure-insecure split, the combined correspondence across samples was 75%. The combined effect size (d) was 1.06 (equal to a Fisher's Z of 0.51), $r = .49$ (biserial $r = .59$), and maternal attachments tended to be related somewhat more strongly to children's attachment ($d = 1.14$, $r = .50$) than did paternal attachments ($d = 0.80$, $r = 0.37$). Cohen (1988) notes that an effect size of 0.50 should be considered moderate, while one of 0.80 should be considered strong, and van IJzendoorn calculated that it would take 1,087 studies with null results to diminish the combined one-tailed p level to insignificance (Rosenthal, 1991).

For the three organized categories, the correspondence across studies was 70% ($\kappa = .46$). The combined effect size for the match between the adult dismissing and the infant avoidant categories was 1.02, and for the match between the adult preoccupied and infant ambivalent categories it was 0.93.

Nine studies had been conducted utilizing a four-way analysis (548 dyads), and the overall four-category correspondence was 63% ($\kappa = .42$). Given that unresolved attachment status is most often assigned on the basis of only a few sentences, while disorganized infant attachment status is normally established via only a few seconds of behavior (Main & Solomon, 1990), it was striking indeed that the unresolved adult category was specifically predictive of the disorganized infant category (combined $d = 0.65$, $r = .31$). Amount of training was strongly associated with differences in effect sizes relating unresolved adult attachment status to infant disorganized attachment: More training was associated with much larger effects.

Finally, van IJzendoorn's (1995) meta-analysis showed that the parent-infant correspondence for the five prebirth samples (389 dyads) was equivalent to that seen in the remaining studies. This further emphasized the likelihood that individual differences in infants' contribution to interactions with the parents could not account for the relation between the interview and strange situation behavior.

Since 1995, studies of AAI-strange situation correspondence have continued. Sagi et al. (1997) uncovered "contextual constraints" on in-

tergenerational transmission in Israeli kibbutzim, depending upon whether infants slept in communal groups (40% mother–infant match) or had home-based sleeping arrangements (76% match). In studies involving 20 Italian, 28 German, and 60 Canadian dyads, notable mother–infant correspondences were reported by Ammaniti, Speranza, and Candelori (1996, 85% secure–insecure match), by Gloger-Tibbels and Gomille (1999, 82% match), and by Pederson, Gleason, Moran, and Bento (1998, 80% match), respectively.

In addition, two recent investigations have compared Main and Cassidy's (1988) attachment classification system for 6-year-old children to concurrent AAIs conducted with mothers. In a "blind" study of 32 middle-class 6-year-olds and their mothers, George and Solomon (1996) uncovered a four-way match of 82% ($\kappa = .74$, $p < .0001$) between mothers' AAI status and their 6-year-olds' attachment. Similarly, Ammaniti et al. (1996) reported a 95% secure–insecure match between mothers' AAIs and 6-year-olds' attachment. In the Pederson et al. (1998) study, a 60% three-way match ($\kappa = .30$, $p < .01$) was found between mothers' AAIs and infants' attachment as assessed via Pederson and Moran's (1996) home attachment classification system.

Three final points should be made in this discussion. First, the correspondence between the AAI and Main and Cassidy's (1988) classification system for 6-year-olds, Waters's (1995) home Attachment Q-Sort, and Pederson and Moran's (1996) home attachment classifications shows that parental attachment representations as they relate to infant attachment security are not the consequence of "method bias" (i.e., are not tied to one particular way of assessing the offspring's attachment). As an illustration, discourse/reasoning lapses during the discussion of potentially traumatic events can alternately be seen as instances of (linguistic) "disorganization and disorientation," which, as the reader is aware, has repeatedly been found to be associated with disorganized/disoriented strange situation behavior. At 6, however, children disorganized as infants no longer show disorganized behavior upon reunion, but are instead punitive or caregiving (termed "D-controlling"). At this age, therefore, the relations between the unresolved category and D-controlling behavior (87% correspondence; George & Solomon, 1996) cannot rely upon "mirroring." Thus, a parent's "state of mind" and a child's attachment remain systematically related, despite differing

methods of assessing the child's attachment and despite developmental transformations.

Second, van IJzendoorn's (1995) meta-analysis has shown that within the insecure AAI categories, the dismissing, preoccupied, and unresolved classifications are each specifically predictive of the corresponding infant attachment classifications. This means (van IJzendoorn, 1995, p. 396) that the predictive validity of the instrument is not restricted to the global secure–insecure attachment distinction, but meets one of the most important validity requirements in being able to distinguish among the three insecure categories as well.

Finally, a test's reliability establishes an upper limit on its validity, and van IJzendoorn (1995) suggested that with further standardization of training, the effect size reported in his meta-analysis might be found to have underestimated the "true" degree of correspondence between adult and infant classifications. Later, van IJzendoorn and Bakermans-Kranenburg (1997) estimated inter-judge agreement at 80%, while an informal survey of available publications undertaken by the present writer yields an average inter-judge agreement of 82% across studies for both the three-way and four-way analyses (mean $\kappa = .71$ for both as well). It should be noted, however, that these figures may underestimate the ability of investigators to obtain valid results. Some investigators have used two or more coders for all cases, and used consensual agreement (or submission to a third judge) on disagreed cases; others used fully trained judges for published data, but provide interrater reliability estimates using a judge who has not completed training in the instrument.

Psychometric Properties of the Adult Attachment Interview

van IJzendoorn and Bakermans-Kranenburg (1996) reported that in a combined (meta-analytic) sample of 584 nonclinical mothers, 24% were classified as dismissing, 58% as secure/autonomous, and 18% as preoccupied. With the unresolved category included, a four-way analysis of the available 487 nonclinical mothers showed the following distribution: 16% dismissing, 55% secure/autonomous, 9% preoccupied, and 19% unresolved. The combined distribution of nonclinical fathers was highly similar. Interestingly, a meta-analysis of five studies that included both wives and husbands (226 couples) showed a three-way correspondence comparable to a cor-

relation of $r = .28$, accounted for by the fact that secure men and women married each other at greater than chance levels. In the four-way analysis ($n = 152$), the secure-insecure association was not found; however, unresolved individuals appeared to have married more often than expected by chance.

AAI distributions in adolescent samples did not differ significantly from distributions in the nonclinical adult samples. However, combined samples with very low-socioeconomic-status backgrounds ($n = 995$) did differ significantly from nonclinical mother samples, with the unresolved and dismissing categories being overrepresented, and the secure/autonomous category correspondingly underrepresented. The AAI was found to be unrelated to social desirability (Bakermans-Kranenburg & van IJzendoorn, 1993; Crowell et al., 1996; Sagi et al., 1994), and showed only a modest association with social adjustment (Crowell et al., 1996). Although the AAI was only weakly related to content-based retrospective parenting style measures and appeared to be independent of general personality measures (van IJzendoorn, 1995), more recently persons classified as preoccupied have been found to report more symptoms on the Minnesota Multiphasic Personality Inventory than others, whereas dismissing individuals report fewer (Pianta, Egeland, & Adam, 1996).

The AAI has been subjected to a series of rigorous psychometric tests of its stability and discriminant validity (van IJzendoorn, 1995). Stability studies typically employ different interviewers across the time period in question, with coders unaware of one another's classifications. With interviews conducted 2 months apart ($n = 83$), Bakermans-Kranenburg and van IJzendoorn (1993) found 78% stability ($\kappa = .63$) across the three organized attachment categories (the unresolved category was less stable), while an Israeli study of 59 college students conducted 3 months apart yielded 90% test-retest stability ($\kappa = .79$; Sagi et al., 1994). The mean interjudge agreement for this latter study was 95%. Both studies reported that category placement could not be attributed to the influence of a particular interviewer.

Stability has also been tested across an 18-month period in New York (86% three-category stability, $\kappa = .73$; Crowell et al., 1996), and across a 4-year period in Rome (95% secure-insecure correspondence, 70% three-category correspondence, Ammaniti et al., 1996). In their study of Canadian mothers, Benoit and Parker

(1994) found 90% three-category stability between a prebirth interview and interviews conducted at 11 months of infant age ($n = 84$). The outcome of this last investigation is particularly important since the major life transition occasioned by the birth of a first child might have been expected to change a mother's "state of mind with respect to attachment."

Because of the weight given to "coherence" scores when AAI transcripts are being assigned to secure versus insecure attachment status, it has been critical to establish that in five out of six studies conducted to date, secure versus insecure adult attachment status has been found to be unrelated to intelligence, including assessments specific to verbal fluency (Crowell, Fraley, & Shaver, Chapter 20, this volume; van IJzendoorn, 1995). Moreover, because insistence on lack of memory for childhood is associated with the dismissing category, it has been necessary to assess general abilities involving memory. Thus, if persons assigned to the dismissing category suffer from overall difficulties with childhood memories, their insistence on lack of recall for early relationships and interactions might not pertain to state of mind specific to attachment history. This question was first examined by Bakermans-Kranenburg and van IJzendoorn (1993), who found the AAI categories to be independent of nonattachment-related memory. An Israeli study (Sagi et al., 1994) used an even broader range of memory tests. Here, the accuracy of memories for childhood events was ingeniously tested, and subjects were also examined for "immediate" memory skills in a test of (non-attachment-related) paired associates. No differences were found across the categories.

One of the most critical questions pertaining to the discriminant validity of the AAI stems from its reliance upon individual differences in discourse characteristics. If these characteristics were found to generalize to non-attachment-related topics, the inability of the parents of insecure infants to produce coherent and collaborative AAI narratives could not readily be attributed to an (insecure) state of mind arising specifically from a request for a review and evaluation of their attachment history. This question was addressed by Crowell, Waters, and their colleagues, using an "Employment Experience Interview," which followed the form of the AAI protocol, but focused upon technical aspects of the speaker's work history (Crowell et al., 1996). Although transcripts of the Employment Experience Interview could be reliably classified as se-

cure/autonomous, dismissing, or preoccupied, these classifications were orthogonal to the secure/autonomous, dismissing, and preoccupied classifications assigned to the same 53 mothers within the AAI. Thus it appears that the attachment-related content of the AAI protocol does in fact have a direct influence upon the linguistic form manifested in the interview transcript.

The AAI as Predictive of Caregiving

Ainsworth's original studies of infant-mother interaction uncovered a strong relation between a mother's "sensitivity and responsiveness to infant signals and communications" and infant security as indicated by strange situation behavior (Ainsworth et al., 1978; see also Belsky, Chapter 12, this volume). Therefore, almost as soon as the match between parental and infant attachment classification was uncovered, reports relating secure/autonomous adult attachment to sensitive, or otherwise positive, behavior toward an infant or preschooler began to emerge (e.g., Crowell & Feldman, 1988, 1991). van IJzendoorn (1995) provided a meta-analytic overview of 10 studies ($n = 389$) comparing secure vs. insecure parental attachment representations to observations of parents' sensitivity, warmth, structure, and supportiveness as seen in interactions with their infants or preschoolers. The combined effect size across these investigations was 0.72, equivalent to $r = .34$. Intriguingly, whereas the match between the AAI and the infant's strange situation behavior was somewhat lower (but still strong, $d = .80$) for fathers as compared to mothers, the predictability of caregiving responsiveness from the AAI was greater for fathers than for mothers.

Although only a small proportion of studies had applied Ainsworth's sensitivity scales to observations of parent-infant interaction, one aim of van IJzendoorn's analysis was of course to test the hypothesis that parental sensitivity acted as the mediator between the AAI and infant strange situation response. To act as a mediator sufficient to account for the strong ($r = .49$, biserial $r = .59$) relation between the AAI and strange situation behavior, however, parental sensitivity would have to be (1) highly related to parental state of mind, and (2) highly related to infant security of attachment. With this in mind, and utilizing a selection of the most adequate studies from Goldsmith and Alansky's (1987) estimate ($r = .32$) of the relation between maternal sensitivity and infant security of attachment as assessed in the

strange situation, van IJzendoorn demonstrated that there was a marked "transmission gap" in our understanding of the nature of the interactions accounting for the relation between the AAI and the strange situation. Indeed, van IJzendoorn's calculations showed that the largest part of the influence of adult mental representation on infant security of attachment was as yet unspecified (i.e., could not be accounted for by parental sensitivity and responsiveness as currently assessed).

A later investigation undertaken to improve upon anomalies in some of the studies included in van IJzendoorn's meta-analysis ultimately served to confirm the existence of van IJzendoorn's "transmission gap." In this study of 60 Canadian infant-mother dyads, not only was the AAI strongly related to infant strange situation response, but maternal sensitivity was found to be strongly related to infant security ($r = .60$; Pederson et al., 1998). However, the relation between a mother's attachment status and sensitivity to her infant was modest, and the direct path between parental autonomy and infant security accounted for approximately five times the variance accounted for by the mediated path (maternal sensitivity).

Both van IJzendoorn (1995) and Pederson et al. (1998) have noted that difficulties in assessing parental sensitivity may account in part for the transmission gap, since neither training institutes nor reliability checks are available to those utilizing this observational approach. van IJzendoorn has further suggested that genetic transmission, and emotional interactions more subtle than are (or can be) captured in the usual assessments of maternal sensitivity (such as the indices of "affect attunement" found to be related to AAI's in a pilot study by Haft & Slade, 1989), could also contribute to the existing association between parental and infant attachment. To these suggestions, Pederson and his colleagues have added the possible contribution of a parent's ability to make accurate attributions regarding the nature of an infant's mental processes (Fonagy, Steele, Steele, Moran, & Higgitt, 1991; Main, 1991), and the socialization and regulation of infant emotions (Cassidy, 1994). In this latter context, it is noteworthy, for example, that dismissing mothers have been found to be more likely than others to have a negative response to a videotape of a crying infant (Zeanah et al., 1993). Moreover, in a first report from a larger study focused on narrowing the "transmission gap" via the investigation of parental responsive-

ness to video-tapes of infants in varying emotional states, Goldberg, Blokland, Cayetano, and Benoit (1998) are finding that dismissing mothers seem least interested in and responsive to infant affect; preoccupied mothers inappropriately responsive; and secure-autonomous mothers the most likely to be empathetic, being the only mothers to mirror negative infant expressions with negative expressions of their own. Finally—in keeping with Bowlby's original (1969/1982) emphasis upon the close relations between the attachment and the fear ("escape") systems, and Main's recent emphasis upon the role of fear in individual differences in the organization (or disorganization) of attachment relationships (Hesse & Main, 1999; Main, 1995)—secure-autonomous mothers were also found superior in their ability to recognize fearful infant facial expressions, while dismissing mothers were least likely to recognize them and most likely to identify fear as "interest."

It is evident that van IJzendoorn's identification of the "transmission gap" will provide the basis for much future observational (and perhaps also experimental) research. Among other possibilities mentioned by van IJzendoorn and by Pederson et al., one in particular warrants special examination. This is the likelihood that the parent's early influence may sufficiently launch the infant on a path toward a particular state of attachment organization (or disorganization), so that, in a kind of feedforward model, the infant comes to participate in the formation of its own attachment, simultaneously shaping—and in some cases altering—the degree and type of parental responsiveness that can thereafter be observed. If so, then earlier observations of parental behavior may be found to be more strongly related to parental AAIs than later ones. Interestingly, observations of maternal sensitivity made earlier in the first year of life have been found to be more strongly related to 12-month infant strange situation response than observations made later (Grossmann, Grossmann, Spangler, Suess, & Unzer, 1985; Isabella, 1993; see also Sroufe, Egeland, & Kreutzer, 1990).

The upshot of this argument is that once enough time has elapsed, children's behavior may already have been sufficiently shaped by parental (un)responsiveness that observers have, for example, little opportunity to witness the parents' responsiveness to (no longer evident) expressions of distress (Pederson et al., 1998). In keeping with this hypothesis, Beckwith, Cohen, and Hamilton (in press) have reported that mater-

nal sensitivity at 1 month was a stronger predictor of security as assessed in AAIs administered at age 18 than was sensitivity assessed at 8 or 24 months, while maternal sensitivity at 12 years showed no relation to adolescent AAI status.

An investigation that may ultimately aid in throwing further light on this question is currently being undertaken by Dozier and her colleagues at Delaware (Stovall & Dozier, 1998), who have completed a single-subject analysis of newly evolving attachment relationships in 10 foster mother-infant dyads. Here, infants placed with secure-autonomous foster mothers before 12 months of age were independently found secure both in the strange situation and according to diary entry data recorded by the mother. However, children placed with secure-autonomous foster mothers after 12 months were insecure both in the strange situation and as recorded in the mother's diary.

Comparing Adult Attachment Classifications in Clinical and Nonclinical Populations

As discussed earlier, the central categories of the AAI were developed and refined with respect to a 1-year-old's (secure vs. insecure) response to the speaker in a stressful situation. No examination of interview responses within clinical samples had been undertaken, however, and it is therefore surprising that—without adjustment—this system would ultimately be shown to discriminate between clinical and nonclinical populations (van IJzendoorn & Bakermans-Kranenburg, 1996). Indeed, the effect size discriminating clinical from nonclinical populations ($d = 1.03$) was found to be almost identical to that discriminating the parents of secure infants from the parents of insecure infants ($d = 1.06$). Ultimately, in a four-way analysis, only 8% of members of clinical samples were judged secure.

Attachment Status in the Mothers of Clinically Distressed Children

In the first study of mothers of clinically distressed infants, Benoit, Zeanah, and Barton (1989) reported that only 1 of 23 mothers of 7- to 8-month-old infants hospitalized for failure to thrive was judged secure/autonomous, whereas distributions in their comparison group of mothers of infants hospitalized for chronic and acute physical illnesses did not diverge from those of

other samples. In another study, among 20 mothers of severely sleep-disordered infants, not one was identified as secure/autonomous (Benoit, Zeanah, Boucher, & Minde, 1992).

Using a three-way analysis, Crowell and Feldman (1988) found that 17 out of 20 mothers of children with behavior problems (85%) were insecure, while all 20 mothers of children suffering jointly from developmental delay and clinical problems (100%) were insecure. Later, mothers of children with conduct and disruptive/aggressive disorders were found to be almost exclusively insecure, although, importantly, only 6 out of 10 mothers of children suffering from attention-deficit/hyperactivity disorder uncomplicated by conduct and aggressive/disruptive disorders were insecure (Crowell & Feldman, 1991). Similar outcomes are emerging for adolescents; thus, for example, Rosenstein and Horowitz (1996) reported that among 27 mothers of psychiatrically hospitalized adolescents only 2 were secure.

Moreover, in four-way analyses, conduct disorder is being found to be related to unresolved maternal attachment. For example, DeKlyen (1996) found 19 out of 25 mothers of conduct-disordered children insecure; 11 of these were unresolved or cannot classify (for comparable results, see also Constantino, 1996; Greenberg, Speltz, DeKlyen, & Endriga, 1991; Speltz, Greenberg, & DeKlyen, 1990).

Attachment Status in Clinically Distressed Adolescents and Adults

Many studies of clinically distressed adolescents and adults have now been conducted or are in progress. Although most of these investigations focus on fairly large samples, some have examined carefully matched individuals who differ only in terms of diagnoses.

A study of the latter kind (24 closely comparable female subjects, 12 borderline and 12 dysthymic, none comorbid) was conducted at the Tavistock Clinic, using a coder who was unaware of either subjects' diagnoses or the aims of the investigation (Patrick, Hobson, Howard, Castle, & Maughan, 1994). Borderline patients were selected for having met at least seven out of the eight *Diagnostic and Statistical Manual of Mental Disorders*, third edition, revised (DSM-III-R) criteria. All of the twelve borderline patients—but only 4 dysthymic patients—were classified as preoccupied (Fisher's exact test, two-tailed, $p = .001$). Moreover, 10 of the 12 borderline patients were classified into one particular (very

rare) AAI subcategory, E3, meaning that descriptions of frightening events repeatedly and inappropriately interrupted responses to queries regarding other topics. The overall rates of experiences of trauma and loss as defined by Main and Goldwyn did not differ between groups, but all 9 of the borderline subjects reporting loss or trauma were classified as primarily unresolved (e.g., U/E3) as compared to only 2 of the 10 dysthymic patients reporting loss or trauma (Fisher's exact test, two-tailed, $p = .0007$).

Fonagy et al. (1996) undertook a large-scale study of 82 clinically distressed young adults at a national center for the inpatient treatment of severe personality disorders in London, comparing interviews to those of 85 well-matched controls. The transcripts were screened for references to hospital treatment, and were analyzed using both the continuous scoring systems and the four major classifications.

Only 9 of the 82 psychiatric patients, but 50 of the 85 control patients were judged secure/autonomous with the four-category system ($\chi^2 = 78.4, p < .001$). In addition, many of the AAI experience and state-of-mind scales, as well as Fonagy's "reflective-self" scale (Fonagy, Steele, Moran, & Higgitt, 1991; see below), sharply differentiated the psychiatric patients from the controls. The category most strongly differentiating the groups was unresolved (76% inpatients vs. 7% controls), and—as in an earlier study of anxiety-disordered subjects conducted by Manassis, Bradley, Goldberg, and Hood (1994; 14 of 18 or 78% unresolved)—anxiety-disordered subjects were found especially likely to be unresolved (38 of 44 or 86%). Among the subclassifications, fearful preoccupation with traumatic events (E3) was found to be unexpectedly common in the psychiatric group (28% vs. 1%). Replicating earlier outcomes (Patrick et al., 1994), 47% of the borderline patients were classified E3³.

Adam, Sheldon-Keller, and West (1996) examined attachment status and suicidality in 133 adolescents (mean age = 15½ years) from Canadian inpatient and outpatient treatment centers. Fifty-three of the 69 adolescents placed in the suicidal group had made suicide attempts, and 13 had severe suicidal ideation. Transcripts were coded by judges unaware of case status.

In this study, history of exposure to attachment-related trauma had similar prevalence in each group (86% suicidal, 78% comparison). However, among those adolescents who were exposed to trauma, the unresolved classification

had a significantly higher prevalence for the suicidal group (73% vs. 44%). Preoccupied attachment was also associated with suicidality, and strikingly, 77% of subjects who were both unresolved and preoccupied (U/E) were found in the suicidal group. It was concluded (1) that cognitive disorganization surrounding traumatic events as assessed within the AAI may mediate the relation between earlier traumatic experience and adolescent suicidal behavior found in previous studies; and (2) that preoccupied individuals may be especially vulnerable to disorganization.

In a highly informative and different kind of investigation (Allen, Hauser, & Borman-Spurrell, 1996), the interview was administered to 66 young adults (mean age = 26) who had been psychiatrically hospitalized 11 years previously, and to a matched (nonhospitalized, $n = 76$) control sample. Both groups came from upper-middle-class families, and individuals suffering from psychosis or organic impairment were excluded from the hospitalized sample. Interviews were "blinded" for any evidence of previous hospitalization.

Surprisingly, the proportion of secure/autonomous transcripts among individuals hospitalized 11 years previously (7.6%) was no higher than that found in studies examining individuals experiencing current distress. Moreover, the interview transcripts of 25.8% of the hospitalized group were judged cannot classify, as compared to 6.6% of the comparison group. Speakers who had been hospitalized were far less coherent than controls, were more likely to express contempt or derogation for attachment-related experiences and attachment figures, and received higher scores for unresolved responses to abuse experiences. The latter two scales were also found to be related to criminal behavior, and derogation was related to hard drug use. Notably, Rosenstein and Horowitz (1996)—who found only 1 of 60 psychiatrically hospitalized adolescents to be secure/autonomous—also found substance abuse to be related to the dismissing category. Among males, these authors found conduct disorders highly predictive of the dismissing attachment category (14/15 cases).

In other recent studies involving adolescents, Ivarsson, Broberg, and Gillberg (1998) found 11 of 15 participants seen in Swedish outpatient clinics for depressive disorders dismissing, and only one secure. In Rome, 36 patients suffering from eating disorders (mean age, 17 years) were administered the AAI. Few were secure, and interestingly, anorexia was associated with the dis-

missing category, while bulimic subjects tended to be preoccupied (Candelori & Ciocca, 1998).

Descriptive Case Studies

Recently, "blind" case studies have examined clinical distress in relation to the AAI. Focusing on a troubled adolescent mother placed in the rare AAI subcategory termed "derogating of attachment" (Ds2) on the basis of speech characteristics observed in the AAI, Zeanah, Finley-Belgrad, and Benoit (1997) found that (a) the subject's mother had threatened to kill her, and (b) had herself experienced similar threats from the subject's grandmother. Sharply in keeping with her speech characteristics, the young mother's treatment of her own children was observed to be initially cruel, teasing, and derogating.

As the reader will recall, speakers are assigned to the cannot classify category when contradictory discourse strategies appear within the AAI. With this in mind, it is of particular interest that a mother judged cannot classify by Hughes and MacGauley (1997) exhibited marked neglect and carelessness to a degree inviting of external injury, while making alternating sudden trips to the hospital occasioned by fear of germs. Another mother described as cannot classify by Minde and Hesse (1996) demanded (successfully) to have her child removed by Caesarean section 1 month early, then insisted on staying with the infant in intensive care for periods that far exceeded usual hospital practices. Like the other mother described above, she later alternated periods of overinvolvement with periods of neglect. In keeping with the hypothesis that discourse usage in the AAI should be predictive of caregiving, then, these two case studies of "unclassifiable" discourse were found to reflect "unclassifiable" behavior towards the offspring.

AAI Status and Psychopathology in a Nonclinical Sample

In the clinical studies discussed above, individuals diagnosed with varying disorders have been examined for their accompanying adult attachment classifications. Recently, Lee, Polan, and Ward (1998) completed an investigation of a *nonclinical* New York sample of 60 adult women, who were seen in the Adult Attachment Interview as well as in the diagnostic setting. Using the "organized" (secure-autonomous, dismissing, and preoccupied) attachment categories in

the analysis, a majority of women with insecure attachment classifications were diagnosed with psychopathology. Further, the authors tested how DSM III-R Axis I and Axis II psychopathology (none, Axis I or I and II combined, Axis II only) might be related to the three organized classifications. A significant association was found between psychopathology and AAI status, such that placement in the dismissing category was associated with Axis I (or Axis I and Axis II, comorbid) while placement in the preoccupied category was associated with Axis II placement. Finally, when the unresolved category was utilized, unresolved subjects whose alternative placement was secure-autonomous (unresolved/secure) were found significantly less likely to be diagnosed with psychopathology than subjects with unresolved/insecure classifications, although unresolved/secure-autonomous subjects did experience some difficulties with daily functioning (e.g., marital discord, physical symptoms).

Longitudinal Studies of Attachment Status

Despite the fact that the AAI focuses on an individual's presentation and evaluation of attachment-related experiences, until recently it has chiefly been known for its implied ability to predict caregiving behavior via the infant's strange situation response. This is, of course, not informative regarding the potential of the instrument either to identify the probable nature of the speaker's early attachment relationships, or to assist in systematically tracing pathways involving change.

Recently, however, five studies have compared infant attachment as assessed nonverbally in the strange situation to discourse regarding attachment-related experiences in AAIs conducted with the same individuals 15 to 21 years later. In all of these investigations, judges coding the interview have been unaware of infant attachment classification.

Waters, Merrick, Treboux, Crowell, and Albersheim (in press) conducted AAIs with 50 lower-to middle-class young adults (aged 20 to 22) seen in the Ainsworth strange situation at 12 months. In a first, three-way analysis ($n = 50$), 64% of subjects were placed in the adult attachment category corresponding to their original strange situation response ($kappa = .40$), while for 72% of subjects ($kappa = .44$), secure versus insecure infant strange situation behavior was predictive of coherent vs. incoherent interview

texts. Attachment status was, however, significantly less stable for young adults who had experienced loss of a parent, parental divorce, life-threatening illness in a parent or self, parental psychiatric disorder, or physical or sexual abuse prior to age 18. Among the 32 subjects who did not report such events, the three-way correspondence was 72% ($kappa = .46$), while the two-way correspondence was 78% ($kappa = .52$).

Hamilton (in press) examined the predictability of AAI responses in a sample of 30 adolescents (aged 17 to 19) who had been raised in unconventional lifestyles (e.g., communal living groups).⁴ In a three-way analysis, 63% of subjects were placed in adult attachment categories corresponding to their strange situation response to their mothers during infancy, while the two-way (secure vs. insecure) correspondence was 77% ($kappa = .49$). Negative life events were associated with maintenance of an insecure attachment pattern.

Two of the five studies using the Main and Goldwyn system did not find continuity between strange situation and AAI response. One investigation involved a low-risk sample of German 16-year-olds (Zimmermann, Grossmann, & Fremmer-Bombik, 1998; information regarding this study is limited, since these outcomes were discovered as this chapter was going to press). The second investigation included many subjects experiencing substantial intervening trauma. In this latter study, Weinfield, Sroufe, and Egeland (in press) conducted interviews with 57 adolescents (aged 18 to 19) drawn from an at-risk poverty sample. Although only 39% of participants had been judged insecure with their mothers in infancy, 68% were judged insecure in adolescence (60% dismissing). In addition, while 78% of adolescents insecure with their mothers in infancy were incoherent and noncollaborative (insecure) in the AAI, 65% who had been secure as infants were also incoherent and noncollaborative in adolescence. Hence, no association between strange situation behavior and AAI response was uncovered, although child maltreatment, maternal depression, and assessments of family functioning provided some evidence for lawful discontinuity. In keeping with Bowlby's earliest writings (Bowlby, 1969/1982, 1973, 1980; Robertson & Bowlby, 1952), then, the findings from the Minnesota study are incompatible with a "critical period" hypothesis respecting attachment.

The disorganized infant attachment category was not utilized in the above-described studies.

Forty-five subjects from the Bay Area longitudinal sample have, however, now been administered the AAI at age 19 (Main & Hesse, 1998), and about 90% of interviews have been analyzed. With the disorganized category included, strong predictability of secure versus insecure AAI response from infants' strange situation response to their mothers is being uncovered. A majority of subjects secure with their mothers in infancy have been found to be coherent and collaborative (secure/autonomous) in discussing their attachment-related experiences during adolescence. In contrast, only a small minority of subjects avoidant or resistant with their mothers during infancy have been judged secure/autonomous. Finally, among the 12 adolescents given a disorganized category placement in infancy, not one has been judged secure/autonomous.

A fifth longitudinal investigation of adolescents in a low-risk sample (Lewis, 1997) used Kobak's AAI *Q*-Sort (described below), and, as in the German study (Zimmermann et al., 1998), reported that *Q*-Sorted attachment status in adolescence could not be predicted from infant "strange situation" behavior. Ainsworth's two-separation procedure was not utilized, however, and instead, attachment was assessed on the basis of a single separation and reunion. Thus these results are difficult to interpret.

Three further studies bearing upon issues of long-term predictability of attachment status should be noted briefly here. As discussed earlier, an investigation of 81 Canadian (grand)mothers and their adult daughters (Benoit & Parker, 1994) found 75% three-way correspondence in attachment status ($\kappa = .51$). In addition, Rosenstein and Horowitz (1996) uncovered an 81% three-way correspondence ($\kappa = .62$) between 27 mothers and their psychiatrically hospitalized adolescents. It is yet to be determined, however, whether the impressive correspondence reported in these two studies reflect long-term stability in the offspring's attachment, continuing or concurrent interactions between mother and offspring, similarity of circumstances, or some combination of these factors.

In a study bearing more directly upon long-term predictability, Beckwith et al. (in press) saw 86 premature infants in naturalistic home observations (1, 8, and 24 months), followed up with ("blind") AAI codings (secure/autonomous, dismissing, or preoccupied) at 18 years of age. Simple event coding had been used to assess maternal sensitivity across 15-second intervals, so that at 1 month, for example, the "sensitivity" score

had summed maternal positive attentiveness, talk to the infant, holding, contingency to infant distress, and mutual gaze. The mothers of the 35 dismissing 18-years-olds (i.e., those who normalized or presented an idealized portrait of their parents, often while insisting on lack of memory for childhood) were found to have consistently received the lowest sensitivity scores.

New Directions

The AAI is currently being extended to new populations and areas of inquiry. Due to space considerations, only a few of these investigations can be summarized here.

Extension to Younger Samples

As noted earlier, Ward and Carlson (1995) reported "blind" matches between adolescent mothers' prebirth AAIs (mean age, 16 years) and infant strange situation response identical to those found for adult mothers and their children. Similarly, "blinded" clinical studies of adolescent populations have obtained expectable relations between diagnostic groups (e.g., Adam et al., 1996, above: mean age of subjects, 15 years).

Currently, the applicability of the AAI to even younger ages is being tested. Using a version of the interview that included age-appropriate adjustments (Ammaniti, Candelori, Dazzi, DeCoro, Muscetta, et al., 1990), 31 children were seen at 10 and again at 14 years of age (Ammaniti, van IJzendoorn, Speranza, & Tambelli, 1998). Two coders worked with each interview (mean interjudge agreement, 82%, $\kappa = .64$) and arrived at a consensual judgment, with coders unaware of the child's attachment status at separate ages. The four-way classification distributions did not differ from AAI distributions in comparable but older samples. Moreover, Fyffe and Waters's (1997) beta-weights for deriving the three organized classifications from discriminant functions based upon "state of mind" scale scores in adults and older adolescents living in the United States were applied to the state of mind scores assigned to this Rome sample, and 90% of the 10-year attachment classifications ($\kappa = .80$) and 81% of the 14-year classifications were correctly predicted ($\kappa = .68$). Strikingly, considerable stability of attachment was observed between 10 and 14 years of age for both the two-way (75%, $\kappa = .48$) and the four-way analyses (71%, $\kappa = .48$).

At the Tavistock Clinic, even younger sexually abused (vs. control) children and young adolescents are also being interviewed, with the preliminary results of "blind" coding indicating the expected differences (see Trowell, 1997). Finally, at Trinity College, Dublin, mothers and daughters seen in the strange situation are both participating in the AAI when the girls have reached 11 years (M. Gaffney, personal communication, 1998).

Attachment in Deaf Populations

The AAI is now being used with deaf (signing) populations, and several faculty members at Gallaudet University (Patrick Brice, Irene Leigh, and Kathryn Meadow-Orlans) are conducting projects that will assess, for example, (1) ways in which varying aspects of interview response of import to AAI discourse (e.g., "lapses in metacognitive monitoring") may be revealed in American Sign Language (ASL), and (2) the relation between signed AAI response and infant strange situation behavior. At the University of Western Ontario, Chovaz McKinnon (1998) has administered the AAI to 50 deaf adults skilled in ASL who, raised in an era in which parents were discouraged from learning sign language, had also been sent away to residential schools at age 5. Unexpectedly, despite the limitations imposed upon communication with parents and early long-term separations, a majority of these deaf adults were found to be secure/autonomous. Moreover, despite the absence of either hearing or signed communication with parents, continuous secure deaf adults satisfactorily supported positive descriptions of early parenting.

Adult Attachment Related to Violence

The AAI has been and continues to be used to investigate both violent offenders and victims of offense. Sullivan-Hanson (1990), for example, reported that virtually no subjects seen in shelters for battered women were secure/autonomous, and that many fit to the "fearfully preoccupied" (E3) subclassification. Stalker and Davies (1995) found that only 5 out of 40 sexually abused women were secure/autonomous. Twenty-four were unresolved, and over one-third (whether or not unresolved) met the criteria for cannot classify. Three of the five secure women had no DSM Axis II personality disorder, while the remaining subjects were likely to have multiple diagnoses.

Levinson and Fonagy (1998) found evidence for an association between insecure adult attachment and criminality, particularly with respect to crimes against persons as opposed to less violent crimes. Holtzworth-Munroe, Stuart, and Hutchinson (1997) conducted a "blind" study comparing nonviolent, maritally nondistressed men ($n = 15$); nonviolent, maritally distressed men ($n = 15$); and violent, maritally distressed men ($n = 30$). A secure state of mind was virtually absent among men exhibiting violence toward their wives (26 of 30 insecure), and many were judged cannot classify (11 of 30). Among personality-disordered violent criminal offenders, van IJzendoorn et al. (1997) reported that only 2 out of 40 subjects (5%) were classified secure/autonomous, with 53% unresolved and/or cannot classify. In keeping with their display of mixed discourse strategies, subjects in the cannot classify group had more personality disorders. Intriguingly, as in the Stalker and Davies (1995) study, the secure/autonomous subjects in the Dutch study exhibited the fewest disorders.

Political Extremism and Authoritarianism

In keeping with an interest in the origins of authoritarianism, Hopf (1993; Hopf & Hopf, 1997) hypothesized that German right-wing extremist youth (e.g., those expressing tolerance for violence, deflecting criticism away from Germany for Nazi crimes, and disparaging outgroups) would most likely be classified dismissing. As anticipated, among 30 right-wing subjects, 23 of 30 (77%) were judged dismissing, and none were secure/autonomous. In contrast, 10 of 19 (53%) non-right-wing subjects were secure.

Corroborating this outcome, in a "blind" study of a large sample of college students (Hesse & van IJzendoorn, 1998b; see also van IJzendoorn, 1997) found that the dismissing participants obtained significantly higher scores on an authoritarianism scale. Hopf had expected as well that dismissing states of mind would be linked to aggression towards peers, and indeed Kobak and Sceery (1988) have reported that dismissing college students are considered hostile (and anxious) by their peers.

Attachment, Couple Interactions, and Family Systems

An emerging area of special interest is the connection between attachment status and family

systems. Byng-Hall (1995), for example, has stressed the import of early loss upon marital distress, and Bakermans-Kranenburg and van IJzendoorn (1997) reported that women classified as unresolved were the most likely to have experienced previous breakups in romantic relationships. Allen and Hauser (1996) found that several aspects of AAI status at age 25 could be predicted from (two-parent) family interactions at age 14. Moreover, among families with 13-year-olds in the Minnesota poverty sample, "family balance" scores devised by June Fleeson Sroufe (Fleeson, 1988) predicted secure versus insecure AAI status at age 19 (Weinfield et al., in press). In addition, Crowell, Waters, and their colleagues have examined "secure base" behavior in couples engaged in a standard marital interaction task. Here, secure/autonomous individuals were found to be more able both to turn to their partners as a secure base and to act as a secure base for their partners (see Crowell et al., Chapter 20, this volume).

The Cowans and their colleagues (e.g., Cowan, Cohn, Cowan, & Pearson, 1996) have investigated both parenting and couple interactions as a function of joint as well as individual attachment status. For example, child-parent relationships were particularly compromised when both parents were insecure (Cohn, Cowan, Cowan, & Pearson, 1992). For insecure women married to secure men, however, this risk was minimized, with a secure father apparently acting as a "buffer" against less competent parenting. Similar results were obtained when couple interactions were examined (Cohn, Silver, Cowan, Cowan, et al., 1992).

In an AAI analysis of the first 40 romantic couples within a larger sample of romantic adolescent couples, G. Creasey (personal communication, 1999; see also Creasey, Boston, Tingley, Craft, & Kurtz, 1999) has uncovered "buffering" effects of having a secure partner previously obtained by the Cowans. Thus, in 20-minute conflict interactions, couples in which both or only one partner was secure exhibited similar mean numbers of negative behaviors (64 and 73). However, more than twice as many negative behaviors (147) were observed in couples in which both partners were insecure with respect to their own attachment histories. Using three-way analyses ($n = 80$), secure/autonomous individuals were markedly the most positive and the least negative in conflict situations, while individuals preoccupied with their own attachment histories were the most negative, and the least positive. In

addition, in keeping with the results of a study of infant-mother interaction conducted at Leiden (discussed below), unresolved subjects whose secondary or alternative attachment category was secure/autonomous (unresolved-secure) showed almost three times as many positive behaviors during conflict interactions as did unresolved-insecure subjects. Unresolved-secure subjects also showed fewer negative behaviors than unresolved-insecure subjects.

Unresolved Attachment Status as Predictive of Frightened/Frightening Behavior toward the Offspring

Until recently, most studies investigating caregiving behavior as related to adult attachment status have focused upon overall differences in "sensitive responsiveness" in secure versus insecure parents. However, more fine-grained approaches may be profitable, as seen in the case studies described above.

A new area of investigation involves the relationship among unresolved parental attachment status, frightened/frightening parental behavior, and disorganized infant attachment. Main and Hesse (Hesse & Main, 1999, in press; Main & Hesse, 1990) have hypothesized that the discourse/reasoning lapses occurring during discussions of traumatic events that mark unresolved attachment may often stem from alterations in normal consciousness occasioned by the intrusion of partially dissociated, frightening ideas or memories. Since the interview queries appear sufficient to produce these disturbances in consciousness, it is not unreasonable to presume that frightened, frightening, and occasionally dissociated behavior may occur during interactions with the infant. Behavior of this kind is expected to place the infant in a paradox, in which it can neither flee from nor approach the attachment figure, and hence has been expected on theoretical grounds to produce disorganized behavior in the strange situation (Main & Hesse, 1990). Frightened/frightening maternal behavior has currently been found predictive of disorganized strange situation attachment status in several different countries and settings. These include a study of Dutch mothers observed in the home (Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999); Boston mothers observed in the strange situation (Lyons-Ruth, Bronfman, & Parsons, in press); Bay Area mothers video-taped in free play with their infants (K. Abrams, personal communication, 1998); and villagers of the Do-

gan ethnic group observed in natural (both open and hut) settings in Mali, West Africa (True, Pasani, Ryan, & Oumar, 1998). Because frightened/frightening parental behavior appears, then, to be a substantial predictor of disorganized infant attachment status—which has in turn been repeatedly found predictive of vulnerability to psychopathology (see Lyons-Ruth & Jacobvitz, Chapter 23, this volume)—it is particularly important to determine its associations with lapses in reasoning or discourse (i.e., unresolved attachment) as observed in the parent.

Two large-scale, “blind” studies have investigated the association between unresolved attachment and frightened/frightening behavior, using a coding system developed by Main and Hesse (1992, 1998b). Schuengel et al. (1999) observed 85 mothers and their 10- to 11-month-olds in 2 two-hour home visits, administering the AAI 2 months later. Mothers found to be unresolved/insecure (e.g., U/Ds or U/E) did indeed exhibit frightened/frightening behavior in their infants’ presence. However, unresolved mothers whose alternative attachment category was secure/autonomous (U/F) did *not* exhibit frightened/frightening behavior. This suggested that an underlying secure/autonomous attachment organization might act as a buffer between unresolved aspects of a mother’s mental state and her behavior toward her infant. This intriguing suggestion finds partial support in recent studies by Lee et al. (1998) and by Creasey (1999) mentioned earlier.

In a sample of 113 mother–infant dyads, Jacobvitz, Hazen, and Riggs (1997; see also Lyons-Ruth & Jacobvitz, Chapter 23, this volume) compared *prebirth* AAI assessments to interactions with firstborn infants observed at 8 months of infant age. In this study, as opposed to the Leiden study, mothers were required to interact with their infants in potentially stressful contexts, such as feeding and changing. As predicted, mothers classified as unresolved prior to their infants’ birth were markedly more frightened, frightening, and dissociated than other mothers, and (in contrast to the Dutch study) these results held whether the unresolved mother’s underlying or “alternative” AAI classification was secure or insecure. However, in keeping with the “buffering” effects suggested by the Dutch study, unresolved/secure mothers tended to be somewhat less frightening than unresolved/insecure mothers.

Adult Attachment Status and Responsiveness to Therapy

Although the AAI has repeatedly been found to discriminate between clinical and nonclinical populations, it has only recently been used to assess the outcomes of therapeutic interventions (see Cortina, *in press*; Main, 1993, 1995, 1996; and Slade, Chapter 25, this volume, for discussions of both the practical and philosophical implications of this use of the AAI). Here too, case studies are proving instructive. For example, a coding system focusing upon “dismissing” and “preoccupied” violations of Grice’s maxims developed by Dazzi, DeCoro, Ortu, and Speranza (*in press*) was applied to an adolescent patient’s AAI transcript, and later to therapeutic sessions (the coder was unaware of session order). Coherence violations were found to decrease as the sessions progressed (Muscetta, Dazzi, De Coro, Ortu, & Speranza, *in press*; see also Diamond et al., *in press*, for a description of insecure-to-secure AAI category changes in two borderline patients).

Fonagy and his colleagues were among the first to study responsiveness to therapy. In a preliminary report from a larger project (Fonagy et al., 1995), change in interview status was studied in 35 nonpsychotic inpatients following 1 year of intensive psychodynamic psychotherapy. All 35 patients were classified as insecure upon intake, but 14 (40%) were judged secure upon discharge.

In addition, Fonagy examined changes in overall functioning (on the DSM’s Global Assessment of Functioning Scale) between admission and discharge as related to AAI classification, as well as a set of other potential predictors (below). Intriguingly (and as discussed at some length within the report), across the 82 subjects, the proportion of individuals who improved was higher in the dismissing group (93%) than in the preoccupied (41%) and secure/autonomous (3 of 9 subjects or 33%) groups, with effect sizes of 1.84, 1.09, and 0.51 respectively. Not one of the other potential predictors, including the Symptom Checklist–90, the Beck Depression Inventory, the Eysenck Personality Questionnaire, the Spielberger State–Trait Anxiety Inventory, or DSM Axis I and Axis II diagnoses, was predictive of responsiveness to therapy.

Routh, Hill, Steele, Elliott, and Dewey (1995) reported on inferred responsiveness to a “parent

management training" course for 37 parents of children suffering from conduct disorder. As in the studies of the parents of conduct disordered children mentioned earlier, a marked proportion of parents (43%) fell into the unresolved category. As compared to the children of other mothers, the children of the 16 unresolved mothers showed strikingly little change across the course of treatment.

Korfmacher, Adam, Ogawa, and Egeland (1997) described responsiveness to a year of home visits and group therapy (conducted across alternate weeks by the same facilitator) among 55 first-time mothers living in poverty. Facilitators kept case notes and responded to questionnaires over the course of treatment, and the AAI was administered only following the intervention. The unresolved mothers displayed the greatest difficulties, as evidenced in low levels of participation and commitment, and negative interactions with facilitators and in groups; additionally, mothers unresolved for past trauma were also notable for having a "crisis orientation" response to intervention. Dismissing mothers, in contrast, were described as having an "emotionally shallow" involvement with the program, emphasizing simple companionship and engaging in supportive therapy less than other mothers. None of these mothers accepted crisis work—a finding consonant with the dismissing tendency to emphasize strength and normality. The secure/autonomous mothers showed high levels of emotional commitment to the interventions and were distinguished for participation in problem-solving treatment (in which a mother accepts practical advice from the facilitator) and supportive therapy (in which a mother shares her deeper feelings with the facilitator and the group). (For other evidence of differential responsiveness to interventions, see Bakermans-Kranenburg, Juffer, and van IJzendoorn, 1998, as well as Tyrell, Dozier, Teague, & Falot, 1998).

ADDITIONAL APPROACHES TO SCORING AND CLASSIFYING THE ADULT ATTACHMENT INTERVIEW

As noted earlier, over the 17 years since its inception, Main and Goldwyn have substantially refined the AAI classification and scoring system. In addition, three groups of investigators

thoroughly familiar with the system have developed alternative approaches to the analysis of AAI transcripts.

The earliest of these—and still the only one serving to predict infant strange situation behavior in "blind" tests—was developed by Fremmer-Bombik in Germany (see Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1988). This system followed Main and Goldwyn's in attempting to determine whether or not the speaker was "valuing (or devaluing) of attachment." Each sentence in the interview was coded into approximately 20 available categories, and an algorithm was developed that assigned varying weights to categories, ultimately deriving four parameters (e.g., parents' supportive acts, formal linguistic characteristics regarding Main's coherency analyses, and number of reflections regarding the parents' behavior) that permitted each transcript to be classified as either secure or insecure. When two German longitudinal samples were combined, the two-way concordance of AAI and infant attachment for 82 mother-infant pairs was 78% ($\kappa = .56, p < .001$). For the 67 father-infant pairs the two-way concordance was 64% ($\kappa = .29, p < .05$; Zimmermann et al., 1998).

Taking a different point of entry, Kobak (1993) developed a 100-item *Q*-Sort for the analysis of the interview, with most items derived from the Main and Goldwyn system identifying the three organized attachment categories (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993, p. 235). Like Fyffe and Waters's (1997) discriminant analysis of the continuous scores in the Main and Goldwyn system, this method yields two dimensions (secure vs. anxious and dismissing vs. preoccupied). A criterion or "ideal" prototype sort is used to identify the three organized adult categories, and two persons independently read and sort each transcript. Kobak (personal communication, October 1998) recommends that at least one sorter should be trained in the Main and Goldwyn system. A third (and occasionally a fourth) rater is added when criterion levels of agreement are not met.

A first, blind application of the system to adolescent interview transcripts indicated an overlap of 79% (Kobak et al., 1993). Further applications of the *Q*-Sort system to transcripts independently coded using the Main and Goldwyn system show overlap ranging from 61% (Borman-Spurrell,

Allen, Hauser, Carter, & Cole-Detke, 1998; 71% agreement omitting unresolved and cannot classify subjects) to 74% (Allen, Moore, Kuperminc, & Bell, in press).

The *Q*-Sort system has yielded many impressive results, including studies of adolescent-parent interactions (e.g., Kobak et al., 1993), clinical process (e.g., Dozier, Cue, & Barnett, 1994), and psychiatrically distressed populations (Borman-Spurrell et al., 1998; Cole-Detke & Kobak, 1996). In addition, it was used in a groundbreaking investigation by Dozier and Kobak (1992), which first connected adult attachment to psychophysiology. Here it was reported that, as predicted, subjects using a dismissing strategy showed a rise in skin conductance when responding to queries regarding rejection and separation. (In this context, it should be noted as well that [the Main and Goldwyn system, Adam, 1998] found security associated with healthier physiological stress system functioning—for example, greater security predicted a stronger basal cortisol cycle with higher morning values and a steeper downward drop across the day.)

The *Q*-Sort system contrasts with the Main and Goldwyn system in that the unresolved and cannot classify categories are not identified; moreover, as in Fremmer-Bombik's system, the individual's parenting experiences, as well as current state of mind, enter partially into the final dimensional score. This means that "earned secure" status may be somewhat less likely to be identified with prototype scores, and can only be assessed by using item-level analyses. The *Q*-Sort may therefore be especially useful for the study of adolescents, but less applicable to older and clinical samples, where a higher proportion of unresolved, cannot classify, and "earned secure" subjects may be expected. The *Q*-Sort has not been tested against an infant's strange situation response to the speaker.

The most recent addition to AAI analysis has been a scale for "reflective self function" developed by Fonagy and his colleagues (Fonagy, Steele, Steele, Moran, & Higgitt, 1991; see also Fonagy, Steele, Steele, Higgitt, et al., 1994). This scale takes its origins in psychology's emerging interest in theory of mind, and attempts to score AAI transcripts for the speaker's recognition of the existence and nature of mental processes taking place in both the self and others (especially, of course, the parents). The scale bears some resemblance to the Fremmer-Bombik's original system of interview analysis, which emphasized reflections upon and explanations of the parent's be-

havior or influence. It is also based in part on Main's scale for meta-cognitive monitoring of errors in the speaker's own present or past thinking (Main, 1991, see Table 3), but ultimately places greatest emphasis on the recognition of thoughts, intentions, wishes, and a general awareness of mental states in others.

Like coherence of transcript (e.g., Allen et al., 1996; Fonagy et al., 1996), reflective self has to date served well to discriminate clinical from nonclinical populations, with individuals suffering from (1) borderline disorders (Fonagy et al., 1996) and (2) depressive disorders (Ivarsson et al., 1998), as well as those in criminal populations (Levinson & Fonagy, 1998) being markedly low on reflective self function. Fonagy et al.'s interpretation of the failure of reflective self function to appear in individuals with borderline diagnoses rests on inhibition in the development of recognition of intentionality in others due to their early experiences of extreme abuse (Fonagy et al., 1996). Similarly, criminal acts against others may be more readily undertaken by individuals failing to recognize the existence of mind in those who are being harmed (Levinson & Fonagy, 1998).

A first study of reflective-self function scored by individuals who had already undertaken both the AAI and strange situation scoring for the same sample showed impressive relations to both parental and infant security (Fonagy et al., 1991). "Blind" studies relating reflective self to either adult or infant attachment status have yet to emerge, however, so that, like the relation between security of attachment and Main's metacognitive monitoring scale, the relation between security of attachment and Fonagy's reflective self-function remains to be estimated. Main and Fonagy (1998) are presently developing a brief "theory-of-mind" interview to follow the final queries of the AAI. This interview should increase the opportunity of uncovering existing relations among attachment, metacognitive monitoring, and reflective self. Like other new approaches to the analysis of the AAI described here, reflective self function has still to be subjected to psychometric tests.

COMMON CONFUSIONS AND QUERIES REGARDING THE ADULT ATTACHMENT INTERVIEW

Over time, it has become apparent that there are a number of questions and confusions regarding

the AAI which are manifested with sufficient regularity as to warrant closer consideration. The most common confusions center primarily upon (1) what the AAI actually assesses, and (2) the role that temperament may play in the production of AAI response. There are additionally a wide variety of recurring questions ranging from the practicalities of assessment of the AAI directly from videotape to the influence of emotion upon the discourse process.

Secure versus Insecure Attachment Status: What Is being Assessed?

One of the most common misconceptions regarding the AAI is that it assesses whether or not adults are "securely attached" to a second person (e.g., Eagle, 1997). Although close adult relationships undoubtedly involve attachment (Hazan & Shaver, 1994), the (secure vs. insecure) organization of one person's attachment to another specific person is not what the AAI assesses. The AAI appears instead to provide a means of assessing an individual's overall "state of mind with respect to attachment," together with specific states of mind that arise during the discussion of particular topics (as seen in the continuous scales).

The above confusion has perhaps arisen out of the widespread recognition that assessment of attachment in infants and children always involves the quality of their attachment to a particular caregiver (Ainsworth et al., 1978; Main & Cassidy, 1988). In these cases, we recognize that the infant or child is not secure or insecure in itself, but rather is securely or insecurely attached to one parent, and may be securely or insecurely attached to the other. This way of thinking, which rightly underscores the inability of an infant or young child to be "secure-autonomous," may have inadvertently become generalized to the AAI.

Adults assessed via the AAI are not considered securely versus insecurely attached, but rather as being in a secure versus insecure *state of mind with respect to attachment*, in part because the interview does not focus upon another single person, but rather asks for descriptions and evaluations of relations to several significant individuals. Thus a first problem with referring to secure versus insecure attachment in an adult as derived from the AAI is this: Secure versus insecure with respect to whom? A related problem is that ordinarily a singular classification is derived from the interview, despite the fact that the

protocol covers many early and current relationships, which may vary in terms of security.

Note further that a coherent (secure-autonomous) speaker may in fact be discussing adverse early relationships to both parents, neither of whom could currently serve as sources of security. Moreover, whether or not in principle the parents would be able to provide security, in many cases—especially with older adults—the parents are no longer alive.

Why Is the Adult Attachment Interview Analyzed Exclusively from Verbatim Speech Transcripts?

A frequently raised question is why AAI analysis is restricted to verbatim speech transcripts, and does not take advantage of as many modalities of communication as are potentially available during the interview process. For example, if cues to emotional expressions, physical movement, eye contact, et alia were added to the interview transcription, or were derived directly from visual material, might this additional information both speed classification and increase its accuracy? Or, why not use the classification system as it is and simply analyze the AAI directly from videotape?

The first question bears on the intrinsic meaning of the methodology, and the second involves issues of practicality and practicability. Since the AAI has been primarily utilized as a predictive measure, a natural inclination is to seek ways of furthering its predictive strength. As an example, let us assume that avoidance of eye contact with the interviewer is associated with dismissing attachment status. Let us further assume that frequency counts of eye contact increase predictability of caregiving, clinical status, or the nature of the speaker's early attachment to the parent from (transcript-identified) dismissing attachment status. From the standpoint of prediction, this would of course be a valuable advance. However, the classification and scoring system is not just about prediction; it is specifically about how much and what can be predicted from the analysis of *discourse* regarding attachment-related experiences. Therefore, if we are to use the instrument to achieve a better understanding of the relations between language and attachment, additions to or modifications in the present system intended to increase its predictability logically should be confined to uncovering new parameters of language. Both the unresolved category and the recently emerging cannot classify cate-

gory—each of which has increased our power to predict infant attachment status and/or clinical status—are examples of the productivity of this approach.

We should also consider the fact that there is an upper limit to predictability, which, utilizing the (linguistically based) system as it stands, is already rapidly being approached. If nonverbal cues were to be added to the linguistic system currently utilized, the rate of increase in predictability would likely be small; moreover (see below) there would be considerable danger of actually reducing accuracy of prediction. In view of all of these factors, it seems clear that any nonlinguistic correlates of the AAI can and should be investigated separately from the existing system.

We can now consider the practical issues involved in a visual versus a transcribed analysis of the interview utilizing the traditional methodology. Although this writer's attempts at analyses of the AAI from videotapes have been limited, the process appears to be far more cumbersome than that involving printed text. First, it immediately becomes necessary, ironically, to take written notes on what the subject is saying in order to make comparisons with various aspects of future portions of the discussion. Second, it is much more difficult to cross-check different sections of the interview. For example, if it is stated that a cousin died when the subject was 5 years old, somewhere around the beginning of the tape, and then stated again 45 minutes later that the cousin died when the subject was 10, either the judge would have to have noted the age at which the death was said to have occurred at the outset of the tape, or the tape would have to be rewound to the beginning in an attempt to find the initial relevant sentence (or this "spoken" index of unresolved attachment might well be missed altogether). As another example, idealization scores are derived from careful study of the subject's descriptions of parents—not only as given at the beginning of the procedure, but elsewhere during the interview as well. These generalized descriptions, taken from varying points in the text, are compared to discussions of "actual events." In working with a printed text, cross-checking of this kind is fast and simple. If a videotape is used, in contrast, the judge is not only again confronted with the necessity of taking notes, but also is subjected to the cumbersome and time-consuming task of repeatedly rewinding and forwarding the video, at some considerable risk of error.

Another problem with classificatory (and

scoring) analysis taken from videotapes is that, in the absence of a separate system for identifying adult attachment status solely from visual cues, much potential "noise" is introduced into the existing process. The judge has a visual impression of the subject—whether the subject is nervous or well dressed, for example, and how much eye contact the subject makes with the interviewer. Moreover, in some cases judges will have "gut" positive or negative reactions to individuals' visual and behavioral characteristics, which may have no systematic relation to the form of their discourse or attachment status. It should be underscored that this "noise" may in many cases potentially be turned into lawful correlates of the AAI (see above), but as they bear upon the text analysis itself visual and behavioral cues are likely to interfere with the judges' objectivity and hence become a detriment to the classification and scoring process.

Adult Attachment and Self-Report Inventories

Self-report measures regarding adult attachment have been developed by a variety of researchers with differing aims. Some—for example, Main, Hesse, and van IJzendoorn, as well as Lichtenstein and Cassidy (see Crowell et al., Chapter 20, this volume) have attempted to design self-report instruments that would predict adult attachment status as assessed by the AAI. The primary aim of these endeavors has been to make the assessment of "state of mind with respect to attachment" more readily accessible to other investigators.

As regards the long-term (and still ongoing) project in which the present writer participated, a first study of a college student sample ($n = 50$) utilized self-identified subject-to-parent attachment classifications devised by the authors and presented in brief paragraphs. No relation was found between AAI status and a subject's self-identified attachment classification (secure/autonomous, dismissing, preoccupied). In point of fact, not only were insecure subjects likely to term themselves secure, but secure subjects were likely to consider themselves insecure. Later, a set of Likert scales containing both "direct" and "indirect" items were developed. These scales were stable and psychometrically sound, but to date have reached satisfactory levels of association with AAI categories in only one sample.

Similarly, no relation to infants' security of attachment to their mothers appeared in Hamilton's

(1995) investigation of 200 adolescents' self-reported feelings of security with their mothers as assessed by Armsden and Greenberg's Inventory of Peer and Parent Attachment (IPPA; see Crowell et al., Chapter 20, this volume). In contrast, strange situation behavior to the mother *did* predict responses to the AAI (Hamilton, in press, $n = 30$). Self-reported IPPA security with mothers during adolescence additionally failed to predict the adolescents' AAI (Hamilton, 1995). Crowell, Treboux, and Waters (in press) have also recently found self-reported quality of attachment with parents to be unrelated ($r = .11$) to the AAI.

Other investigators have developed self-report measures of romantic "attachment styles." These focus upon romantic or partner relationships, using either self-classifications as, for example, secure, dismissing or preoccupied, or else brief multi-item inventories (see Crowell et al., Chapter 20, this volume). These measures are producing intriguing and coherent results in many areas, including observed couple interactions (e.g., Simpson, Rholes, & Nelligan, 1992; Simpson, Rholes, & Phillips, 1996), psychophysiology (e.g., Fraley, & Shaver, 1997), cognitive organization and biases (e.g., Mikulincer & Orbach, 1995), and projective tests related to affect regulation (e.g., Mikulincer, Florian, & Tolmacz, 1990). In addition, using an interview concerning couple relationships modeled after the AAI, Crowell and her colleagues found a 69% correspondence between secure versus insecure status on this interview and secure versus insecure status assessed in a self-report inventory ($n = 36$, kappa = .38; see Crowell et al., Chapter 20, this volume).

Considered together, these findings suggest that, as opposed to state of mind with respect to early attachment relations and experiences—which has yet to be satisfactorily identified through self-report—individuals may have more "conscious" access to their current approach to relating to romantic partners (M. Main, personal communication, 1998).

Crowell (Crowell et al., Chapter 20, this volume, Table 20.1) has reviewed three studies indicating absence of relationship between self-reports of romantic attachment styles and attachment organization as assessed by the AAI ($r = -.12$, $r = .04$, and $r = .21$). In addition to the three studies reviewed by Crowell et al., absence of relation between romantic self-report inventories and AAI status (as coded by the present writer, $n = 60$), was also reported by Holtzworth-Munroe

et al. (1997). Here, Griffin and Bartholmew's Relationship Styles Questionnaire (RSQ, 1994; see also Bartholmew & Horowitz, 1991), which yields categorical placement (secure, dismissing, preoccupied, or fearful) based on the predominant score on continuous scales, was compared directly to AAI classification. Only 45% of men classified as secure/autonomous on the AAI were similarly classified as secure on the RSQ, and only 24% of men classified as secure on the RSQ were classified as secure/autonomous on the AAI. In addition, rather than a participant's being classified on the basis of his highest subscale score, his scores on all four RSQ scales were considered. However, the multivariate analysis of variance comparing RSQ subscale scores of men given different AAI classifications was non-significant, indicating that men given different classifications on the AAI did not differ on their overall pattern of RSQ scores.

Thus it is not surprising that, to the knowledge of this writer, romantic or partner self-report inventories have not as yet been found to be related either to the quality of an infant's attachment to the subject, or to the subject's strange situation response in infancy. Indeed, such results would be surprising, given the absence of relation between romantic or partner attachment self-report inventories and the AAI.

The Adult Attachment Interview, Memory, and Experience

We know from introspection as well as from direct observations and experiments (e.g., Bartlett, 1932; Loftus, 1994) that the ways in which events and experiences are recalled are highly subject to distortions and inaccuracies. This fact raises a variety of important questions and touches on the issue of whether real events are significantly causal in the organization of our subjective states. The AAI circumvents this issue, however, because no claim is made that the contents of any given interview represent an accurate reconstruction of experience—or, more specifically, that coherence of interview response and accuracy in recounting of early experience are related. How construction of narrative and actual experience may be related is, of course, an important question, but this topic can only be investigated via interviews that have been preceded by extensive observations of subjects across the period covered by the AAI protocol (approximately 4 to 14 years of age).

As noted earlier, in studies using low-risk lon-

itudinal samples, secure versus insecure attachment status in infancy has predicted secure versus insecure AAI responses in the same individual. Unfortunately, these studies cannot address the issue of accuracy of recall, for the reasons mentioned directly above. Moreover, and somewhat ironically, the outcomes of these studies may in fact lead to some renewed confusion regarding the nature of assessment involving the AAI. Thus, because an individual's likelihood of having had favorable versus unfavorable experiences with the mother during the first year of life has now been found to be associated with security versus insecurity in late adolescence, the AAI may incorrectly be assumed to be assessing the subject's memories for "real" events. Again, what is actually being assessed is the form in which an individual's life history is presented and discussed. Thus, for example, whether or not a secure/autonomous individual's memories are accurate, their narrative is identified by its coherence.

Conversely, this point can be illustrated by considering the association between an insecure-avoidant strange situation response to the mother in infancy and a dismissing state of mind with respect to attachment reported in three low-risk samples (Hamilton, in press; Main & Hesse, 1998a; Waters et al., in press). It will be recalled that an individual classified as dismissing typically presents a favorable description of attachment-related experiences, which is insufficiently supported. If the taxonomic methodology of Main and Goldwyn's system of discourse analysis relied upon a speaker's general descriptions of his or her experiences, those speakers who had been classified as avoidant as infants would almost always be classified as secure/autonomous in the AAI. Were this the case, the existing relations between AAI and strange situation response would never have been found. It is, again, precisely because the AAI emphasizes the coherence (form) versus the content of the individual's presentation that these matches to infancy are being uncovered.

What Role Might Emotion Play in Responses to the Adult Attachment Interview?

Although the analysis of the AAI rests upon verbatim speech transcripts rather than, for example, facial expression, vocal tone, or psychophysiological indices of emotion (see above), it is nonetheless assumed that emotion plays a central

role in shaping discourse respecting attachment. To begin with, a close reading of the organized category descriptors reveals much direct reference to emotional states as they are made manifest through the speaker's language. For example, the secure/autonomous category is described as being associated with forgiveness, compassion, humor, and references to missing and needing other persons. The dismissing category is associated with a notable absence of expressions of emotional vulnerability, and the marker of one dismissing subcategory is contempt. Finally, two of the three preoccupied subcategories are associated with expressions of anger and of fear, respectively.

Individuals classified as dismissing and preoccupied are identified, at least in part, then, via linguistic indications of negative emotional states arising during discussions involving attachment. Thus, it is ordinarily inferred that (whether attachment experiences are described positively or negatively) these speakers have most often had attachment-related difficulties. As discussed above, however, secure/autonomous individuals can also report unfavorable (as well as favorable) early attachment histories.

A central factor leading to these varying outcomes no doubt involves differences in both the quality of and the capacity to regulate and integrate emotion. Thus, for speakers having had apparently favorable experiences, emotional responses accompanying the interview process are unlikely to be unpleasant, making the discourse task a relatively straightforward one. For secure/autonomous individuals discussing adverse early experiences, however, the production of a coherent narrative may involve the capacity to "contain" reactions to uncomfortable or stressful feelings—a proposition that could be tested through simultaneous recording of psychophysiological reactions and/or emotional expression. Individuals falling into the dismissing and preoccupied attachment categories, in contrast, seem unable to respond fluidly to the interview process, perhaps because of potential discomfort stimulated by attachment-related topics, with some (dismissing) appearing to attempt to "avoid" the topic, and others (preoccupied) becoming overwhelmed.

With respect to unresolved attachment status, relations to early attachment on the part of the speaker are as yet unknown. However, the role of emotion has been clearly specified at the theoretical level, as it has been hypothesized that in the majority of cases fear underlies those processes

leading to discourse/reasoning lapses during the discussion of potentially traumatic experiences (Hesse & Main, 1999; in press; Main & Hesse, 1990).

Can Temperament Account for the Phenomena Observed in the Strange Situation and the Adult Attachment Interview?

Because there is room for some misunderstanding regarding the role that temperament may play in phenomena surrounding both the AAI and its relation to the strange situation (Fox, 1995), a discussion of these topics is warranted.

Temperament, Strange Situation Behavior, and the AAI

Within the field of attachment as a whole, there is to date little evidence for stable hereditary factors in shaping strange situation classifications in infancy. First, if hereditary and stable characteristics are what are reflected in strange situation behavior, then the secure, avoidant, or resistant infant should behave similarly with each parent. Strange situation responses are, however, largely independent, with many infants judged secure with one parent and insecure with the other (van IJzendoorn & DeWolff, 1997; see also an earlier meta-analysis conducted by Fox, Kimmerly, & Schafer, 1991). Second, infants who are insecure with their mothers at 12 months are significantly likely to become secure by 18 months if there are favorable changes in the mothers' life circumstances (see Sroufe, 1985). Third, if—rather than supposing that security, avoidance, and resistance were specific and stable infant characteristics—it were more generally presumed that mothers are responding (i.e., sensitively versus insensitively) to “easy” versus “difficult” infant temperament, then handicapped, sick, and otherwise “difficult” infants should not be found equally as likely as infants in low-risk samples to be judged secure, as in fact they have been (see van IJzendoorn, Goldberg, Kranenburg, & Frenkel, 1992).

Finally, if infant temperament is shaping infant–parent interaction in ways pertinent to offspring attachment status, then it should be more difficult to predict strange situation behavior from the AAI before than after birth. This is because in an AAI conducted prior to the birth of the first child, the parent's state of mind cannot be influenced by the individual behavioral char-

acteristics of the infant. As noted earlier, however, van IJzendoorn's (1995) meta-analysis showed that an infants' strange situation response to the mother and to the father are predicted equally well whether the AAI is administered prior to or succeeding birth.

It is indeed the case, however, that to this point dyads involved in AAI–strange situation studies have been biologically related. Main (1996) has therefore suggested that a new set of studies should be conducted in which the interview is administered to parents prior to adoption, and compared, as in studies of biological dyads, to infants' strange situation behavior at 12 months of age. If the usual concordance failed to appear across a set of several such studies, compelling evidence for genetic input would be established. A first investigation of this kind is being undertaken (van Londen, Juffer, & van IJzendoorn, 1998).

What Relative Roles Might Heritable and Environmental Factors Play in Adult Attachment Status?

The discussion above addresses attachment classifications observed in infancy as related to the AAI. However, we may also ask whether or not an adult's state of mind with respect to attachment is the product of heritable factors. A preliminary investigation using a questionnaire designed to assess temperamental dimensions of emotionality, activity, and sociability (Buss & Plomin, 1984) in a Dutch sample of 83 mothers administered the AAI yielded no significant relations (DeHass, Bakermans-Kranenburg, & van IJzendoorn, 1994). Main (1996), however, takes the position that while genetic input appears to play at most a minor role in security of attachment to the parents during the first year of life, genetically influenced factors may have an as yet unspecified influence upon state of mind with respect to attachment in adulthood, particularly with regard to “earned security.” Thus, for example, it has been suggested that variations in genetically biased levels of metacognitive skills may play a significant role in making some, but not other, individuals more resilient in the face of a difficult childhood (Main, 1991, 1996).

It is indeed an intriguing question how certain individuals whose early experiences appear to have been highly difficult produce coherent and collaborative AAI narratives, and have secure infants, without undertaking psychotherapy or having had any other obvious form of potentially helpful intervention. Positive early experiences

with friends, an influential teacher, or (later) a relationship with a supportive partner could of course contribute to these outcomes.

In addition, we must leave open the possibility that because the AAI does not necessarily provide valid information about an individual's actual experiences, we do not know whether those who appear to be "earned secure" have in fact had substantially positive early experiences that are now, ironically, coherently misrepresented. Furthermore, it is conceivable that some individuals considered "earned secure" on the basis of their coherent recounting of a harsh childhood may have been secure with at least one parent for the first year or two of life—a fact that is, of course, unlikely to be readily consciously accessed. In this instance, favorable preverbal experiences could somehow be aiding the speaker in a coherent reconstruction of the experiences that are remembered, despite the fact that those experiences were indeed unfavorable. These and other important questions regarding the role of "forgotten" early experiences (as opposed to heritable genetic factors) in making some individuals more likely than others to be placed in an "earned secure" category can only be addressed via longitudinal studies.

SUMMARY AND CONCLUSIONS

The Adult Attachment Interview (George et al., 1984, 1985, 1996) is a semistructured protocol focusing upon an individual's description and evaluation of salient early attachment experiences and the effects of these experiences on current personality and functioning. The interview is analyzed via an accompanying scoring and classification system (Main & Goldwyn, 1984a, 1998a) that includes a set of general category descriptors for identifying five differing (secure, dismissing, preoccupied, unresolved, and cannot classify) "states of mind with respect to attachment," as well as continuous scales for scoring the text with respect to both the speaker's current state of mind and his or her inferred childhood experiences.

The analysis of the interview originally focused primarily upon content-oriented aspects of the global category descriptors (e.g., "valuing of attachment and yet seemingly objective," "dismissing or devaluing of attachment," "preoccupied by past attachment experiences") and utilized only a few continuous scales (e.g.,

"coherence of transcript," "idealization of parents," "insistence on lack of recall"). Over time, interview analysis came to include new scales pertaining more specifically to the discourse process (e.g., "vague discourse usages"), and hence began to more explicitly incorporate the ways in which specific aspects of the conversational exchange related to the secure versus insecure adult attachment categories. It was later discovered that this advance in text analysis fit well with the work of the linguistic philosopher Grice (1975, 1989) as it pertained to the ideal of cooperative, rational discourse.

At present, interview analysis takes into consideration each of the factors above, and thus scale scores and general category descriptors are now viewed within the larger context of the overall discourse exchange. Perhaps the most critical implication of this approach to the analysis of language is that *the parents of insecure infants appear unable to discuss their own attachment-related experiences without significantly violating Grice's conversational maxims*. Thus notable failure in the maintenance of coherence and/or collaboration during these discussions has repeatedly been shown to predict insecure infant attachment.

Since the original studies that demonstrated the power of the interview to predict the strange situation response of a speakers' infant, clinical and developmental researchers have applied the AAI to an increasingly wide variety of domains. Coherent, collaborative (secure/autonomous) interview responses have been found to be associated with sensitive, responsive caregiving, and the psychometric properties of the instrument have been rigorously tested. Furthermore, AAI studies have been extended to clinical populations, and very few clinically distressed individuals (or parents of clinically distressed children and adolescents) have been found to be secure/autonomous. Longitudinal studies are now emerging demonstrating that an infant's strange situation behavior toward the mother (in the absence of highly stressful intervening life events) predicts secure versus insecure interview responses in the same individual during adolescence and young adulthood. The AAI has been or is now being utilized in a variety of other areas, including studies of criminal populations, political extremism, couple interactions, and readiness for and responsiveness to clinical interventions.

In addition to providing a history and over-

view of AAI research, this chapter has addressed a number of frequent questions and sources of confusion surrounding the interview and its assessment. The first involves a common misunderstanding regarding what the AAI does in fact assess. The AAI does not assess an adult's secure versus insecure attachment to any other specific person, but rather evaluates an individual's overall state of mind with respect to attachment—a state no doubt influenced by a wide variety of past and current relationships. The assessment of the AAI via nonverbal behavior has been considered, as has classification derived directly from videotapes; it has been suggested (1) that nonverbal behavior should be considered separately from rather than in conjunction with the Main and Goldwyn system, and (2) that using this current, language-based system to classify directly from videotapes is likely to prove both cumbersome and less accurate. In addition, the assessment of attachment through self-report inventories has been discussed. Here differing approaches have been delineated, and it has been noted that attempts to capture adult state of mind with respect to attachment using self-reports have yet to be proven successful. In contrast, self-reports of romantic and couple attachment relationships—while not related to the AAI—are producing intriguing and coherent outcomes.

With respect to "emotion," because the AAI is scored and classified from verbatim speech transcripts, descriptions of its analysis may initially appear remote from the affective components involved in the discourse exchange. Emotion (as indicated in conjunction with both theoretical considerations and category descriptors) is nonetheless believed to play a central role in production of the varying forms of AAI narrative. As regards temperament, the influence of hereditary versus environmental factors upon individual differences in AAI response remains unclear, particularly with respect to individuals classified as "earned secure." Finally, regarding issues of memory and experience bearing on coherence versus incoherence within the AAI, no claim is made that the contents of any speaker's presentation represent an accurate reconstruction of his or her life history. How construction of narrative and actual experience may be related is of central import, but this topic has yet to be investigated.

Levy, Blatt, and Shaver (1998) have termed the match between AAI and infant strange situation behavior "astonishing," and it is remarkable indeed that this relation has now been reported

by so many investigators. From the point of view of this writer, what is perhaps most fascinating about the analysis of the AAI is that it suggests that language can provide an "empirical window" into aspects of cognition and emotion that systematically mediate caregiving behavior. Main (1991, 1995, 1996, in press) has suggested that individual differences in cognition and the expression and/or regulation of emotion as manifested in the AAI may reflect differences in capacities for flexibility of attentional processes pertaining to attachment. This line of reasoning can be clarified by considering that accessing and reflecting upon attachment-related experiences, while simultaneously monitoring the discourse context within the interview, must require relatively high capabilities for flexibility of attention (Hesse, 1996). Because maintaining flexibility of attention while discussing attachment-related experiences appears to be a central component in the production of a coherent/collaborative text, this capacity may well be a necessary prerequisite to sensitive and responsive caregiving.

This proposition is brought into relief when the three central insecure categories of adult attachment are considered. A speaker classified as dismissing—via failing to integrate descriptions of experience, as seen, for example, in insistence on lack of memory—appears to restrict attention to the level of semantic representations. This restriction leads to incoherence in narrative, and, relatedly, predicts an avoidant infant strange situation response. Speakers classified as preoccupied appear to exaggerate attention to the interview queries, focusing upon particular (episodic) aspects of their history at the expense of monitoring the discourse context. Thus flexibility of attention is compromised here as well, and these speakers—excessively focused upon their own histories—have infants who, during the strange situation, are excessively focused upon them. Finally, among unresolved speakers, disorganization in discourse and reasoning appears to indicate disruptions in attentional processes, whether otherwise flexible or inflexible. Here it has been suggested that a (temporary) collapse in attention is occasioned by the arousal of unintegrated fear (Hesse & Main, 1999, in press; Main & Hesse, 1990). Strikingly, the infants of these speakers manifest disruptions (disorganization/disorientation) in attention and behavior during the strange situation.

Within the AAI, the organization of language

pertaining to attachment thus appears to be a manifestation of the "dynamics" of cognition and emotion as mediated by attention. Individual differences in attentional flexibility regarding attachment may therefore influence patterns of caregiving, which in turn may shape responses in the offspring that influence the organization of its own developing attentional propensities.

The importance of this point can initially be difficult to comprehend. It is not the simple exposition of the notion that the way one person speaks and acts will influence another to follow suit. Recall that Crowell et al. (1996) demonstrated that the form of discourse used by a given speaker in the AAI is orthogonal to that speaker's discussion of work-related experiences. Thus the form of language appearing within the AAI is most likely a manifestation of highly specific aspects of mental processes that represent the speaker's potential capacities for caregiving, perhaps including subtle aspects of emotional attunement (Haft & Slade, 1980), emotion regulation (Cassidy, 1994; Kobak, Chapter 2, this volume), and the ability to accurately conceptualize the infant's wishes and intentions (see Ainsworth et al., 1978; Fonagy et al., 1991, 1996; Main, 1991). The discovery that differing forms of discourse regarding attachment appear to be predictive of differences in this potential has no doubt permanently altered the way language will be considered within the context of clinical and developmental research.

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NOTES

1. In fact, interview analysis takes into account that, as Mura (1983) has pointed out, speakers can "license" violations of Grice's maxims. For example, "If you really want to hear about that one, let me ask you about your dinner plans" licenses a violation of quantity; "I'm sorry, but I need to back up and digress" licenses a violation of relevance.

2. Rarely, speakers are placed in the unresolved category for reports of extreme behavioral reactions to loss or other traumatic experiences.

3. These findings emerged when Gunderson's classification criteria for borderline status were used.

4. The strange situation classification distributions

of these nonconventional dyads did not, however, differ from those of conventional low-risk samples.

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