CHAPTER 25

The Adult Attachment Interview

Protocol, Method of Analysis, and Empirical Studies

ERIK HESSE

In 1985, in an article entitled "Security in Infancy, Childhood, and Adulthood: A Move to the Level of Representation," Main, Kaplan, and Cassidy reported the results of their sixth-year follow-up study of 40 Bay Area children who had been seen with each parent in the Ainsworth Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) at 12 (or 18) months of age. Within that presentation, special emphasis was given to verbatim texts taken from a newly developed Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984, 1985, 1996). During the course of this interview, individuals are asked both to describe their attachment-related childhood experiences—especially their early relations with parents or parenting figures—and to evaluate the influence of these experiences on their development and current functioning. Main and her colleagues found that transcribed verbatim responses from these interviews could be systematically placed into one of three adult attachment classification categories (Main, 1985; Main & Goldwyn, 1984a; Main et al., 1985). The first was termed "secure-autonomous" ("valuing of attachment relationships and experiences, and yet apparently objective regarding any particular relationship experience") and was associated with infant Strange Situation security with the speaker. A second kind of interview text was associated with insecure-avoidant responses to the speaker in the Strange Situation procedure and was termed "dismissing" ("dismissing, devaluing, or cut off from attachment relationships and experiences"). The third type of interview classification category was termed "preoccupied" ("preoccupied with or by early attachments or attachment-related experiences") and was associated with insecure-resistant/ambivalent responses to the speaker. Thus a marked relation between a parent's hour-long discussion of his or her own attachment history and the offspring's Strange Situation behavior 5 years previously had been uncovered. Since that time, the AAI has been increasingly applied in both clinical and developmental research.

In this chapter, I focus not only on a description of the queries used in the AAI, but also on the associated coding scales and classification system. Although the methods of analyzing AAI transcripts have grown increasingly sophisticated over the years (e.g., Main & Goldwyn, 1984a; Main, Goldwyn, & Hesse, 2003), from the outset the scoring procedure has focused on the overall coherence of the text; it has taken into account as potential indices of insecure states of mind any major contradictions and inconsistencies in the narrative, as

well as passages that are exceptionally short, long, irrelevant, or difficult to follow. Thus differences in the use of language relevant to attachment—and not retrospective inferences about the nature of the person's actual attachment history—have consistently been the basis of the analysis and the source of the AAI's predictive power.

Here I also describe the ways in which transcribed responses to the AAI are analyzed. There are five major classifications, each derived from studying the full text. These include the initial three "organized" state-of-mind classifications mentioned above ("secure," "dismissing," and "preoccupied") and two further "disorganized" classifications ("unresolved/disorganized" and "cannot classify"; see Hesse, 1996; Hesse & Main, 2000), developed later and now well delineated. (The cannot classify category has recently been expanded, see pp. 572–573.) Each of these major AAI classifications (except cannot classify) has repeatedly been associated with the security versus insecurity of the offspring's attachment to the speaker, with the speaker's responsiveness to the offspring, and with the speaker's emotional/clinical status.

Recently, among many other examples, the AAI has been used to estimate the extent to which parents in high-risk samples are willing to involve themselves in the intervention process (Heinicke et al., 2006); to determine whether, among adults, rates of insecurity are increased by disadvantages such as deafness or blindness (they are not; see van IJzendoorn & Bakermans-Kranenburg, 2008); to search for anomalous parent–infant interaction patterns related to particular AAI classifications (unresolved/disorganized parents are substantially more frightened, frightening, and dissociative than other parents; Jacobvitz, Leon, & Hazen, 2006); to ask whether the daughters of Holocaust survivors found to be insecure on the AAI in Israel are significantly more likely than daughters of control participants to be insecure (unexpectedly, and arguably due to surrounding cultural conditions, they are not; see Sagi-Schwartz, van IJzendoorn, et al., 2003); to ask whether state of mind with respect to attachment might moderate the relation between maternal postnatal depression and infant Strange Situation security (it does; McMahon, Barnett, Kowalenko, & Tennant, 2006); and to show that disorganized/disoriented attachment to the mother in a second child following stillbirth of a first is fully mediated by unresolved/disorganized status with respect to the initial loss (Hughes, Turton, Hopper, McGauley, & Fonagy, 2001).

The chapter is organized into three major sections. The first section provides a description of the AAI protocol and individual differences among the organized response patterns. I begin by introducing the ways in which the three organized classifications can be understood in terms of both attentional and—separately, albeit relatedly—linguistic (conversational or discourse) mechanisms. The former relies on the thinking of Main (e.g., 1990, 1993; see below) regarding flexibility versus inflexibility of attention under stress. The analyses of the linguistic or conversational mechanisms draw upon the work of linguistic philosopher H. P. Grice (1975, 1989). These mechanisms are well represented in the central AAI state-of-mind scales, although each of those scales (as described in a history of the Bay Area longitudinal study; Main, Hesse, & Kaplan, 2005) had been devised prior to Main's discovery of Grice's work. I conclude this section by presenting some prototypical responses to two different AAI queries that are common among "organized" speakers. As differing responses are presented, I point out how they can be understood in terms of both attentional and Gricean conversational mechanisms.

In the second section, I describe how trained coders systematically approach the analysis of an AAI transcript. This was not explicated in the first edition of this chapter (Hesse, 1999), leaving a mystery for readers who had been aware of the instrument and its connections to other phenomena, but not of the ways in which interview texts are analyzed. There are two additional approaches to analyzing the AAI, beyond the five major classifications presented in 1999. These have drawn less attention in the literature, despite the fact that they appear to be of at least equal power. First, the three organized categories of the AAI are ultimately divided into 12 subclassifications, which I describe here for the first time. This is in keeping with Ainsworth's division of her three organized infant Strange Situation classifications into eight subclassifications (Ainsworth et al., 1978), which she predicted would "in time prove even more useful than classification into the three major groups themselves" (Ainsworth et al., 1978, p. 251). As I note here, AAI and Strange Situation subclassifications have now been found to be significantly related in four different investigations (including Behrens, Hesse, & Main, 2007), but nonetheless remain underutilized. Second, from its inception, the AAI scoring system has included a set of (9-point) continuous rating scales that assess

the speaker's current "state of mind with respect to attachment," whether with respect to a given parent (e.g., idealizing of the father) or with respect to discourse patterning in general (e.g., overall coherence of transcript, vague discourse usages). As researchers from several laboratories have correctly emphasized, use of these scales releases the restriction of range imposed by the presentation of findings only in terms of classifications, and hence substantially increases statistical power (Fyffe & Waters, 1997; Roisman, Fraley, & Belsky, 2007). This section brings together all three current methods of AAI text analysis.

In the third section, I review selected studies based on the AAI, beginning with Main's original investigation of a Bay Area sample (Main & Goldwyn, 1984b, 1988, 2008). I review (and then partially update) the best-replicated findings regarding the AAI, including those related to its psychometric properties, and then move on to a necessarily select group of newer studies. This selection is made with apologies to many excellent investigators whose work is not reviewed here because of space limitations. Appendix 25.1 describes training in AAI analysis.

THE AAI PROTOCOL

The AAI utilizes a prespecified format, with questions asked in a set order, accompanied by specific follow-up probes. The protocol is deliberately arranged to bring forward structural variations in the presentation of a life history, and interviewers must make certain that their own part of the conversation serves only to highlight, and not to alter, participants' natural tendencies to respond in particular ways.

The AAI normally takes about an hour to administer and currently (George et al., 1996) consists of 20 questions. The entire interview, including all comments by both the interviewer and the interviewee, is transcribed verbatim, including (timed) pauses, dysfluencies, and restarts, although cues to intonation, prosody, and nonverbal behavior are omitted. The interview opens with a call for a general description of relationships with parents during the speaker's childhood, which is 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 why each descriptor was chosen. This process is then repeated for the father and, when applicable, for any other significant attachment figure (e.g., stepfather or nanny). The protocol next contains questions about which parent the speaker felt closer to, and why; what the speaker did when emotionally upset, physically hurt, or ill; and how the parents responded at such times. The participant is then asked about salient separations, possible experiences of rejection, and any threats regarding discipline. Next, the speaker is queried regarding the effects of these experiences on his or her adult personality; whether any experiences constituted a significant setback to development; why the parents are believed to have behaved as they did during childhood; and whether there were any persons who did not serve as parenting figures, yet were thought of as parent-like during childhood.

An especially important feature of the AAI protocol is the section addressing experiences of loss of significant persons through death. Here the emphasis on childhood is abandoned, and important losses occurring at any point in the speaker's lifetime are addressed. Speakers are asked to describe how the death occurred, their reactions to the loss at the time, any funeral or memorial service attended, changes in feelings over time, effects on adult personality, and (where relevant) effects on their behavior with their children. In the case of persons with multiple losses, interviewers restrict their queries to those three or four that seem most significant. Descriptions of any abuse experiences (and, indeed, any overwhelmingly frightening experiences throughout a speaker's lifetime) are also sought.

Toward the close of the interview, participants are asked about the nature of the current relationship with parents (if living). In addition, they are questioned as to how they feel (or imagine they would feel if they had a child) about being separated from their child, and how experiences of being parented may have affected responses (or imagined responses) to their own child. Finally, the participant is invited to speculate regarding wishes for his or her real or imagined child 20 years from now.

Table 25.1 offers examples of some of the questions taken from the AAI protocol devised by George and colleagues (1985, 1986, 1996), but omits their follow-up probes. The current 72-page protocol is available (see Appendix 25.1), and administering the AAI requires practice with feedback from experienced interviewers.[1]

The central task the interview presents to participants is that of (1) producing and reflecting on memories related to attachment, while *simultaneously* (2) maintaining coherent, collaborative

TABLE 25.1. Brief Précis of the Adult Attachment Interview (AAI) 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 your 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 Erik Hesse or Mary Main, Department of Psychology, University of California at Berkeley, Berkeley, CA 94720. From George, Kaplan, and Main (1996). Copyright 1996 by the authors. Adapted by permission.

discourse with the interviewer (Hesse, 1996). This is not as easy as it might appear, and George and colleagues (1985, 1996) have remarked upon the potential of the protocol to "surprise the unconscious." As indicated above, the interview requires the speaker to reflect on and answer a multitude of complex questions regarding his or her life history, the great majority of which the speaker will never have been asked before. In contrast to ordinary conversations, where the interviewee has time for planning, the AAI moves at a relatively rapid pace, and usually all questions and probes have been presented within an hour's time. Ample opportunities are thereby provided for speakers to contradict themselves, to find themselves unable to answer clearly, and/or to be drawn into excessively lengthy or digressive discussions of particular topics. To maintain a consistent and collaborative narrative, a speaker must not only address the question at hand, but also be able to remember (and potentially reflect upon) what he or she has already said, in order to integrate the overall presentation as it unfurls. It is striking that although the interviewee is always informed in some detail regarding the overall topic of the interview prior to its administration, actually engaging in the process often appears to be a far more powerful experience than anticipated. This can lead to notable (and often ultimately systematic and repeated) incoherencies in linguistic aspects of the presentation, because at times the interviewee may not be able to maintain the usual degree of control over how the story unfolds.

The AAI protocol is structured to bring into relief individual differences in what are presumed to be deeply internalized strategies for regulating emotion and attention when speakers are discussing attachment-related experiences. This is achieved despite the fact that—although the interview transcripts contain the full verbatim exchange, including silences and dysfluencies—they are devoid of references to body movement, facial expression, or intonation. It is remarkable that on the basis of language use alone, AAI coders (as described below) are able to significantly predict how speakers will behave with others, including offspring, partners, friends, and even those to whom they have been newly introduced.

Finally, I should emphasize that the claim that the interview is able to elicit a particular (usually, singular—i.e., "classifiable") state of mind with respect to attachment is based on the assumption that by adulthood, what were originally independent attachments to mother and to father (e.g., Main & Weston, 1981) will have coalesced. An initial exploration of this assumption was undertaken by Furman and Simon (2004), who administered the AAI twice to 56 young adults. One interview focused on the mother only, and one on the father. As would be expected if a single state of mind does predominate in most individuals, state of mind with respect to father was found to be significantly related to state of mind with respect to mother.

Attentional and Linguistic Processes Involved in Distinguishing among the Organized AAI Categories

This section introduces two ways in which we have come to conceptualize some of the underlying mechanisms that may be responsible for the individual differences in discourse forms characteristic of secure, dismissing, and preoccupied speakers. I begin with Main's (1990) consideration of attentional flexibility versus inflexibility. I then turn to a discussion of Grice's (1975, 1989) maxims for adherence to, versus violations of, the requirements of conversational coherence and collaboration. The dovetailing of Grice's conversational maxims and the state-of-mind scales that Main and Goldwyn had devised several years prior to Main's first reading Grice has been striking. It has been highly useful heuristically, and references to Grice's maxims have appeared in all but the early versions of the AAI scoring and classification system.

The Organized Categories of the AAI Considered in Terms of Attentional Flexibility

The AAI scoring and classification system was initially grounded in the relation between the three central or organized forms of parental responses to the AAI interview queries (secure-autonomous, dismissing, or preoccupied) and the three central or organized forms of infant response to that same parent in the Strange Situation (respectively, secure, avoidant, or preoccupied), as first uncovered in Main's Bay Area study (Main & Goldwyn, 1984b, 1988, 2008; Main et al., 1985). The term "organized" is rooted in Main's (1990) contention that infants in the original three Strange Situation categories differ in flexibility versus inflexibility of attention to (1) the parent and (2) the inanimate environment—differences that are revealed in the Ainsworth separation-and-reunion procedure. The capacity for attentional flexibility was ascribed to secure babies because they readily alternate between attachment and exploratory behavior as the Strange Situation procedure unfolds, exploring in their mothers' presence and exhibiting attachment behavior (e.g., crying, calling) in the mothers' absence and again upon reunion (e.g., seeking proximity and contact). Attentional inflexibility was ascribed to insecure-avoidant infants, who focus *away from* the parent and on the toys or surroundings, and to insecure-ambivalent/resistant infants, who focus persistently *on* the parent at the expense of the toys and the surroundings.

Main later proposed that the organized AAI categories can also be viewed in terms of attentional flexibility (Main, 1993, 2000; Main et al., 2005). Thus attentional flexibility is seen in secure-autonomous parents as they fluidly shift between presenting their attachment-related experiences and responding to the request to evaluate the influences of these experiences (Hesse, 1996). In contrast, attentional inflexibility is observed (1) in dismissing responses to the AAI, in which the linguistic focus is continuously *away from* past attachment relationships and their influences; and (2) in preoccupied AAI texts, in which the focus is persistently, although confusedly, so strongly oriented *toward* attachment relationships and experiences as to prevent appropriate responses to the queries. It should be noted, however, that attentional inflexibility is relatively, albeit singularly, organized in terms of discourse strategy.

The Organized Categories of the AAI Considered in Terms of Grice's Maxims

Before methods of analyzing AAI transcripts are discussed further, a brief review of Grice's (1975, 1989) work is provided. The aim of this section is to facilitate an understanding of differing "organized" language usages within the AAI, and thus to convey what is actually being assessed when coherence versus incoherence of a given text is taken into consideration.

Although the AAI interviewer adheres to the interview questions and their probes as faithfully as possible, there are, of course, two speakers involved in the exchange. This means that the interview is a conversation as well as a response to a request for a spoken autobiography, permitting its analysis in terms of the extent to which the participant's responses approach the "Gricean" requirements for an ideally rational, coherent, and cooperative conversation. Grice (1975, 1989) proposed that these requirements are met insofar as speakers adhere to four specific "maxims" or principles. To the degree that these maxims are "violated," the conversation strays from the cooperative, rational ideal, but in fact—as Grice stressed in his later work (1989)—complete and continual adherence is not expected. For a text to be classified as secure-autonomous, coherent, cooperative discourse must simply be *relatively* well maintained, as compared to that of other conversationalists observed in this context.[2] The four maxims are as follows:

1. *Quality*: "*Be truthful, and have evidence for what you say.*" This maxim is violated when, for example, a parent is described in highly positive general terms, but the specific biographical episodes recounted subsequently contradict (or simply fail to support) the interviewee's adjectival choices. An interview of this kind can also be considered internally inconsistent, and internal inconsistency of the kind just described appears most frequently in the texts of individuals classified as dismissing.

2. *Quantity*: "*Be succinct, and yet complete.*" This maxim demands conversational turns of reasonable length—neither too short nor too long. By requiring speakers to be sufficiently "complete," Grice was saying that incomplete, excessively short answers are not acceptable. This occurs when, for example, "I don't remember" and/or "I don't know" becomes the response to several queries in sequence, cutting off further inquiry. Excessively terse responses occur most frequently in the texts of individuals classified as dismissing.

In terms of quantity, Grice also requires that so long as they are complete, responses should be reasonably succinct; consequently, the maxim of (appropriate) quantity can also be violated when a speaker takes excessively long conversational turns. Here the interviewee may hold the floor for several minutes, perhaps providing increasingly unnecessary details. Excessively lengthy responses occur most frequently in the texts of individuals classified as preoccupied.

3. *Relation*: "*Be relevant to the topic as presented.*" The maxim of relation or relevance is violated when, for example, queries regarding the childhood relationship with the speaker's mother are irrelevantly addressed with discussions of current interactions with the mother or descriptions of the speaker's relationship with his or her own children. As might be expected, violations of relevance occur most frequently in the texts of individuals classified as preoccupied.

4. *Manner*: "*Be clear and orderly.*" This maxim is violated when, for example, speech becomes grammatically entangled, psychological "jargon" is used, vague terms appear repeatedly, or the speaker does not finish sentences that have been fully started. Violations of manner appear most often in preoccupied texts.

Having concluded this discussion of Grice's conversational maxims,[3] I present two representative interview queries and provide examples of responses that would be typically associated with each of the three organized AAI classifications. Where relevant, I discuss violations of specific maxims.

Examining Differing Responses to Selected Interview Queries as They Relate to the Organized AAI Categories

I have selected two questions that are especially useful for characterizing individual differences in response to AAI queries. The first is perhaps the best-known of all the AAI protocol questions—question 3, where the participant is addressed as follows:

> "Now what I'd like you to do is to think of five adjectives, words, or phrases that would best describe your relationship with your mother during childhood—say, between the ages of 5 and 12, but even earlier if you can remember. Take a minute to think, and then I'm going to ask you why you chose them."

Notice that this question includes two parts that operate at different "mental levels": a semantic level (the descriptors, or adjectives themselves, devoid of space–time particulars); and an episodic level (what happened, and if possible, roughly when), which suggests that there will be a rationale for the adjectival choice. By implication, of course, any particular word should be readily accompanied by supportive accounts of childhood experiences.

In essence, the adjectival constellation that the speaker is asked to provide for his or her relationship with a given parent during childhood requires the person (whether consciously or unconsciously, accurately or inaccurately) to produce "on the spot" a fairly complex and incisive synopsis of the general nature of the childhood relationship. Once the first part of the question has been answered, the speaker has in effect "taken a stance" as to the kind of relationship he or she had with this particular parent. The adjectival constellation can of course vary from the extremely negative to the extremely positive, and can include mixed assessments as well. For example, with respect to the mother, if the choice of adjectives were "loving, caring, supportive, trustworthy, and warm," it will seem that the speaker is attempting to convey that he or she had a positive to highly positive experience with mother during childhood. However, it is obvious that an adjectival constellation such as "caring, interfering, warm, unpredictable, rule maker" conveys a mixed impression.

Next, the participant is systematically probed for a specific memory that would illustrate why each particular word or adjective was selected. This is the portion of the "adjectival" question in which the participant is implicitly asked to begin drawing on episodic memory. Note that even if the adjectives provided by two different speakers were identical, the narrative that emerged in the two cases could have entirely different forms.

Let us consider the "loving . . . " constellation above. The interviewer is now required to probe as follows:

> "Okay, the first word you gave to describe your relationship with your mother during childhood was 'loving.' Can you think of a memory or incident that would illustrate for me why you chose that word?"

The range of potential responses to this request is virtually infinite, and yet it will yield information that can be approached with a view to assigning scores and ultimately a state-of-mind classification. Thus it is likely that the speaker's response bears deeply on the degree of his or her own self-awareness, and in some cases—whether or not the person is conscious of it—on the motivation to convey a particular impression to the interviewer. Consider as an example the following, and not at all uncommon, response to the interviewer's probe for any memories or incidents that could illustrate why the speaker chose "loving."

PARTICIPANT: I don't remember. . . . (*5-second pause*). Well, because she was caring and supportive.[4] [Notice that here the speaker is simply using similar words to describe the previous words. In essence, the speaker is repeating the word rather than answering the question.]

INTERVIEWER: Well, this can be difficult, because a lot of people haven't thought about these things for a long time, but take a minute and see if you can think of an incident or example.

PARTICIPANT: (*10-second pause*) Well . . . (*5-second pause*), I guess like, well, you know, she was really pretty, and she took a lot of care with her appearance. Whenever she drove me to school, I was always really proud of that when we pulled up at the playground.

INTERVIEWER: Thank you. And, I just wonder whether there might be another example?

PARTICIPANT: No, I think that pretty much takes care of it.

Here it is impossible, of course, to know whether the speaker is aware that she has not answered the question. What can be readily inferred, however, is that an attempt is being made to convey a positive impression of her childhood relationship with her mother—which, if continued throughout the interview in this fashion, will not form the basis for a believable description of the adjectives chosen. Clearly, something psychologically quite complex is taking place here, despite the brevity of the response. Although convincingly loving interactions may be recounted later in the interview, at this point we can say that if the speaker continues along these lines—that is, seeming to attempt to create a positive picture of her childhood experiences with her mother, but in fact frequently blocking discourse, yielding a paucity of substantive support for the positive adjectives chosen—it is likely that the transcript as a whole will be classified as dismissing. Thus dismissing speakers (the best-fitting classification for this speaker if only this interview extract was available) violate Grice's quality/truthfulness maxim by failing to provide evidence for what they have claimed. The responses are also overly succinct, violating quantity and perhaps involving (whether deliberate or unconscious) restrictions in attention *away from* the topic of childhood experiences with the mother.

I now turn to a second speaker who also describes the mother as "loving."

PARTICIPANT: Loving . . . (*5-second pause*) I don't know if this is the sort of thing you're looking for, but one thing that comes to mind is the way she stuck up for me when I got in trouble at school. Boy, if I told her about some problem at school and she thought I was in the right, or if I told her some kid or some teacher had treated me bad, she'd go out and investigate and she'd stick up for me to the teacher, or to the kid's parents, or . . . anybody, really. I could put it another way, too. I just knew where I stood with her, and that she'd be comforting if I was upset or crying or something.

INTERVIEWER: Thank you (*interrupted*).

PARTICIPANT: (*Interrupting and continuing*) Oh, you wanted a specific example. Um, that time I set fire to the garage, using my brother's chemistry set I absolutely positively wasn't supposed to use. Came running when the neighbors phoned the fire department about the smoke. Expected to get the life lectured out of me, but she just ran

straight for me and picked me up and hugged me real hard. Guess she was so scared and so glad to see me, she just forgot the lecture. Later there were little hints at the dinner table about the incident, but I'd say, basically, what she did that time—that was very loving.

If the discussion of childhood parenting continues steadily in this vein, with well-supported (whether positive or negative) statements regarding parenting and clear responses similar to this one,[5] the trained coder will begin to suspect that the transcript is likely to be coded secure-autonomous.[6] In terms of Grice's maxims, the speaker has kept to the maxim of quality (providing evidence for "loving"), which Grice at times called the "overriding principle" for cooperative, rational discourse. There are no violations of manner or relevance (the speaker is easy to follow and stays on topic). There is a slight violation of quantity (the interviewer had considered the response complete, while the participant continued), but the speaker does wind down to a conclusion showing that he has kept the topic in mind ("but I'd say, basically, what she did that time—that was very loving"). In addition, the extra time taken is in the service of providing a *specific* example, which is what the interviewer has explicitly asked for. The passage is too brief to illustrate attentional flexibility, but no inflexibility is evident.

Finally, here is an example of a third participant, who has also chosen "loving":

PARTICIPANT: Uh, yeah, sort of very loving at times, like people were in the old days—uh, my youth, lot of changes since then. I remember home, and home was good and that. And uh, loving, that's just like my wife is with [child]—taking him out to the movies tonight, dadadada, special thing he's been wanting to see all week. Actually, it's more like a month, that turtle movie, don't like it too much myself. Saw it, though, now, when was it, um, maybe 6 months ago. Yeah, she's very loving with [child].

INTERVIEWER: Mm-hm. Okay, well, what things come to mind when you describe your childhood relationship with your mother as "very loving at times"?

PARTICIPANT: Really great things, felt really special, really grateful to her for that. My childhood, I remember just sitting on the porch, rocking, rocking back and forth watching my parents, or maybe having some lemonade—this, that, and the other. Really special sorts of things, just me and her, grateful for all she did for me. I wasn't easy, my temperament was hard on her, kind of hard. Nobody like her. Me and my cousins from [Town 1] going down soon—really big birthday, she gonna be 80, gives my age away. (*Continues*)

Although speech of this kind is not common, it provides a good example of one of the subclassifications of the preoccupied category ("passively preoccupied," subcategory E1, described later in this chapter). First, the speaker makes some strongly positive statements about the relationship with his mother during childhood, but oddly these are accompanied by the statement that his temperament was "hard on her." Second, the speaker is unable to stay with the question, which was about his childhood relationship with his mother, and he veers repeatedly to the relationship his wife has with their child. Other than drinking lemonade together, examples of how the mother was loving during childhood are not provided, largely because the speaker moves into topics irrelevant to the question (such as his mother's upcoming birthday).

Notice, then, that as in the case of the dismissing (first) speaker above, the question is not answered. However, this failure to answer appears in a very different form. These are violations of Grice's maxim of relevance (moving into topics irrelevant to the question), and implicitly the maxim of quantity as well. We also see violations of manner, with elusive additions to already completed sentences ("and that," "this, that, and the other") as well as nonsense speech ("dadadada").

Now let us briefly consider speakers who begin with a negative descriptor of the childhood relationship with mother—in this case, "troublesome." The interviewer again will have set the stage by asking whether there are any memories or incidents come to mind with respect to "troublesome."

Consider the following response taken from a first speaker who very likely will not be classified as secure.

PARTICIPANT: Troublesome. Weak, cried. Fell apart at funerals.

INTERVIEWER: I wonder if you have any specific memory of times you found her troublesome?

PARTICIPANT: Sobbed through her aunt's funeral.

Embarrassing. Couldn't wait to get away from her. Next question?

This response would most probably have come from a dismissing speaker, and it is easy to see that the speaker's attention (as seen both in the extreme brevity of the response and in the terminating suggestion, "Next question?") is inflexibly focused away from, and is dismissing of, the mother and early experiences with her. This speaker dismisses attachment relationships by casting the parent aside via derogation and refusal of further discussion.

Responses of this kind tend to come from interviewees who fall in the "derogating" subcategory of the dismissing AAI category (Ds2, described below). Notice that, like the excerpt from the transcript of the earlier dismissing speaker, who gave only brief responses and failed to support "loving" as an adjectival choice, this latest speaker also has little to say—or, in Gricean terms, violates expected quantity by being overly succinct. However, there is little violation of quality or consistency here, as there was in the previous speaker: From his own perspective, this speaker has—albeit very minimally—given an example of how the mother was troublesome.

Now consider a second speaker who also selected "troublesome" as the first adjective describing her childhood relationship with her mother:

PARTICIPANT: Troublesome. Well, she was troublesome for me when I was young, no question. She yelled a lot of the time, I remember that, and she also—she could spank really hard, and she got angry a lot. But like I said, my father left when I was 4, and she was trying to make enough of an income to support us, and trying hard to keep us on the straight and narrow at the same time that she was away such long hours. I didn't like it, what she did—like one time she slapped me in the face over something my sister had done, but she never apologized. I hated the yelling when my report card wasn't up to par. Yes, troublesome, or maybe I should have said it was a troubled relationship. But while I wish it had been different, it wasn't.

This speaker is exceptionally coherent in this passage. Her discussion is relevant and sufficiently elaborated, and her examples are consistent with her adjective, thus adhering to quality. There is no difficulty in following her reply, and hence no violations of manner. She does not violate quantity, and since she stays on topic, there are no violations of relevance. It is hard to identify attentional flexibility in a paragraph of this length, but there is no evidence of attentional inflexibility.

Finally, here is a third speaker who has been asked to support "troublesome":

PARTICIPANT: That was an understatement. It was yell, yell, yell—"Why didn't you this, why didn't you that?" Well, Mom, it was because you were just at me all the time, like last week you start yelling at the only grandkid you've got when we had you over to dinner. And angry? She's angry at me, she's angry at her latest husband—that's the latest in a series—now she's angry at her neighbor about a tree that's supposed to be blocking her view, and so on and so on. She's more than troublesome; she stirs up little things, like I was saying last week at dinner, and ... (*Continues*)

This speaker has violated manner in her third sentence by suddenly addressing the mother as though she were present, and continuing to do so. If we consider what she "says" to the mother, we can see a violation of relevance as well as manner, because the interviewer has asked her to discuss her *childhood* relationship. This violation of manner is strikingly indicative of preoccupation generally, given that the speaker appears to be addressing the (absent) parent in the past rather than talking to the interviewer in the present. Finally, attentional inflexibility (relentless focus on the parent as though she were present in the room, together with untoward discussion of the present rather than the childhood relationship context) is striking.

Once again, the examples I have given are too brief to provide a coder with more than a preliminary estimate of forthcoming interview classification. They do, however, demonstrate distinctly different forms of discourse response that, if predominant across the text as a whole, would lead to placement in differing AAI categories.

Having given some initial examples of responses to the third question in the AAI, I move to question 10, which appears at the interview's midpoint. This question focuses on the speaker's view of the overall effects that experiences with the parents may have had on his or her personality, and it is accompanied by a follow-up probe regarding possible setbacks to the speaker's development. This question and probe also provide a good example of the stiff requirements the AAI places on

the participant: In order to answer the question in a way that "fits properly" with the earlier description of the life history, the speaker will have to be able to recall and evaluate what he or she has said, and provide an answer consonant with that presentation. I begin with an example that might have been found in the transcript taken from a dismissing speaker, who often will have failed to convincingly describe loving experiences with either parent earlier in the interview.

INTERVIEWER: In general, how do you think your overall experiences with your parents have affected your adult personality?

PARTICIPANT: Well, like I said already, it goes hand in hand with everything I said at the beginning. You know, they were strong people, and they encouraged me to be strong and not to get upset about things and to persevere. And that's why I'm here at [prestigious university] now. I feel really good about the success I've achieved.

INTERVIEWER: Are there any aspects of your early experiences that you feel were a setback in your development?

PARTICIPANT: No, maybe some little thing like ... well, no, basically nothing that didn't just make me better, you know. I'm not saying that sometimes they didn't need to lean on me a bit to get their point across, but that's paid off in that I'm really self-motivated now.

These responses do not notably violate Grice's maxims. In terms of attentional flexibility, however, we may note that—given that all of us have limitations—to respond with essentially "no setbacks" may indicate an active and inflexible focus *away from* any problems or difficulties.

In contrast to the speaker just described, many secure-autonomous transcripts exhibit a balanced response to question 10, even if the parent was earlier described as loving. The impression given is that the speaker may have thought of the question before.

INTERVIEWER: What effects do you think your experiences with your parents have had on you?

PARTICIPANT: Well, only I guess that, like I told you, I think there was a sort of negative gender thing. I did always feel like my mom and my sister were closer than my mom and I were, because I was a boy and they could relate to each other more easily. Another thing, and I think sometimes this gets in my way with work, is that my dad would tend to help me out maybe too much, and even when I wasn't in some kind of a jam, so that can make it harder for me to get things done by myself now. I think I depended on him a lot.

INTERVIEWER: Do you consider this a setback in your development?

PARTICIPANT: Well, for example, from my dad helping me out so much, I can be a real procrastinator, particularly if I'm anxious or under a lot of pressure. And with women, especially when they seem real close to each other, I ... stand back, I guess. Like when I watch my girlfriend with her mother, maybe.

This speaker seems to have a sufficiently ready answer to this query, so that—although both parents had earlier been described convincingly as loving—his reflection on childhood experiences and potential setbacks from childhood suggests some problems.

Other secure-autonomous speakers may, however, begin by saying they had not thought of this question before and then, perhaps following a lengthy pause, provide a coherent response. This happened with one speaker who had earlier described a difficult life, with parents who were both rejecting and neglecting:

INTERVIEWER: What effects have your experiences with your parents had on you, do you think?

PARTICIPANT: I haven't thought about that before. ... (*21-second pause*) I guess I felt unwanted and unloved. Shy. Awkward around other girls now. Guys too, of course ...

INTERVIEWER: Do you think this caused a setback in your development?

PARTICIPANT: I don't socialize that much. I guess that could come from ... (*3-second pause*) feeling unwanted when I was a child.

In neither of these examples from secure-autonomous transcripts do we see substantial violations of Grice's maxims, although admittedly the second speaker is somewhat too succinct. What is striking, however, is the ready attention to difficulties in relationships seen in both responses, together with their effects. For the first speaker, attention easily moves to negative outcomes. For the second, who finds the question new, time is

taken, and then flexible attention permits access to negative outcomes.

Finally, we move to what might be an answer taken from a preoccupied transcript, this time exemplifying speakers ultimately placed in the preoccupied subclass termed "angrily preoccupied" (E2), as opposed to passively preoccupied with early attachment relationship (E1, as seen on p. 559).

INTERVIEWER: What effects do you think your experiences with your parents have had on you?

PARTICIPANT: I guess I'd have to say it affected me, you know, in almost every way, like I've been telling you about with my mother—you know, everything. It's a constant. It's something that made me completely change, shape, the way that I approach my own children. You know, like, my mother will come over and she'll say, "Why are you letting Angela run around like that and make all that noise?" and I'm like, "You raised me the way you did, and put all these constraints on me and constantly told me what to do, so I'm giving her space to be herself," you know? And with my mother, it's just like that.

INTERVIEWER: Do you think this was a setback to your development?

PARTICIPANT: Well, I'd have to say the whole thing was a setback. I mean, it's taken me years to get past it, to get to where I am now, today.

This angrily preoccupied speaker appears to use the question as an opportunity to commence on a series of complaints regarding his parents, and he becomes distracted in the process. Interestingly, this is done without adequately answering the question regarding "setbacks." Instead, the speaker appears too preoccupied with specific experiences to rise above them sufficiently to enumerate setbacks as requested (in fact, in this example the speaker implies that despite struggles he is now a success). In other words, this speaker exhibits an ongoing involvement with the parents, rather than reflection upon *present* setbacks stemming from childhood. This is accompanied by an unfavorable comparison wherein the speaker portrays himself as an improvement on the parent.

Notice that none of the four speakers quoted here—including those whose responses appear consistent with the dismissing or preoccupied classifications—have substantially violated Grice's maxims in response to question 10. The differences in responses observed here are, as in the examples taken from the "adjectival" question, clearly reflective of distinctively different *attentional* approaches to the interview task. The dismissing speaker seems unable even to begin to focus attention on untoward effects of parental behavior. In contrast, the fluent secure speaker readily turns attention to untoward ramifications, whereas the secure but less fluent speaker, who appears elsewhere in the transcript to have had relatively harsh experiences, has also been able slowly to "reach for and find" negative effects. However, in contrast to the preoccupied speaker, she does so in a contained manner, sticking to the query *without* repeating what had been wrong with the parent(s) other than in brief summary form. The angrily preoccupied speaker seems to use the question as an opportunity to begin a series of complaints about his parents, which results in distraction from the purposes of the question. Hence his attention seems to have become inflexibly focused upon the past with the parents again, rather than the (present) interview query itself.

In sum, the AAI protocol is designed to bring into relief what might be referred to as different "proximate working strategies" manifested in language responses to questions about early attachment-related experiences and their effects. The AAI asks the same questions of each participant—and yet, as illustrated here, very different responses appear not only regarding the same questions, but even in illustrating the same adjectives. The essence of the AAI scoring and classification system (Main et al., 2003) amounts to a systematization of the different language uses seen in response to the set questions of the protocol.

THE AAI SCORING AND CLASSIFICATION SYSTEM

The AAI scoring and classification system initially focused only on the original three "organized" classifications and subclassifications, together with an accompanying set of continuous rating scales (Main & Goldwyn, 1984a). The earliest rules for classifying and scoring AAI transcripts were based on interviews with parents (both mothers and fathers) who were visiting Main's Social Development Project laboratory at the University of California at Berkeley, together with their 6-year-old children. Five years before, when the children were between 12 and 18 months of age, each had

been seen in the Strange Situation conducted separately with each parent. Scores for reunion behavior (e.g., avoidance or resistance), as well as major classifications and their associated subclassifications (Ainsworth et al., 1978), had been assigned at that time.

Out of the available sample of 103 dyads, Main and Goldwyn had selected a development sample of 36[7] for intensive study. Within this initial sample, Main and Goldwyn searched for differences and commonalities in the ways the parents of infants who had been judged secure, avoidant, or ambivalent/resistant with them in the Strange Situation 5 years earlier conversed about and described their own attachment histories and their effects.

Characteristics of each transcript were recorded and judgments were made about the speaker's probable experiences with each parent during childhood, together with the speaker's state of mind with respect to his or her attachment history. This state of mind was captured by gradually developed continuous rating scales used to assign secure-autonomous, dismissing, or preoccupied classifications, and later a set of 12 subclassifications. Both coders used their knowledge of attachment to "guess" the status of each transcript, before "deblinding" themselves to the associated Strange Situation classification and subclassification of the speaker's infant. The development sample of 36 texts was ultimately discarded, and—with no further feedback from Main—Goldwyn then continued alone through the remaining 67 texts. The results of this study are described later in this chapter (see also Main & Goldwyn, 1988, 2008). Once this first "blind" study was completed, Main and Goldwyn used all 103 available texts to expand their understanding of the relation between the adult life history narrative and infant attachment. This review led to an elaboration of the early scoring and classification system, and the new system—which included a chapter concerning the identification (Main, DeMoss, & Hesse, 1989) of speech and reasoning irregularities in the parents of infants judged as disorganized—was used by Ainsworth and Eichberg (1991) and Fonagy, Steele, and Steele (1991) in the initial parent–infant replication studies. Over the ensuing years, feedback from studies of parent–infant dyads in other samples (including, gradually, high-risk and clinical samples) has caused the system to continue to evolve, and more recently (Main et al., 2003) to include several new kinds of unclassifiability ("cannot classify").

The Organized Categories of the AAI

The organized categories of the AAI—secure-autonomous, insecure-dismissing, and insecure-preoccupied—are those in which the speaker shows a definitive, essentially singular "strategy" for getting through the interview, whether by "simply answering the questions" (as secure-autonomous speakers have been informally said to do); by blocking discourse, whether within or outside of awareness, together with refusing to reveal or discuss potentially distressing experiences (as speakers whose transcripts are assigned to the insecure-dismissing category do); or by manifesting a confused, unrelenting focus on varying incidents, feelings, and relationships aroused by the interview questions (as insecure-preoccupied speakers do). So long as a single one of these strategies seems to be at work throughout the interview, uninterrupted by a collapse of discourse or reasoning during the discussion of potentially frightening experiences, the transcript is considered organized.

As first noted in my discussion of the AAI protocol, each of the organized states of mind with respect to attachment stand—albeit at the discourse level—in attentional parallel to the secure, avoidant, and resistant forms of attachment behavior seen in the Strange Situation conducted with infants (first termed the "organized" infant attachment strategies by Main, 1990).[8] Thus parents producing inflexible, insecure-dismissing AAI texts tend to have infants who avoid them, essentially "dismissing" their comings and goings during the Strange Situation. Parents who produce inflexible, insecure-preoccupied AAI texts tend to have infants who are ambivalently (angrily or passively) preoccupied with them rather than attending to the available toys or other aspects of the surroundings. Finally, parents who produce flexible, secure-autonomous AAI transcripts ("valuing of attachment, but seemingly able to objectively evaluate any particular attachment relationship or experience") have infants whose attention in the Strange Situation is also flexible, alternating between attachment and exploratory behavior as the parents leave and then return to the room.

The AAI coder begins his or her work with the "experience scales" by assigning scores for central aspects of inferred loving versus unloving behavior of each parenting figure during the interviewee's childhood. Next, continuous scores on the scales for "overall state of mind with respect to attachment" are assigned, including a scale of primary importance (coherence), which since 1989

has increasingly referenced Grice's work. Finally, using a "feature" analysis, the coder assigns a best-fitting organized classification and associated subclassification, even if the text will later be found primarily unresolved or even unclassifiable.

Scales Estimating a Speaker's Probable Experiences with Each Parent during Childhood

A nine-point continuous scale is provided for "loving behavior" described as occurring during childhood (not to be confused with the speaker's love for the parent or unsupported statements that the parent was loving). Evidence of four kinds of unloving behavior is also assessed (rejecting of the child's attachment; role-inverting/heightening of attachment, or, at the high end, demanding of care; neglecting; and pressuring to achieve). Every other point of each scale (i.e., 1, 3, 5, 7, and 9) is well defined, and each scale includes a lengthy introduction explaining what is meant by the construct. As is obvious, the higher the scores for inferred negative experiences, the necessarily lower are the scores for loving. Finally, the coder selecting the score may assign a score far different from that which the speaker might have assigned—a fact most obvious when the speaker has provided extremely positive adjectives for the relationship with the mother during childhood, but when asked what the speaker did when hurt or upset during childhood has responded, "I hid. Once I had a broken arm that hurt a lot, but I didn't tell my mother; she would have been so angry." The form taken by the five scales resembles that of Ainsworth and colleagues' (1978) four "sensitivity" scales (available on Everett Waters's website, *www.johnbowlby.com*): a long, well worked-out introduction followed by alternating point definitions that allow for interpolation by the coder. For each scale, behavioral examples that may be found in the transcript are offered as well.

The introduction to the "loving" scale states that no parent is expected to have been perfect—a point made in all of Ainsworth and colleagues' (1978) "maternal sensitivity" scales. A 9 can be assigned to a parent who "fell apart" and ignored the speaker for a few weeks when a sibling was ill or injured, had a brief bout of substance abuse, failed to attend an important ceremony, or even slapped the speaker in the face during early adolescence. At the opposite end, a 1 can be assigned to a parent who provided well for the child materially and academically, saw to it that the child's life was organized and attended to by others, and attended school meetings, if the parent was also emotionally unavailable throughout the speaker's lifetime. A score of 3 is assigned for "operational" or "instrumental" attention or assistance, such as consistently driving the child to school and helping occasionally with hobbies or homework. A list of behavioral indices of actively loving behavior, such as consistent reliable physical expressions of affection, forgiving wrongdoing, or taking the child's part with peers or teachers is provided, and a score of 5 is assigned when some of these are present in mild form. Five is considered adequately loving behavior. For scores of 7, indices such as the above are definitively present.

Scales Delineating a Speaker's State of Mind with Respect to Attachment

Once a coder has scored the five scales for loving and unloving behavior, he or she moves to scoring the speaker on eight scales describing state of mind with respect to attachment. Correct scores on the state-of-mind scales cannot be assigned without careful prior assignment of scores for experience. For example, the extent to which the childhood relationship with the mother is "idealized" in the speaker's descriptions and evaluations cannot be determined until the coder has decided how "loving" she probably was.

However, the eventual assignment to an overall organized state of mind with respect to attachment will have no further dependence on the speaker's probable experiences with the parents during childhood. This should be clear from the fact that speakers with unfavorable childhoods can be readily assigned to the secure-autonomous category, based on the coherence of their text. Similarly, although perhaps less frequently, a speaker with favorable experiences of childhood parenting may be incoherent during the AAI directly following a traumatic loss or a major first separation from parents at college entrance, and hence may be assigned to an insecure organized AAI category.

In sum, the assignment of a speaker to any given organized category depends on scores on the continuous scales identifying states of mind with respect to attachment, and a feature analysis that follows upon it, rather than on the scales for inferred childhood experiences of parenting. The general criteria for assignment to the state-of-mind scales are displayed in Table 25.2.

Although I will soon attend to the striking associations between the original state-of-mind scales and Grice's (1975, 1989) maxims, here I briefly take a historical approach and consider our

TABLE 25.2. "State-of-Mind" Scales Used in the AAI, Related to the Three Major Categories

Scales associated with the secure-autonomous adult attachment category

Coherence 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).

Metacognitive monitoring (scale presently under development). 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). This scale is included here because it does identify one of the principal aspects of speech found in secure-autonomous speakers; however, the scale needs further work at present, since criteria for high scores are overly stringent, leading to insufficient range.

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 the inability to recall his or her childhood, especially as this insistence is used to block further queries or discourse. The scale focuses on 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. However, only 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 on close attention to the form of the discourse in which anger toward 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 on 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.

early definitions and findings. As is clear from Table 25.2, the scale most closely identified with adult (and infant) security from our first efforts onward has been the scale for "coherence of transcript." *Webster's New International Dictionary* (1959, p. 520) states that the term "coherence" is derived from the Latin, meaning approximately "a sticking together or uniting of parts." Elaborating on this definition, Main and Goldwyn (1998) 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. 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 (1984a, 1984b) original conceptualization of coherence—and, as mentioned earlier, this was true even before Main's first reading of Grice.

Recognizing Relations between the State-of-Mind Scales and Grice's Maxims

As noted earlier, in general, discourse is judged to be coherent when a speaker appears able to access and evaluate memories while *simultaneously* remaining plausible (consistent or implicitly truthful) and collaborative (Hesse, 1996). When the discussion and evaluation of attachment-related experiences is in fact reasonably consistent, clear, relevant, and succinct, this leads to relatively high AAI coherence scores and placement in the secure-autonomous category. Notably, from the inception of the AAI onward, scores for overall coherence of AAI transcripts have proven vital to analyses of the text and have been associated with infant security of attachment (see the description of the original Bay Area study, below).

As shown in Table 25.2, dismissing speakers had already been identified in the early Main and Goldwyn (1984a) scoring system as having high scores on "idealization of the parent(s)," which pointed to a violation of Grice's maxim of quality ("Be truthful, and have evidence for what you say"). Many dismissing speakers had also been described as excessively succinct, violating the quantity maxim by cutting short the conversational exchange with such statements as "I don't remember." These speech habits had been quantified as "insistence on lack of memory." Preoccupied speakers tended primarily to violate Grice's maxims of relevance, quantity, and manner, which can be termed the maxims of collaboration, and violation of each of these maxims is taken into consideration in the scales for "angrily preoccupied discourse" as well as "passive/vague discourse." For example, with respect to relevance and as seen in these scales, 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), whereas others became embroiled in excessively lengthy descriptions of past or current problems with parents. Some do both. Violations of manner also typify preoccupied speakers, as seen especially 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 ("dadadada"). Phenomena conforming to these violations and hence pointing to the preoccupied classification have been quantified in continuous scales identifying passivity or vagueness of discourse (manner) and involved/involving anger (relevance, quantity, and manner). (I have provided brief examples of speech typical of secure, dismissing, and preoccupied speakers earlier.)

Table 25.2 provides an overview of the present continuous scoring systems for states of mind (Main & Goldwyn, 1998; Main et al., 2003). I now return, however, to the remaining work of the AAI coder as he or she reviews the text.

As a close look at Table 25.2 will indicate, *an AAI coder's first estimate of category placement is based entirely on the configuration of the continuous scores for the state-of-mind scales.* The exact "expectable configuration" is given in the AAI scoring and classification manual, where, for example (ignoring the still-under-development metacognition scale), high scores on coherence and low scores on idealization, derogation, involved/involving anger, passivity, and insistence on lack of memory point to a secure-autonomous transcript, whereas low scores on coherence and high scores on (either or both) involved/involving anger or passivity of discourse point to a preoccupied speaker. An acceptable range for the configuration of scores is given for each AAI classification, and

coders record their first estimate of classification from these scores. Where scores point to conflicting major classifications, the coder may begin to consider the likelihood that the text is unorganized or unclassifiable. However, importantly, it is only after recording the classification(s) emerging from the configuration of state-of-mind scores (which is termed the "bottom-up" or "score-to-classification" analysis) that the coder will turn to the "top-down" or (classificatory) feature analysis of the text, as delineated below.

The Final Step in Estimating the Best-Fitting Organized State of Mind: Application of a Feature Analysis to Classify and Subclassify AAI Texts

In the final step of interview analysis, a coder determines the applicability of all features associated with each major classification (and subclassification) to the transcript in hand. Insofar as possible, this step is carried forward independently of the continuous scores assigned to the scales for states of mind. Table 25.3 elaborates (1) scale score configurations; (2) Gricean discourse characteristics; and (3) some of the features that point to particular AAI classifications. It also presents the associated infant Strange Situation classifications.

For reasons of space, I do not elaborate on the particular features pointing to each of the three organized classifications here. Instead, examples of these features are placed in Table 25.3. In the analysis actually undertaken by coders, some of the features listed in the table are *required* for classification, whereas some are delineated as frequent correlates. In sum, features leading to a particular categorical placement, as delineated by the "top-down" analysis, should dovetail with the classification derived from the "bottom-up" configurations produced by the state-of-mind scales. If, after checking and rechecking, the classification reached by the configuration of state-of-mind scale scores (i.e., the classification suggested by the "bottom-up" analysis) continues to conflict with that arrived at by the "top-down" (feature) analysis, the coder is instructed to consider "cannot classify" as the first assignment for the transcript.

Features Delineating and Defining the 12 Subclassifications of the AAI

As the scales and features developed for the analysis of the AAI were being created, Main and Goldwyn (1984b) began to note what were at times striking differences between transcripts that had been placed in a given major classification category. Thus, for example, within the dismissing classification as a whole (which was associated with the infant avoidant classification devised by Ainsworth et al., 1978), there were four distinct subtypes of transcripts. This indicated that the AAI system differed from Ainsworth's in important ways, because her infant subclassification system contained only two subclassifications for avoidant infants (A1 and A2); these were based on the extremity of avoidance of the parent, as well as small displays of emotion (anger or distress) and even proximity seeking (soon terminated) shown by infants in the latter subcategory.

As was just noted, there are four subclassifications of dismissing adult attachment. To begin with, two types of transcripts of speakers highly dismissing of attachment—and most frequently having highly avoidant babies (A1)—were uncovered, and they differed sharply in their characteristics. In the first subtype (Ds1), speakers were highly idealizing of one or both parents, and this idealization was most frequently accompanied by moderate to strong insistence on lack of memory for childhood. In the second subtype (Ds2), rather than being idealizing of one or both parents, speakers were contemptuously derogating of one or both of them (or in some cases of attachment-related experiences, as in making fun of people who were grieving following loss). The most prevalent index of derogation was, however, attitudes expressed toward the parents that involved discarding them as without value and unworthy of consideration, or indeed of more than brief conversational consideration (e.g., "My mother was just a bitch. So, so much for her. Our next question?"). Although some insistence on lack of memory for childhood was possible for speakers in this subclassification, speakers could be placed in this relatively rare subcategory without insisting on lack of memory. It is probably not surprising that speakers in both subclassifications tended to have highly avoidant babies, because—albeit in differing ways—dismissal of attachment was equally strong.

Transcripts were assigned to the Ds3 (moderately dismissing) classification when idealization and lack of memory were marked but not necessarily extreme. At the level of features, these transcripts had another characteristic not present in Ds1 transcripts. Although expressions of hurt were usually absent, some resentment could be expressed; however, it was usually withdrawn and

TABLE 25.3. Scale Score Configurations, Feature Analyses, and Their Relations to the Organized Categories of Infant Strange Situation Behavior

Adult states of mind with respect to attachment

Secure-autonomous (F): Predictive of secure (B) Strange Situation behavior

Scale score configuration. Moderate to high scores for coherence. Low to low moderate scores on scales indicative of insecure states of mind.

Discourse characteristics. Coherent, collaborative discourse. Descriptions and evaluations of attachment-related experiences and their effects are reasonably consistent, whether the experiences appear to have been favorable or unfavorable. Discourse does not notably violate any of Grice's maxims.

Features predominating with respect to attitudes toward attachment. Avows missing, needing, and depending on others. Seems open and "free to explore" interview topic, indicating a ready flexibility of attention. States that attachment-related experiences have affected his or her development and functioning. Seems at ease with imperfections in the self. Explicit or implicit forgiveness of or compassion for parents. Can flexibly change view of person or event, even while interview is in progress, suggesting autonomy and ultimate objectivity. Sense of balance, proportion, or humor. Ruefully cites untoward flawed behavior of self, as appearing at times despite conscious intentions or efforts.

Dismissing (Ds): Predictive of avoidant (A) Strange Situation behavior

Scale score configuration. Low scores on coherence; high scores on idealization or derogation of one or both parents, often accompanied by high scores on insistence on lack of memory for childhood.

Discourse characteristics. Not coherent. Violates the maxim of quality (consistency/truthfulness), in that positive generalized representations of history are unsupported or actively contradicted by episodes recounted. Violates the maxim of quantity—either via repeated insistence on absence of memory; or via brief contemptuous derogation of, or active contemptuous refusal to discuss, a particular event or figure.

Features predominating with respect to attitudes toward attachment. Self positively described as being strong, independent, or normal. Little or no articulation of hurt, distress, or feelings of needing or depending on others. Minimizes or downplays descriptions of negative experiences; may interpret such experiences positively, in that they have made the self stronger. May emphasize fun or activities with parents, or presents and other material objects. Attention is inflexibly focused away from discussion of attachment history and/or its implications: Responses are abstract and/or seem remote from present or remembered feelings or memories, and topic of interview seems foreign. May express contempt for other person(s), or, relatedly, for events usually considered sorrowful (e.g., loss or funerals).

Preoccupied (E): Predictive of resistant/ambivalent Strange Situation behavior

Scale score configuration. Low scores for coherence; high scores for either passive or angry preoccupation with experiences of being parented (rarely, preoccupied with frightening experiences).

Discourse characteristics. Violates manner, quantity, and/or relevance, while quality/truthfulness may not be violated. In regard to quantity, sentences or conversational turns taken are often excessively long. In regard to manner, responses may be grammatically entangled or filled with vague usages ("dadadada," "and that"). In regard to relevance, the present may be brought into responses to queries regarding the past (or vice versa), or persons or events not the objects of inquiry may be brought into the discussion.

Features predominating with respect to attitudes toward attachment. Responses to interview are persistently closely and inflexibly tied to experiences with and influences of the parents, even when these are not the objects of inquiry. May attempt to involve the interviewer in agreement regarding parents' faults; may seem to weakly, confusedly praise parents, but with oscillations suggestive of ambivalence; and/or (rare) may relate frightening experiences involving them. Topic of interview is addressed, but seems inflexible and closed so that interview responses may seem memorized or unconsciously guided, as if the attachment-related history is "an old story." Unbalanced, excessive blaming of either parents or self. Indecisive—for example, evaluative oscillations ("Great mother. Well, not really, actually pretty awful. No, I mean actually, really good mother, except when she ... "). May be unusually psychologically oriented, offering authoritative "insights" into motives of self or others. The lexicon of "pop" psychology may appear with excessive frequency.

Infant Strange Situation behavior

Secure (B)

Flexibility of attention: Explores or plays in parent's presence, changes attentional focus to parent on at least one separation, and seeks parent during at least one reunion. In preseparation episodes, explores room and toys with interest, with occasional returns to or checks with parent ("secure-base phenomenon"). Shows signs of missing parent during separation, often crying by the second separation. Greets parent actively, usually initiating physical contact. Usually some contact maintaining by second reunion, but then settles and returns to play.

(continued)

TABLE 25.3. *(continued)*

Avoidant (A)

Little flexibility of attention: Focuses on toys or environment, and away from parent, whether present, departing, or returning. Explores toys, objects, and room throughout the procedure. 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, distress, or expression of anger. Response to parent appears unemotional. Focuses on toys or environment throughout procedure.

Resistant or ambivalent (C)

Little flexibility of attention: Focuses on parent throughout much or all of procedure; little or no focus on toys or environment. May be wary or distressed even prior to separation. 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. Signs of anger toward parent are mixed with efforts to make contact, or are markedly weak. Fails to return to exploration after reunion, as well as during separation and often preseparation as well (i.e., preoccupied by parent, does not explore).

Note. Descriptions of the adult attachment classification system are summarized from Main et al. (1985) and from Main et al. (2003). Descriptions of infant A, B, and C categories are summarized from Ainsworth et al. (1978).

accompanied by a positive reaffirmation of either parental excellence or a statement indicating that the experience just described had only made the speaker stronger. These speakers generally had A2 (only moderately avoidant) babies.

A fourth subclassification of the dismissing classification (Ds4) was very rare, but it was assigned when speakers showed extreme prospective fear of the death of the child with whom they had been observed in the Strange Situation, but were unable to trace this fear to any particular previous experience (such as loss of a previous child, or indeed any loss or illness experienced by family or friends more generally). These speakers were not necessarily either idealizing or contemptuously derogating, and insistence on absence of memory for childhood may not have been present. Nonetheless, their infants were avoidant of them in the Strange Situation in the original Bay Area study, and to my knowledge they have continued to be found avoidant in succeeding samples. It is not yet known whether their offspring will be more frequently classified as A1 or A2 in the Strange Situation.

Five subclassifications of the AAI were developed for secure-autonomous parents. Four corresponded well to the four subclassifications that Ainsworth had developed for secure infants. Prototypically secure (F3) parents—those who were the most coherent and who fit the majority of the features associated with the category—tended to have prototypically secure (B3) babies. However, so did parents who seemed somewhat conflicted or resentful (mildly angrily preoccupied) regarding their parents, yet (often somewhat humorously) accepted that anger and involvement had characterized their relationship with their parents and would probably continue to do so. The parents of secure but mildly avoidant babies (B1 and B2) tended to qualify for the secure category in general, but this was accompanied by some signs of dismissal (differing for the F1 parents of B1 babies and the F2 parents of B2 babies). The parents of secure but mildly preoccupied babies (B4) tended to be slightly preoccupied with their own parents or attachment-related experiences.

Finally, three subclassifications were developed for the parents of resistant/ambivalent babies, for whom Ainsworth had developed two subclassifications. These included angrily preoccupied speakers (E2) who were expected to have angrily preoccupied babies (C1), and passively preoccupied speakers (E1), who were expected to have passively preoccupied babies (C2). In addition, a third subclassification, E3, *fearfully* preoccupied, was developed. Interestingly, it was used to discriminate just 1 of the 103 Bay Area transcripts, but it has since been found to be predominant in a study of patients with borderline personality disorder (Patrick, Hobson, Castle, Howard, & Maughan, 1994).

The Unresolved/Disorganized and Cannot Classify Categories: Local and Global Breakdowns in Discourse Strategy

The unresolved/disorganized (U/d) and cannot classify (CC) categories (see Table 25.4) were delineated only some years following the inception of the AAI, most likely because their subtlety

and complexity could not be recognized until a firm grounding in the three organized categories had been established. Thus it seems likely that, as is generally true with taxonomic endeavors, an awareness of these "exceptions to the rule" were revealed in systematic ways only after much experience with the more basic entity under consideration had been acquired. The first of these two categories to be discovered was the unresolved/disorganized group.

Delineating and Refining the Unresolved/Disorganized Attachment Category

Main and Goldwyn had informally noted as early as 1984 that the parents of disorganized/disoriented infants often spoke in unusual ways about loss experiences. 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 (see Shaver & Fraley, Chapter 3, 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 became increasingly clear that what the parents of disorganized infants had in common were various indications of what was ultimately termed "lapses in the monitoring of reasoning or discourse" during discussions of potentially traumatic experiences (Hesse & Main, 1999, 2000). 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 (discovered later) other potentially traumatic events (see Table 25.4). Such discourse/reasoning lapses are 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, 2006; Hesse & van IJzendoorn, 1998, 1999).

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, 1998, 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 indicate the existence of incompatible belief and memory systems, which, normally 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, or even partially dissociated states of mind (Hesse, 1996; Hesse & Main, 2006; Hesse & van IJzendoorn, 1999). 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 detail. (In addition, albeit extremely rarely, individuals can also be assigned to the unresolved/disorganized category on the basis of reports of extreme and probably dissociative responses to traumatic events, which are not explained despite persistent interviewer probes.)

Both state shifts and the sudden appearance of incompatible ideas suggest momentary but qualitative changes in consciousness. Thus they appear to represent temporary/local as opposed to global breakdowns in the speaker's discourse strategy. Discourse/reasoning lapses of the kinds just described often occur in high-functioning individuals and are normally not representative of such a 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).

Early discoveries regarding the relation between secure, dismissing, and preoccupied parental AAI status and secure, avoidant, and resistant/

TABLE 25.4. Scale Scores, Discourse Characteristics, and Features Associated with the Disorganized and Unorganized/"Cannot Classify" Categories of the AAI, and Corresponding Infant Strange Situation Categories

Adult states of mind with respect to attachment
Unresolved/disorganized (U)
Scale scores. Scores above 5 on either unresolved loss or unresolved abuse (the distinctions between these are retained) lead to category placement. At scale point 5, the coder must decide whether or not the transcript fits the unresolved/disorganized classification.
Discourse characteristics. 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.
Features predominating with respect to attitudes toward attachment. No particular features beyond lapse. May fit the descriptors for Ds, E, or F.
Unorganized/"cannot classify" (CC)
Scale score configuration. Scale scores may point to contradictory insecure classifications (e.g., strong idealizing and strong involved/involving anger are seen within the same transcript) as in the "original" form of CC. Alternately, all state-of-mind scores are low, none moving fully to midlevel (e.g., below midpoint for all scores indicative of insecure states of mind, as well as for coherence; see Hesse, 1996). Finally, some CC texts cannot be determined by scale scores, and rely on the use of feature analysis (Main et al., 2003).
Discourse characteristics. The early "contradictory strategies" discourse forms seen in CC texts are described below. In newer forms of CC, violations of Grice's maxims do not necessarily take the forms ordinarily seen in insecure speakers. Coherence violations are not necessarily limited to particular locations in the text, or particular persons or events. In rare and extreme cases, the transcript as a whole may be so incoherent as to be difficult to follow.
Features. In the "original" form of CC, features sufficient to fit the text to two directly contrasting classifications (e.g., dismissing and preoccupied) are observable. In one newer form of CC (Main et al., 2003), the transcript is incoherent without elevated scores for insecure states of mind. Transcripts may also now be considered unclassifiable if (a) the speaker seems to attempt to frighten the listener (e.g., with the sudden, unintroduced, detailed discussion of a murder) or (b) refuses to speak during the interview, without responding that memories are unavailable or are too painful to discuss. Finally, transcripts are considered unclassifiable if they seem to fit equally well to both a secure and insecure classification (e.g., CC/Ds/F or CC/F/E).
Infant Strange Situation behaviors
Disorganized/disoriented (D)
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. At 6 years of age, previously disorganized infants in several samples have been found to be role-inverting or "disorganized/controlling" with the parent, being either punitive or caregiving/solicitous.
Cannot classify (CC)
The infant displays aspects of more than one classification, without necessarily being primarily or even notably otherwise disorganized/disoriented. For example, the infant may fit well to the avoidant category on the first reunion, and to the resistant category on the second. Alternately, the infant's Strange Situation behavior may be so diffuse throughout the procedure that it cannot via any single reunion or separation response be found to fit to any single category.

Note. Descriptions of the U and CC categories of the adult attachment classification system are summarized from Hesse and Main (2000) and from Main et al. (2003). The description of the infant D category is summarized from Main and Solomon (1990); the description of the child D category is based on Main and Cassidy (1988); and the still new infant/child CC category has been utilized in publications by Abrams et al. (2006) and Behrens et al. (2007).

ambivalent infant attachment status have already been recounted. The next discovery regarding the AAI (Main & Hesse, 1990) was based on the simultaneous breakthrough reported by Main and Solomon (1986, 1990) that a fourth Strange Situation classification—disorganized/disoriented—could now be recognized. Infants were placed in this fourth category (see Lyons-Ruth & Jacobvitz, Chapter 28, and Solomon & George, Chapter 18, this volume) when they failed to maintain the behavioral organization characteristic of those classified as secure, avoidant, or ambivalent/resistant. Although this failure to maintain organization had previously been described as Strange Situation "unclassifiability" by Main and Weston (1981), by 1990 infants were termed disorganized/disoriented in the Strange Situation when, for example, they approached the parent with head averted, put hand to mouth in a gesture indicative of apprehension immediately upon reunion, or rose to approach the parent and then fell prone to the floor. Infants were also labeled disorganized/disoriented if they froze all movement with arms elevated, or held still for many seconds while exhibiting a trance-like expression. Disorganized attachment has now been observed in the majority of infants in maltreatment samples (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Lyons-Ruth, Connell, Zoll, & Stahl, 1987). And in low-risk samples it has been associated with both externalizing and internalizing disorders (e.g., Solomon, George, & De Jong, 1995).

By 1990, it had been shown that unresolved AAI status in a parent was predictive of disorganized attachment in the infant (Main & Hesse, 1990; see Table 25.4). Specifically, we found that in a subsample of 53 mothers and infants drawn from the original Bay Area study, only 16% (3 of 19) of mothers showing no significant discourse/reasoning lapses had disorganized infants, whereas 91% (11 of 12) of adults with marked lapses (unresolved mothers) had infants who had been judged disorganized with them in the Strange Situation 5 years earlier. Thus there was now an AAI category corresponding to and predictive of each of the four Strange Situation categories in use at the time. Since this original study, 9-point scales for both indices of unresolved loss and abuse (e.g., Main et al., 2003), and similar 9-point scales for scoring infant disorganized behavior, have been developed. A recent analysis of an available subset (n = 36) drawn from the same Bay Area sample has shown a significant correlation between parental lapses of monitoring in the AAI and infant disorganization (phi = .56, $p < .001$; Abrams, Rifkin, & Hesse, 2006).

Emergence of the Cannot Classify Adult Attachment Category

As mentioned earlier, a fifth interview category, "cannot classify" (CC), emerged in the early 1990s as Main and I began noticing 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 or both of the parents led to a relatively high idealization score, whereas in direct contradiction to the expected global patterning, highly angrily preoccupied speech was also found. Thus the high idealization score called for placement in the dismissing category, whereas other portions of the transcript called for preoccupied category placement. Main and I (see Hesse, 1996) therefore concluded that these transcripts were unclassifiable and should be placed in a separate group. Because both this "contradictory strategies CC" and the remaining CC subtypes (see below) involve low coherence, they are necessarily defined as insecure.

Although a second CC subtype was mentioned in journal articles as early as 1996 (see, e.g., Behrens et al., 2007; Minde & Hesse, 1996), this and several other CC subtypes have only recently been added to the AAI scoring and classification manual and—given new guidelines (Main et al., 2003)—have come into use by advanced coders. Among the four new subtypes, there is one in which the coder finds coherence low (i.e., the narrative does not form a "coherent whole"), while scale scores indicative of an insecure state of mind are all too low for placement in either of the two organized insecure categories (dismissing or preoccupied). Hence this type of "low-coherence CC" text is both globally incoherent and unorganized. Put another way, the speaker appears to lack a strategy for handling the discourse task, but does not show it in a way that can be quantified by state-of-mind scores indicative of mixed or multiple states. Transcripts of this kind, like the original "contradictory strategies CC" texts, predict disorganized and unclassifiable offspring.

The additional CC subtypes have been delineated largely in highly troubled (e.g., forensic) adult samples, but have yet to be identified in par-

ents for comparison with offspring attachment status. Space limitations prohibit elaboration here, but some kinds of discourse that can render a transcript unclassifiable are briefly referenced in Table 25.4. It should be noted as well that close reviews of particular cases involving Holocaust survivors have led Koren-Karie, Sagi-Schwartz, and Joels (2003) and Sagi-Schwartz, Koren-Karie, and Joels (2003) to consider other individual transcripts that fail to fit the organized (or even the present unresolved) categories. Stressing more specific difficulties with non-normative samples, Turton, McGauley, Marin-Avellan, and Hughes (2001) have found, for example, that *self*-derogation is sometimes seen in forensic samples.

A present difficulty with the cannot classify category is that although it is known to appear most frequently in highly troubled populations, it has not been subjected to even the most basic psychometric testing (e.g., for stability). This means that, even assuming that CC itself is stable (which, again, remains to be tested), what is currently seen as falling into a given subtype at time 1 might easily fall into another subtype at time 2. If so, there is a precedent for this in the infant literature, where (to the best of my knowledge and despite efforts in several laboratories) no subtypes of the infant D category have been identified and found stable. Thus—in parallel to infant D attachment status in the Strange Situation—CC status on the AAI may simply mean that there is no underlying, uninterrupted, and "singular" organization to the text. Nonetheless, this of course suggests an anomalous state of mind.

EMPIRICAL STUDIES INVOLVING THE AAI

This section begins with a review of findings based on the AAI that were already established by 1998. I open with a discussion of Main and Goldwyn's original (1988, 2008) parent–infant study, which differs from most succeeding studies in its emphasis on AAI state-of-mind scale scores (a direction to which the field may now be returning; see Roisman, Fraley, & Belsky, 2007) and subclassifications (as were found again matched to child subclassifications in a 2007 study by Behrens et al., conducted in Japan). I then review studies in four now-classic areas of AAI investigation, including the psychometric properties of the instrument, parent-to-offspring matches, caregiving correlates, and clinical populations. The field continues to grow in these four "established" areas, so I mention some recent studies as well. In a separate section, I discuss what, due to space limitations, can unfortunately be only a representative sampling of the many important studies published since the first edition of this chapter (Hesse, 1999) appeared.

Early Findings and Well-Established Findings Updated

The Bay Area Study: Linking Parental AAI Responses to Infant Attachment Status

The initial Bay Area study establishing relations between parental AAIs and infant Strange Situation responses to the speaker 5 years earlier involved 32 mothers and 35 fathers and was conducted by Main and Goldwyn (1988, 2008;[9] see also Main et al., 1985; Main & Goldwyn, 1984b). In this randomly selected sample of 67 dyads (sample sizes varied slightly across analyses), 48% of parents were classified as secure, 39% as dismissing, and 13% as preoccupied. The central findings were not only the correspondence between the three then-existing organized states of mind with respect to attachment as seen in a parent's AAI and the infant's response to that parent in the Strange Situation, but also the significant match found between adult and infant subclassifications, and matches between parental state-of-mind scores and continuous dimensions of the infant's Strange Situation response. At the time the AAI texts were analyzed (1982), the infant disorganized/disoriented attachment category (Main & Solomon, 1986, 1990) had yet to be developed, and anomalous Strange Situation behavior was termed "unclassifiable" (Main & Weston, 1981). All unclassifiable infants in this study were moved to their best-fitting organized classification for purposes of analysis. A single coder who was unaware of infant Strange Situation behavior (R. Goldwyn) worked through all interviews, and interjudge agreement with two undergraduate coders was high.

- *Transcripts of interviews with the parents of children who had been secure with them in the Strange Situation 5 years before.* Infant Strange Situation security was assessed with a 3-point scale, where very secure (B3) infants scored a 3, and insecure infants a 1. With respect to scores for the then-existing state-of-mind scales (new scales were later devised), the strongest correlate of infant security

of attachment for both mothers and fathers, as predicted, was the coherence observed in the AAI text overall (r = .48 for mothers, r = .53 for fathers). When Strange Situation as well as state-of-mind classifications were used, a majority of parents of both sexes were matched to their infants in terms of secure versus insecure attachment status. The effect size was d = 1.50 for mother–infant dyads (d = 0.80 marks a strong effect) and d = 0.78 for fathers. Interestingly, the authors reported that 3 of the 18 infants (17%) secure with their mothers had mothers for whom both parents received scores below a 3 on the loving scale. For fathers, there was no significant relation between infant security and either of his parents' loving scores on the AAI, and both parents of one father whose infant was judged secure with him in the Strange Situation had loving scores of 1.

- *Transcripts of interviews with the parents of children who had been avoidant of them in the Strange Situation 5 years before.* To explore relations between infant avoidance and parental state-of-mind characteristics, Ainsworth and colleagues' (1978) 7-point scales for infant avoidance of proximity to the parent during the two 3-minute reunion episodes of the Strange Situation 5 years previously were used. For both mothers and fathers, their infants' avoidance of them under stress was significantly correlated with their own insistence on lack of memory for childhood (r = .41 for mothers, r = .47 for fathers). For mothers, idealization of their own mothers (r = .47) and fathers (r = .43) was significantly related to their infants' avoidance of them. For fathers, relations between infant avoidance in the Strange Situation and idealization of both their mothers (r = .53) and their fathers (r = .64) were even stronger.[10] At the level of classifications, the effect sizes for the relation between parental dismissing classification and infant avoidant classification in this sample were d = 1.22 for mothers and d = 0.68 for fathers.

- *Transcripts of interviews with the parents of children who had been resistant with them in the Strange Situation 5 years before.* Scores for infant resistance to the parent on reunion in the Strange Situation were expected to be correlated with the parent's preoccupied anger toward his or her own parents. For the mother–infant sample (six infants were classified as resistant), preoccupied anger expressed in the AAI regarding both the mother's mother (r = .56) and father (r = .47) was significantly related to the infants' angry resistance 5 years earlier. Only two infants were resistant with their fathers, and the comparable father–infant correlations were not significant.

Transcripts taken from the parents of resistant infants had most commonly been judged preoccupied. Two of the infants of the three preoccupied fathers had been resistant, as were five of the infants of the six preoccupied mothers. The effect size linking maternal preoccupied attachment status to the infant resistant/ambivalent classification was d = 1.75, whereas the link between paternal preoccupied attachment status and infant resistant attachment was d = 1.08.

The observed three-way agreement between AAI status and infant Strange Situation behavior for mother–infant dyads was 75%, whereas the agreement expected by chance was 37% (kappa = .61, $p < .001$). The three-way agreement for fathers was 69%, whereas the agreement expected by chance was 46% (kappa = .41, $p < .01$).

The match between the 12 AAI "organized" subclassifications and the 8 infant Strange Situation subclassifications was 46%, with a 17% match having been expected by chance. Here, predictions had been made in advance that, for example, both Ds1 and Ds2 interviews would be associated with A1 infant attachment status, and both F3 and F5 parents were expected to have B3 babies. This subclassification match was almost identical to that found later in Eichberg's (1989) dissertation study of middle-class mother–infant dyads (48% subclassification match, 18% expected by chance), for which Ainsworth had coded the AAI texts and her colleague Julia Green had coded the associated Strange Situations. In 2001, Pederson and Bento also found a significant subclassification to subclassification match in their study of middle-class Canadian mothers (D. R. Pederson, personal communication, 2001). Recently, in the Behrens and colleagues (2007) Sapporo sample of 39 Japanese mothers seen in the AAI and shortly thereafter in Main and Cassidy's (1988) sixth-year reunion procedure, a 49% maternal AAI subclassification to child subclassifications of reunion response was identified (24% expected by chance; kappa = .33, $p < .001$).

Psychometric Properties of the AAI

In 1996, van IJzendoorn and Bakermans-Kranenburg 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. A more recent meta-analysis published 12 years later by these same authors (van IJzendoorn & Bakermans-Kranenburg, 2008) yielded very similar proportions, despite the fact that the combined sample size was much larger (1,012 nonclinical mothers).

The 1996 meta-analysis examined five studies that included both wives and husbands (226 couples) and found a three-way correspondence comparable to a correlation of $r = .28$. This was 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, but unresolved individuals appeared to have married each other 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 in general was only weakly related to content-based retrospective parenting style measures and appeared to be independent of general personality measures (van IJzendoorn, 1995), persons classified as preoccupied have been found to report more symptoms on the Minnesota Multiphasic Personality Inventory, whereas dismissing individuals report fewer (Pianta, Egeland, & Adam, 1996).

The AAI has been subjected to a series of rigorous psychometric tests of 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), and 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 indicated that category placement could not be attributed to the influence of a particular interviewer.

Benoit and Parker (1994) found 90% three-category stability between a prebirth interview and interviews conducted at 11 months of infant age ($n = 84$). 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, Speranza, & Candelori, 1996). Recently, H. Steele and M. Steele (2007) reported striking 5-year stability in a group of 51 mothers interviewed during pregnancy and again when their children were 5 years of age. The interviews were classified by independent teams of coders, and no individuals were considered "cannot classify" at either time period. Remarkably, across the remaining four major classifications (secure-autonomous, dismissing, preoccupied, and unresolved), there was 86% stability across the 5-year period.[11]

Because of the weight given to coherence scores when AAI transcripts are being assigned to secure versus insecure attachment status, it has been important to establish that in five out of six studies conducted to date, secure versus insecure adult attachment status has been unrelated to intelligence, including assessments specific to verbal fluency (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 non-attachment-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 assessed, 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 important questions pertaining to the discriminant validity of the AAI stems

from its reliance on 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 (1996), using an Employment Experience Interview, which followed the form of the AAI protocol but focused on technical aspects of the speaker's work history. Although transcripts of the Employment Experience Interview could be reliably classified as secure-autonomous, dismissing, or preoccupied, these classifications were orthogonal to the secure-autonomous, dismissing, and preoccupied classifications assigned to the same 53 mothers based on the AAI. Thus it appears that the attachment-related content of the AAI protocol does in fact have a direct influence on the linguistic form manifested in the interview transcript.

The Link between Adult (AAI) and Child Attachment Status

Within about a decade following the publication of Main and colleagues (1985), the relations between a parent's AAI classification and his or her infant's Strange Situation classification as first uncovered in Berkeley had been well replicated, and the association between a parent's discussion of his or her own attachment history and the infant's Strange Situation behavior was found to be robust. In the immediately succeeding years, AAI-to-Strange-Situation matches were found in both high-risk samples (e.g., Bus & van IJzendoorn, 1992, based on a Dutch sample; Ward & Carlson, 1995, based on an inner-city Hispanic and African American sample) and the low-risk samples described below. By 1995, despite its origin in close study of English speech usage, a significant AAI-to-Strange-Situation match had been found in two German samples (Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1988). Again surprisingly, or so it has seemed to its authors, the AAI would later be found predictive of offspring attachment in language contexts differing from English more than do Dutch and German, such as Hebrew (Sagi et al., 1997), and Japanese (Behrens et al., 2007; Kazui, Endo, Tanaka, Sakagami, & Suganuma, 2000).

In 1995, van IJzendoorn used meta-analytic techniques to examine a total of 18 AAI samples, including 854 parent–infant pairs from six different countries. This overview revealed that when the three-way analysis was used, there was a 75% two-way correspondence between parental and offspring security—a finding that held as well when the interview was conducted prior to the birth of the first child (e.g., Benoit & Parker, 1994, in Toronto; Fonagy et al., 1991, and H. Steele, Steele, & Fonagy, 1996, in London; and Ward & Carlson, 1995, in inner-city New York). The combined effect size of the secure–insecure parent-to-infant match across samples (inclusive of mother–infant and father–infant dyads) was $d = 1.06$ ($r = .47$, biserial $r = .59$). The explained variation on the basis of r was 22%, and for biserial r it was 35%. Using a statistic devised by Rosenthal (1991), van IJzendoorn calculated that it would take 1,087 studies with null results to diminish the combined one-tailed p level to insignificance.

To return to parent-to-infant matches in van IJzendoorn's (1995) meta-analysis, the combined effect size for the match between the dismissing classification and the other classifications in predicting the infant avoidant classification was $d = 1.02$ (equivalent to $r = .45$), whereas for the match between the preoccupied classification and the infant resistant/ambivalent classification the combined effect size was $d = 0.92$ ($r = .42$). Correspondence for the three-way infant and AAI classifications across the 13 samples for which it could be calculated was 70%. It is interesting as well (van IJzendoorn's [1995] Table 2, p. 393), however, that in this analysis 82% (304/369) of secure-autonomous mothers had secure offspring, and 64% of dismissing mothers had insecure-avoidant offspring; however, only 35% of preoccupied mothers had insecure-resistant/ambivalent infants.

As noted earlier, with respect to parent–child dyads, both cannot classify and unresolved/disorganized interviews are associated with the disorganized/disoriented infant Strange Situation classification (Main & Solomon, 1986, 1990). Both of these disorganized AAI categories have been found to predominate in clinical samples (van IJzendoorn & Bakermans-Kranenburg, 1996, 2008), and infants' disorganized attachment with their mothers has been associated with psychopathology assessed in the same individuals in young adulthood (Carlson, 1998), especially where intervening trauma was present (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997).

In his 1995 meta-analysis of nine studies including unresolved/disorganized AAI status (548 dyads), van IJzendoorn calculated $d = 0.65$

(equivalent to r = .31) for the relation between normally very brief lapses in speech during the AAI and similarly minimal disruptions in Strange Situation behavior. The fleeting and difficult-to-identify nature of both phenomena suggests that the association between adult unresolved status and infant disorganized status may have been attenuated in this calculation—not only by instability in the appearance of the phenomena, but also by the need for extensive training in identifying them. In keeping with this line of reasoning, van IJzendoorn found that amount of training was very strongly related to differences in effect sizes (z = 5.59, p = 1.30E-08) linking unresolved/disorganized and unclassifiable AAI texts to infant disorganization, with less training being associated with smaller effects. For example, the effect size relating unresolved AAI status in 45 mothers to infant disorganized attachment status for Ainsworth and Eichberg's (1991) study (with AAIs coded by Ainsworth following reliability training across 50 AAI transcripts, and Strange Situations coded by N. Kaplan and D. Weston following training across 75 Strange Situations) was d = 2.32. As a more recent example, in Behrens and colleagues' (2007) study of 43 mother–child dyads in Japan, the AAI coder (K. Behrens) had attended two training institutes and assisted Japanese participants in a third, and experts (E. Hesse and M. Main) in the sixth-year system of reunion classifications (Main & Cassidy, 1988) coded child reunion behavior; the effect size was d = 1.50 (equivalent to r = .60) for relations between mothers' unresolved or cannot classify AAI status and children's disorganized/cannot classify status.

One illustration of a study relating maternal unresolved/disorganized status to infant disorganized status may be provided (Hughes et al., 2001). This study focused on the effects of stillbirth of a first infant upon Strange Situation disorganization when mothers (N = 53) were seen in the Strange Situation with their next-born infant. The coder for infant attachment status for this study had attended two full Strange Situation training institutes, and the overall association between unresolved/disorganized status for the stillborn child and disorganized attachment in the following offspring was r = .50 (p < .0001). Interestingly, all the variability in disorganization associated with the stillbirth itself could be accounted for by maternal unresolved AAI status, and the association between stillbirth experience and disorganization in the next infant was not significant once unresolved maternal attachment was included in the model.

The Link between AAI Status and Caregiving

The association between infant security versus insecurity with the mother and maternal sensitivity to infant signals and communications was first discovered by Ainsworth and colleagues (Ainsworth, Bell, & Stayton, 1971; Ainsworth et al., 1978) and was based on a highly detailed scale for assessing this construct on the basis of narrative records taken from 12 hours of infant–mother observation in the home. Later studies have also assessed positive versus negative aspects of maternal responsiveness to offspring, but have often used videotaped observations lasting well under an hour and an array of at least 54 different measures. Despite these limitations, a meta-analysis recomputing the overall relation between maternal sensitivity and infant security has shown a continuing modest link (for 1,099 studies, r = .24; De Wolff & van IJzendoorn, 1997; see Belsky & Fearon, Chapter 13, this volume).

Since secure-autonomous parents typically have secure infants, as indicated above, they should also be especially sensitive and responsive to their infants—a point established early on by several investigators using the AAI (e.g., Haft & Slade, 1989). By 1995, van IJzendoorn's meta-analytic overview demonstrated that across studies, secure-autonomous parents were more responsive to their infants than were parents whose AAI texts had been judged dismissing or preoccupied. The combined effect size linking parental security to parental responsiveness[12] was 0.72 (r = .34), and it was determined that it would take more than 155 studies with null results to bring the p value to insignificance. It should be noted once again, however, that by this time assessments of parental responsiveness included many variables other than Ainsworth's (Ainsworth et al., 1978; see also *www.johnbowlby.com*) traditional sensitivity ratings, such as anxiety, connectedness, support with drawings, and "warmth," a parental variable that Ainsworth had twice established was unrelated to infant security[13] (Ainsworth, 1967; see also Main, 1999). Considered as a whole, these responsiveness assessments provided only a partial explanation of the relation between secure versus insecure parental attachment status and secure versus insecure infant attachment. This notably partial mediation led van IJzendoorn (1995) to point to the possibility of a "transmission gap" between adult and infant security—meaning that the kinds of behavior toward offspring that differentiated parents with secure-autonomous transcripts from others, and led to infant security, had yet to be fully identified.

Unresolved/Disorganized States of Mind and Frightening/Disruptive Behavior toward Offspring. In 1990, Main and I put forward the hypothesis that parents judged unresolved/disorganized on the AAI would exhibit frightened, frightening, and/or dissociative behavior toward their offspring. Our thinking was that if lapses in the monitoring of reasoning or discourse surrounding potentially traumatic events during the AAI occurred in conjunction with intrusions from partially dissociated frightening ideation associated with the event in question (Hesse & Main, 1999, 2006), such intrusions could also occur during interactions with an infant. The classic manifestations of primitive fear include attack, flight, and freezing—behaviors according well with the proposal that frightening (attack), frightened (flight), or directly dissociative (such as trance-like freezing) reactions might be found in unresolved/disorganized parents. A coding system identifying frightened/frightening/dissociative (FR) behavior (Main & Hesse, 1991, 1998) was therefore developed, along with a broader system identifying parental disruptive behaviors more generally (see Lyons-Ruth, Bronfman, & Parsons, 1999). Unresolved status on the AAI has now been found to predict these forms of parental behavior in several independent samples (e.g., Abrams et al., 2006; Lyons-Ruth et al., 1999; Madigan, Moran, & Pederson, 2006; see also Madigan, Bakermans-Kranenburg, et al., 2006). However, in a pioneering study of 80 dyads conducted by Schuengel, Bakermans-Kranenburg, and van IJzendoorn (1999) in the Netherlands, substantially frightening parental behavior was linked to infant disorganization only if an unresolved/disorganized mother had a secondary classification as insecure. This suggested to the authors that an underlying secure-autonomous state of mind might be protective in the context of unresolved status.

Jacobvitz and colleagues (2006) partially replicated the "protective effect" found in Schuengel and colleagues' (1999) study, as would Heinicke and colleagues (2006) in an intervention study several years later. In Jacobvitz's study, 116 prospective first-time mothers were administered the AAI during pregnancy, and they were videotaped at 8 months of infant age in their homes. Women classified as unresolved/disorganized with respect to loss and/or abuse displayed substantially higher levels of FR behavior during these interactions than did other mothers, including extended trance-like stilling and anomalous aggressive actions. However, in keeping with the Dutch study, levels of FR behavior were lower if a mother's underlying AAI classification was secure. Unresolved/disorganized responses to loss in the AAI fully mediated the association between loss of an attachment figure other than the parent and FR behavior, and it partially mediated the relation between loss of a parent and FR behavior.

Main and Hesse (1990) had also put forward the hypothesis that parental FR behavior would mediate the relation between unresolved/disorganized lapses in speech in the AAI and infant disorganized/disoriented behavior in the Strange Situation. This would naturally be difficult to test, since, as I have already shown, there is a strong relation between the amount of training investigators have had in coding unresolved adult and disorganized infant attachment status and the effect sizes obtained in attempts to link these phenomena. Frightened, frightening, and dissociative responses, as well as more generally disruptive parental behaviors, are as fleeting as disorganized behavior in the Strange Situation—and, as noted above, the Schuengel and colleagues (1999) study had found that FR behavior mediated the relation only when the unresolved/disorganized mothers were also insecure.

Given the fleeting nature of all three phenomena (i.e., lapses in the monitoring of speech or reasoning during the AAI, frightened/frightening/dissociative behavior in parents, and infant disorganized/disoriented behavior), however, it is striking that a first meta-analysis of five samples testing the Main–Hesse hypothesis and using investigators at differing levels of training found even a partial (although still incomplete) mediation in which 42% of the variance was accounted for (Madigan, Bakermans-Kranenburg, et al., 2006). More recently, Canadian coders highly trained in the Main–Hesse system for assessing parental FR behavior found that maternal FR behavior accounted for over 50% of the variance in the association between maternal unresolved attachment status on the AAI and infant disorganized Strange Situation behavior (Evans, 2008).

Studies Comparing AAI Classifications in Clinical and Nonclinical Populations

As already explained, the central categories of the AAI were developed and refined in the mid-1980s with respect to a 1-year-old's (secure vs. insecure) response to the speaker in a stressful situation. It is therefore surprising that—without adjustment—this system was later shown to discriminate be-

tween clinical and nonclinical populations (van IJzendoorn & Bakermans-Kranenburg, 1996, 2008). However, in 1996 van IJzendoorn and Bakermans-Kranenburg showed that the effect size discriminating clinical from nonclinical populations (d = 1.03) was virtually identical to that discriminating the parents of secure infants from the parents of insecure infants (d = 1.06). Ultimately, in a four-way analysis (secure-autonomous, dismissing, preoccupied, unresolved/cannot classify), only 8% of members of clinical samples were judged secure. (I should note that "clinical samples" as used here indicates persons with specific diagnoses, not those simply in psychotherapy.)

By the mid-1990s, many studies of clinically distressed adolescents and adults had been conducted, and the predominance of the unresolved/disorganized (as well as the preoccupied) classification was striking. For example, a study of 24 closely comparable female subjects (12 with borderline personality disorder and 12 with dysthymia, none comorbid) was conducted at the Tavistock Clinic, using a coder who was unaware of either participants' diagnoses or the aims of the investigation (Patrick et al., 1994). Borderline patients were selected for having met at least seven of the eight *Diagnostic and Statistical Manual of Mental Disorders*, third edition, revised (DSM-III-R; American Psychiatric Association, 1987) criteria. All of the 12 borderline patients—but only 4 of the dysthymic patients—were classified as preoccupied (Fisher's exact test, two-tailed; p = .001). Moreover, 10 of the 12 borderline patients were classified into the E3 AAI subcategory, described earlier. The overall rates of experiences of trauma and loss as defined in AAI manuals 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 with only 2 of the 10 dysthymic patients reporting loss or trauma (Fisher's exact test, two-tailed; p = .0007).

Fonagy and colleagues (1996) undertook a large 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 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, Hood, and Swinson (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 again 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 E3.

A different and highly informative investigation was conducted by administering the AAI to 66 young adults (mean age = 26 years) who had been hospitalized 11 years earlier in adolescence, together with 76 matched (nonhospitalized) controls (Allen, Hauser, & Borman-Spurrell, 1996). Both groups came from upper-middle-class families, and individuals suffering from psychosis or organic impairment were excluded from the hospitalized sample. Any information that could provide evidence of previous hospitalization was removed from the transcripts, so that the coder (this author) successfully remained unaware of group status. The proportion of secure-autonomous transcripts among individuals hospitalized 11 years earlier (7.6%) was exceptionally low. Moreover, the interview transcripts of 25.8% of the hospitalized group were judged cannot classify, as compared with 6.6% of the comparison group. Speakers who had been hospitalized 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 state-of-mind scale for derogation was also found to be related to criminal behavior and to hard drug use. Given the success of this original study, it is perhaps not surprising that Hauser and his colleagues have recently concluded that with the development of the AAI, narrative studies have begun to come into their own in psychiatry and psychoanalysis (Hauser, Golden, & Allen, 2006).

As explained earlier, speakers are assigned to the cannot classify category whenever contradictory discourse strategies appear within the AAI. With this in mind, two early case studies are of special interest. In the first, a mother described as cannot classify (Minde & Hesse, 1996; the coder was unaware that the transcript was taken from a patient in therapy) successfully demanded to have her child removed by cesarean section 1 month early, then insisted on staying with the infant in intensive care for periods that far exceeded usual hospital practices. At later times, she was observed to alternate between periods of overinvolvement and periods of neglect. In the second, home observations of a mother judged cannot classify by Hughes and McGauley (1997) indicated marked

neglect and carelessness to a degree inviting external injury, while making alternating sudden trips to the hospital occasioned by fear of germs. In keeping with the hypothesis that discourse usage in the AAI should be predictive of caregiving, then, these two case studies of unclassifiable, contradictory discourse were reflected in contradictory behavior toward the offspring.

Recently, adolescents living in the streets of Mexico City with their infants have been described by Gojman de Millán and Millán (2008). These include two coded as cannot classify, and one—whose behavior and outcome appeared far more promising—coded as unresolved/secure. Another, new kind of case study has described a patient with both narcissistic and borderline personality disorders who was classified as both unresolved and preoccupied; she is discussed in terms of both the AAI and her therapist's views (Buchheim & Kachele, 2003). Still another set of case studies has traced change over the course of psychoanalysis, considering especially the movement from unresolved/cannot classify status to organized insecurity (Ammaniti, Dazzi, & Muscetta, 2008).

In most of the above studies, individuals diagnosed with clinical disorders have been examined for their accompanying adult attachment classifications. However, Riggs and Jacobvitz (2003) examined mental health status using varying established and newly developed questionnaires in a sample of 233 expectant mothers and fathers. Preoccupied parents were the most likely of the parents in the organized attachment categories to report suicidal ideation, whereas unresolved/disorganized parents more often reported suicidal ideation, emotional distress, and substance abuse. As expected, secure-autonomous status on the AAI was linked to mental health.

Ward, Lee, and Polan (2006) investigated a *nonclinical* New York sample of 60 adult women, who were seen in the AAI and in a diagnostic setting. Using the organized (secure-autonomous, dismissing, and preoccupied) attachment categories in the analysis, the researchers found that a majority of women with insecure attachment classifications were diagnosed with some psychopathology. However, when the unresolved category was included, unresolved participants whose alternative placement was secure-autonomous—while experiencing some difficulties with daily functioning, such as marital discord or physical symptoms—were significantly less likely to be diagnosed with psychopathology than were participants with unresolved/insecure classifications.

In a recent overview of 61 clinical samples, van IJzendoorn and Bakermans-Kranenburg (2008) used a correspondence analysis to ascertain possible patterning of AAI classifications in relation to clinical diagnoses. All clinical groups with psychiatric diagnoses tended toward insecurity, as established previously with a smaller set of samples, although clinical status in general was not related to a specific organized insecure AAI category. However, when the three-way analysis was used, individuals with borderline personality disorder and those experiencing more internalizing disorders tended toward the preoccupied classification. In contrast, for more externalizing problems and disorders, such as antisocial personality disorder and conduct disorder, there was an overrepresentation of the dismissing classification. (See also Frodi, Dernevik, Sepa, Philipson, & Bragesjö, 2003, for a study that found an unusual proportion of dismissing transcripts among incarcerated males with psychopathy.) When unresolved/disorganized and unclassifiable transcripts were taken into account in a four-way analysis, an "extremely strong" association was found with borderline personality disorder, abuse, or suicide. (See also Adshead & Bluglass, 2005, for a first study of maternal factitious illness by proxy, in which 60% of mothers were found to have unresolved transcripts.)

A new direction in clinical research using the AAI may have been established in a longitudinal study of 111 middle-class Australian mothers with postnatal depression and their infants (McMahon et al., 2006). As in previous studies, chronically depressed mothers were more likely to have infants who were insecurely attached. However, the relation between maternal depression and infant insecurity was moderated by maternal response to the AAI, with secure mothers with postpartum depression being less likely to have insecure infants.

Newer Empirical Studies

In the preceding section, on earlier AAI research, I have occasionally mentioned new studies conducted along the same lines. Here, due to space limitations, I briefly discuss a selective subset of newer studies, most of which have appeared since the first edition of this chapter (Hesse, 1999) was published. I have avoided overlap with the 1999 review insofar as possible, and the reader interested in the AAI literature as a whole will need to refer to the earlier chapter. This section can be used as

a roadmap to some of the territory into which the AAI has moved in recent years.

Applications of the AAI to New Populations

Adult Holocaust Survivors and Their Daughters Living in Israel. At the turn of the 21st century, a large study of female Holocaust survivors and their daughters was undertaken by Sagi-Schwartz and colleagues in Israel (Sagi-Schwartz, van IJzendoorn, et al., 2003). To avoid recruiting participants through convenience groups, population-wide demographic information from the Israeli Ministry of the Interior was used. Mothers in the Holocaust group ($N = 48$) were born between 1926 and 1937 and had lost both parents in Europe between 4 and 14 years of age. They had immigrated to Israel soon after the war, and had daughters of suitable age to be administered the AAI. A comparison group in the same age range who were born in Europe but had not experienced the Holocaust, had immigrated to Israel with their parents before the war, and had adult daughters was also studied. In the Holocaust survivors and the comparison group considered together, a majority of mothers showed the same attachment classification as their daughters (60.2%; $p = .02$). This was consonant with previous findings for adult mothers and adult daughters in Canada (Benoit & Parker, 1994).

Few Holocaust survivors were classified as secure on the AAI (22%), although this is perhaps not a surprisingly high proportion, given their early loss of parents, friends, and other family members in an atmosphere of terror and uncertainty. A very high proportion were unresolved or unclassifiable (56.3%), compared to the control group (18%). Sagi-Schwartz and colleagues have pointed out (Sagi, van IJzendoorn, Joels, & Scharf, 2002) that it is striking that disorganized lapses in reasoning or discourse surrounding trauma seemed to have endured for 50 or more years for a majority of these Holocaust survivors.

As discussed earlier in this chapter, unresolved trauma in a parent is associated with disorganized attachment in offspring, and disorganized infants in two independent samples have been found in late adolescence and early adulthood to be insecure on the AAI (Main et al., 2005). However, an unexpected and promising finding from the Sagi-Schwartz, van IJzendoorn, and colleagues study (2003) was that a substantial proportion of adult daughters of Holocaust survivors were secure, and overall did *not* differ in rates of insecurity from the comparison group. In theory, this low rate of offspring insecurity may result from the fact that, as opposed to loss experiences or other traumatic events in comparison samples, the traumatic events in question here were experienced collectively. For the Holocaust survivors, loss was not an idiosyncratic event, or hidden within an individual familial context, but originated from an outside source. For some, early family experiences were no doubt loving, and a primary representation of a bond with loving parents may have been maintained despite the loss. Finally, daughters born in Israel undoubtedly learned that what their mothers had experienced was shared with countless other residents of their country, many of whom saw Israel as a place of escape from a common enemy, as well as a newly established country sharing common hopes.

Religious/Spiritual Groups. Granqvist and colleagues at the universities of Uppsala and Göteborg in Sweden (Granqvist, Ivarsson, Broberg, & Hagekull, 2007) used the AAI with a sample of 84 adults (mean age = 29 years) drawn from religious/spiritual groups, and 46% of participants had secure-autonomous transcripts. As expected, AAI scores for mothers' loving behavior during childhood were linked to images of a loving God. However, New Age spirituality—which can include beliefs in the possibility of personal contact with the dead—was associated specifically with unresolved cannot classify and preoccupied adult attachment status. In addition (see Granqvist & Kirkpatrick, Chapter 38, this volume), strong majorities of devout Catholic laypeople and nuns have been found secure in a sample studied by Cassibba and her colleagues in Italy (Cassibba, Granqvist, Costantini, & Gatto, 2007).

Twin Studies. Two studies addressing questions of genetics, shared environment, and nonshared environment as contributors to AAI status have recently been published. In the first, 33 pairs of identical female twins (ages 13–26) and 14 of their nontwin siblings were administered the AAI (Constantino et al., 2006), with coding conducted by judges unaware of family membership. Amazingly, 22 of 33 or 67% of monozygotic twin pairs were concordant for four-category placement on the AAI (kappa = .51, $p < .0001$), and for the secure–insecure split the results were similar (26 of 33 agreements; $p < .0001$). Attachment classifications were also concordant for 13 of the 14 pairings of monozygotic twins and their nontwin siblings (who share on average 50% of their genes), and

thus was as strong as for the monozygotic pairs. Because these concordance rates were similar, the results were interpreted as providing preliminary evidence that similarity in AAI classification occurs predominantly on the basis of shared environmental influences.

Torgerson, Grova, and Sommerstad (2007) conducted a pilot study of attachment patterns in same-sex adult Norwegian twins. As in the Constantino and colleagues' (2006) study, the distribution of AAI patterns for twins was essentially the same as that established for singletons, and coders were unaware of zygosity status. Although within-pair similarity was high in both zygosity groups, especially high secure–insecure correspondence was found for the 28 monozygotic twins ($p < .001$), who were also similar in scores for coherence of mind (intraclass correlation = .77). In the much smaller dizygotic group ($n = 14$), correspondence for secure–insecure status approached significance ($p < .06$), and scores for coherence of mind were significantly similar (intraclass correlation = .61, $p < .05$). It should be noted that for the three-way analysis, kappa = .79 for the monozygotic pairs, and kappa = .40 for the dizygotic pairs. However, because of the small sample size, it was not possible to carry out the most common forms of twin analysis, or to present values that could provide differentiated information about environmental versus genetic influence.

Adoptive and Foster Parent–Child Dyads. In a now-classic study, Dozier, Stovall, Albus, and Bates (2001) examined 50 foster mothers' AAI status and the Strange Situation classifications of their foster infants assessed between 12 and 24 months of age (at least 3 months following placement). The two-way correspondence between maternal secure versus insecure state of mind and infant security versus insecurity with the foster mother was 72% (kappa = .43). This result did not differ from the global norms established for biologically related dyads by van IJzendoorn (1995), and hence argued for a nongenetic process leading to secure–insecure matches for mothers and infants. There was wide variation in the time of placement (birth to 20 months of age); surprisingly, however, this was not related to the security of infant attachment, so that recently placed and early-placed infants were equally likely to be judged secure in the Strange Situation with their foster mothers as long as the foster mothers themselves were found to be secure-autonomous on the AAI.

M. Steele, Hodges, Kaniuk, Hillman, and Henderson (2003) have reported associations between AAIs obtained from adoptive mothers and emotional themes in the doll-play narratives of their previously neglected or abused 4- to 6-year-olds. Despite the children's long history of maltreatment, a strong and significant overlap was established between the mothers' AAI status and their adopted children's response to the story completion tasks. Even 3 months following placement, if a mother was secure, there was, for example, less aggression in a child's doll play. For unresolved mothers, adoptive children's doll-play themes suggested especially marked levels of emotional and relational difficulties. On a separate but important note, I add in closing this section that in an Italian study of 50 couples seeking to adopt because of infertility, a majority of couples were classified as secure on the AAI (Santona & Zavattini, 2005).

Daughters of Parents with Dementia. H. Steele, Phibbs, and Woods (2004) studied a small group ($N = 17$) of daughters caring for mothers with dementia. The AAI was administered to the daughters while the mothers waited in an adjoining room, and the most important ratings—coherence of transcript, together with coherence of mind (which additionally takes into account "irrational" even if brief intrusions into coherence, such as those seen in unresolved speech)—were examined. Upon reunion, the researchers assessed mothers' joyfulness, proximity seeking, contact maintenance, and overall responsiveness to reunion with their adult daughters now serving as caregiving figures. These indices of reunion security were each significantly correlated with the adult daughters' coherence of transcript and coherence of mind. (See Magai, Chapter 24, this volume, for discussion of attachment and the normative role reversal that occurs between aging parents and their adult children.)

Blind or Deaf Individuals. In a recent overview of clinical studies, van IJzendoorn and Bakermans-Kranenburg (2008) included as a control group individuals who (although not screened as such) were identified as suffering from physical rather than emotional or psychological impairments. Even in a four-way analysis, blind or deaf individuals were as likely to be secure as those in low-risk samples; indeed, security (over 60% secure in the four-way analysis) was, if anything, somewhat elevated. In one study, for example (McKinnon Moran, & Pederson, 2004), normative results fo AAI coherence and secure classificatory statu were obtained for 50 adults whose AAIs were con ducted in American Sign Language. These result

were obtained not only despite hearing loss, but also in the face of long-term separations from parents, in conjunction with placement (beginning in middle childhood) in residential schools for deaf persons. Examples of loving, albeit nonverbal, behavior of parents (who were restricted from attempting substitute forms of linguistic contact) in the early years of life were convincingly described. As van IJzendoorn and Bakermans-Kranenburg conclude, the findings from blind and deaf populations provide an important corroboration for the discriminant validity of the AAI, since persons suffering from psychological difficulties have been found to be insecure on the AAI, but persons with physical impairments have not.

Intervention Studies

One of the most important uses of the AAI has been in intervention studies, two of which I described in 1999 (Fonagy et al., 1996; Korfmacher, Adam, Ogawa, & Egeland, 1997). I now briefly review four further investigations of interventions. First, Heinicke and colleagues (2006; see also Heinicke & Levine, 2008) used the AAI as a prebirth assessment for 57 high-risk mothers in an intervention project involving multiple forms of assistance, including weekly home visits for the first 2 years of life. At the end of the second year, an individual unacquainted with the dyad visited each home. This visitor (1) assessed varying aspects of maternal and child behavior (especially "child's expectation of care," measured with a scale that had proven valuable in previous work by this team), and (2) administered Waters's Observer Attachment Q-Sort. A regression analysis showed that a combined unresolved trauma/coherence scale from the prebirth AAI was the best predictor of toddler security assessed 2 years later. In addition, this combination of AAI scales predicted a mother's observed responsiveness to her 24-month-old. As in Korfmacher and colleagues' (1997) study, a mother's trauma/coherence on the prebirth AAI predicted the mother's involvement in the work of intervention from 6 months onward, and such involvement was significantly associated with positive 24-month outcomes. Put another way, the more coherent the mothers were, and the lower the scores they had received for unresolved trauma before their children's birth, the more they were able to involve themselves in the work of intervention from 6 months forward, and the more responsive they were to their children's needs at 24 months. The same (combined) variable predicted child security and expectation of care. In an intriguing analysis by AAI classification, Heinicke and colleagues (2006) also found that unresolved/secure mothers were the most involved in the work of intervention; that their toddlers were as secure by 24 months as were the offspring of secure mothers; and that, as would be expected, the toddlers of unresolved/dismissing and unresolved/preoccupied mothers fared worst.

Taking a different point of entry with the AAI and intervention, Levy and colleagues (2006) administered a preintervention AAI to patients with borderline personality disorder, and a second AAI following 1 year of therapy. Of the 90 participants, 30 were randomly assigned to transference-focused therapy as developed by Kernberg (1984), 30 to Linehan's (1993) dialectical behavior therapy, and 30 to supportive therapy. As predicted in advance, given the representational and relational focus of transference-focused therapy, significant change in AAI status—specifically, increases in coherence of transcript, and a more than threefold increase in number of patients coded as secure-autonomous—was established for this form of therapy. Scores for reflective functioning as seen in the AAIs (Fonagy, Steele, Steele, & Target, 1998) were also significantly increased for this group. Therapy did not reduce scores for unresolved trauma, however. Note that Moran and his colleagues in Canada (Moran, Bailey, Gleason, DeOliveira, & Pederson, 2008) also had limited success in increasing maternal sensitivity and infant Strange Situation security, due to the fact that their video feedback interventions were not successful for unresolved mothers, whose infants remained disorganized.

Recently, Bick and Dozier (2008) presented aspects of their work with 200 foster parents who were administered the AAI in conjunction with Dozier's Attachment and Biobehavioral Catch-Up Program. Just over half of these foster parents were classified as secure. One of the special features of this intervention program is that the interveners conduct the AAI at program outset, and use it both to establish rapport and to guide the continuing intervention process. Intriguing differences corresponding with AAI status occurred in responses to intervention attempts, as well as in observed behavior with the foster infants. During the intervention, as in their AAIs, foster mothers with secure-autonomous transcripts were cooperative and collaborative, and were described as exhibiting high levels of metacognitive monitoring, coherence, and openness to discussing potentially painful or sensitive topics. Foster mothers with dismissing transcripts tended to resist discussing relationship difficulties as well as the children's

need for nurturance. In contrast, those classified as preoccupied on the AAI seemed relatively comfortable describing their attachment-related pasts, but this sometimes became the primary focus of the session. Foster mothers with preoccupied transcripts were described as fluctuating between seeking reassurance from the intervener and displaying annoyance, while their own concerns sometimes seemed to take precedence over those of their infants. Finally, caregivers unresolved with regard to loss or trauma seemed to have trouble developing trust in their trainers and commitment to the treatment program. In addition, they seemed to have difficulties discussing ways in which they might have been frightened as children, and within sessions had difficulty behaving in nonthreatening ways toward children in the home.

Finally, in a new examination of intervention possibilities, AAIs were administered to professional caregivers in institutions, together with institutionalized adolescents in their care (Zegers, Schuengel, van IJzendoorn, & Janssens, 2006). For the first 3 months of the clients' stay in the institution, no effects of caregiver or adolescent AAI security were found. However, after longer periods, more secure mentors were being increasingly perceived as available as a secure base, and more secure adolescents were perceived as increasing their secure-base use of their mentors.

Studies of Peer and Couple Relations

In the first edition of this chapter (Hesse, 1999), I reviewed several studies of peer and couple relations, each of which revealed that individuals with secure-autonomous AAI transcripts engaged in more positive exchanges, whereas in general those with dismissing transcripts displayed hostility, and those with preoccupied transcripts displayed anxiety. The pioneering study in this domain was that of Kobak and Sceery (1988), and similar results have now been reported by Roisman, Madsen, Hennighausen, Sroufe, and Collins (2001), Wampler, Shi, Nelson, and Kimball (2003), and Creasey and Ladd (2005).

Creasey (2002) added to more general findings concerning negative effects on couple interactions for insecurity on the AAI, reporting that individuals who were unresolved but alternatively secure engaged in positive interactions comparable to those of persons who were secure, whereas unresolved/insecure individuals were the most negative in his sample, and exhibited the most controlling behavior (as previously seen in disorganized 6-year-old children observed with their mothers; Main & Cassidy, 1988). Crowell and colleagues (2002) developed a Secure Base Scoring System for couple interactions, which was used to assess 157 engaged couples. Members of secure couples proved able to use one another as a secure base from which to explore their relationship, and were able to turn to each other even during conflict. Bouthillier, Julien, Dubé, Bélanger, and Harmelin (2002) found that secure AAI classifications predicted proactive emotion regulation during marital conflict, whereas security on self-reported adult attachment questionnaires did not. Interestingly, in a study examining marital perceptions at 3, 12, and 24 months following the birth of a child (the AAI had been administered prenatally), a protective effect of security during stressful periods in the marriage was reported (Paley, Cox, Harter, & Margand, 2002).

Babcock, Jacobsen, Gottman, and Yerington (2000) used the AAI with nonviolent, unhappily married men as well as with violent men; the latter were especially likely to be classified as insecure. In laboratory arguments, secure husbands were, interestingly, the most defensive, whereas dismissing husbands were the most controlling and distancing, and preoccupied husbands the least distancing. In the home, wife withdrawal predicted battering for the preoccupied husbands, suggesting violent responses to abandonment fears. For dismissing husbands, wife defensiveness rather than wife withdrawal was a significant predictor of battering, suggesting use of violence to assert authority and control.

In a Minnesota study, Roisman and colleagues (2001) examined observational assessments of parent–child interactions at 13 years of age, AAIs conducted at age 19, and observed dyadic behaviors with romantic partners 1–2 years later. As expected, AAIs at age 19 predicted the quality of romantic partner interactions. In addition, however, the AAI was found to mediate the across-time correlation between parent–child behaviors at age 13 and romantic relationship behaviors in young adulthood (ages 20–21), suggesting to these authors that "salient parent–child experiences" were being internalized and on that basis carried forward into adult relationships.

In Israel, Mayseless and Sharf (2007) administered the AAI to 80 young men and interviewed them regarding their capacity for intimacy 4 years later. Questionnaires were used as well. Secure states of mind 4 years previously predicted capacities not only for romantic intimacy, but also for intimacy with friends. Furman (2001) modeled a Friendship Interview after the AAI, creating a

similar scoring system, and using it with 68 high school seniors. Ratings of dyadic support from friends were related to secure working models of friendships, whereas dismissing friendship models were inversely related to dyadic support from friends. In a second study of the same group of high school seniors (Furman, Simon, Shaffer, & Bouchey, 2002), working models of friendships were related to models of romantic relationships and to relationships with parents (using the AAI); however, working models of parents and of romantic relationships were inconsistently related.

Using a sample of 11th-grade students (N = 189, 118 girls) in a large metropolitan area, Dykas, Ziv, and Cassidy (2008) examined how adolescents' AAI classifications were linked to various peer perceptions of adolescent behavior toward classmates and adolescent social status (i.e., social acceptance, social behavior). This was the first AAI study to assess multiple aspects of peer relations with a standard battery of peer report measures, in keeping with the established peer research tradition, and data were collected from 1,881 classmates. Because only 9% of these young people were classified as preoccupied, unresolved, or cannot classify, analyses focused exclusively on comparisons between adolescents whose AAI transcripts had been classified as either secure-autonomous or dismissing. Secure-autonomous adolescents were more likely than insecure-dismissing adolescents to be socially accepted by their peers, and also to be perceived as behaving prosocially. In contrast, dismissing adolescents were more likely than secure adolescents to be perceived as aggressive. Somewhat surprisingly, dismissing adolescents were also seen as more shy/withdrawn and more victimized by peers. The finding related to victimization was particularly notable, because no published study had previously examined whether adolescents' AAI classifications are linked to negative treatment by peers.

Two recent studies have used the AAI in a critical new context, examining the extent to which attachment representations are generalized to new social situations and guide behavior even during initial interactions with unfamiliar others. In one study, Roisman (2006) examined interactions between 50 same-sex stranger dyads (half women). Dyads were asked to participate in a "challenging" laboratory joint puzzle-building task. Analyses conducted after controlling for the Big Five personality dimensions revealed attachment-related differences. Secure participants demonstrated positive engagement during the task, preoccupied adults dominated the task, and dismissing adults demonstrated negative emotion. A second study examined 135 high school students who participated with unfamiliar peers in two laboratory tasks: one in which they were asked to seek support when discussing topics typically of concern to adolescents, and the other in which they were asked to provide support (Feeney, Cassidy, & Ramos-Marcuse, in press). AAI scores for coherence of mind (used in this study as the index of AAI attachment security) were predictive of behaviors exhibited during the discussions. Adolescents with higher AAI coherence scores were more likely to seek support and more receptive to the support attempts of the unfamiliar peer. With regard to support-giving behavior, adolescents with higher AAI coherence scores were less self-focused and more sensitive/responsive during the discussion. Moreover, adolescents with low AAI coherence scores strongly reciprocated expressions of negative/hostile affect from the peer during both interactions, whereas adolescents with high AAI coherence scores did not. In both of these studies, then, it was shown that even at a first meeting with another person, states of mind regarding early attachment relations with parents are evident.

Longitudinal Studies

Many kinds of longitudinal studies predictive of eventual AAI status could of course be conducted. As one example, Beckwith, Cohen, and Hamilton (1999) found that maternal insensitivity in the early months predicted dismissing AAI status at age 18. Because of limited space, however, I focus here on studies that have compared infant Strange Situation behavior with the mother to AAI status determined for the same individuals in young adulthood, and I confine even the majority of these descriptions to a secure–insecure analysis. A few of these studies were reviewed earlier (Hesse, 1999).

Four U.S. longitudinal studies have been undertaken, each indicating significant infancy-to-adulthood links. Waters, Merrick, Treboux, Crowell, and Albersheim (2000) conducted AAIs with 50 lower- to middle-class young adults seen in the Ainsworth Strange Situation at 12 months. For 72% of participants (kappa = .44, $p < .001$), secure versus insecure infant Strange Situation behavior was predictive of secure versus insecure AAI texts 19–21 years later. This correspondence was somewhat higher (78%; kappa = .52) when participants experiencing intervening trauma were eliminated. In the same year, Hamilton (2000) reported on the

predictability of AAI responses in a sample of 30 adolescents (ages 17–19) who had been raised in unconventional settings (e.g., communal living groups). The two-way (secure vs. insecure) correspondence in this study was 77% (kappa = .49).

Using a sample of 42 participants (with some few remaining to be coded, dependent upon recovery of tapes following a mechanical defect), Main and her colleagues (Main, 2001; Main et al., 2005) compared Strange Situation classifications with mothers at 12–18 months of age to AAI status as assessed at age 19. As in Waters and colleagues' (2000) original study, a highly significant secure–insecure match was found across the 18-year period. Among the 12 participants coded as disorganized/secure during infancy, and as predicted in advance, none were secure on the AAI at age 19. Intriguingly, although most avoidant infants had become dismissing, about half of the previously disorganized infants had become dismissing as well.

In the earlier edition of this chapter, I included a first report from the Minnesota Study of Risk and Adaptation from Birth to Adulthood (57 subjects; Weinfield, Sroufe, & Egeland, 2000). The researchers had used the traditional three-way analysis of behavior in the Strange Situation (disorganized/secure infants were considered secure), and no significant relation between 12-month attachment status and AAI status at age 19 was found. Since then, more participants have been seen in the AAI (N = 125); disorganized/secure infants have been placed in the insecure infant group; and the sample has been followed to age 26. A significant 18-month Strange Situation to 26-year secure–insecure match has now been reported ($p < .001$), although the match from 12 months appears to remain insignificant. Interestingly, as in the Bay Area study of middle-class dyads, in this low-income sample disorganized/secure infants were only rarely found to be secure in adulthood (Sroufe et al., 2005).

Three studies conducted outside the United States have yielded insignificant relations between Strange Situation responses and AAI status in young adulthood. These include both the Regensburg and Bielefeld longitudinal studies (in which, however, disorganized/secure infants were coded as secure) as described by Grossmann, Grossmann, and Kindler (2005), and the Haifa longitudinal study (Sagi-Schwartz & Aviezer, 2005), in which the infant disorganized category seems not to have been used. Although it should be noted that only the three-way infant analysis was available to Waters and colleagues (2000) and to Hamilton (2000) as well, it would be prudent to await a four-way analysis of infant Strange Situation responses before final conclusions are drawn regarding the German and Israeli studies.

The Concept of "Earned" Security as Inferred from the AAI

In 1999, "earned" security was just emerging as a topic within the AAI literature. The concept had originated in early AAI manuals and training institutes, which stressed that placement of texts in the secure-autonomous classification is based solely on coherence scores. Thus, it was emphasized that coherent, collaborative speakers could be judged secure-autonomous despite the coder's estimates that during childhood parents did not show loving behavior, and such transcripts were informally identified as "earned-secure." Unfortunately, no precise cutoff criteria for distinguishing earned security were provided until 1998, where a criterion of loving scores of 2.5 or below on the 9-point scale for both parents was used (recently modified to scores of 3 or below—Jacobvitz, 2008; Main, Goldwyn, & Hesse, 2008). As noted earlier, scores of 3 are assigned when a parent is seen by the coder as providing instrumental attention and assistance during childhood, *without* indices of actively loving behavior, such as reliable physical affection, forgiving misbehavior, or defending the child to others (e.g., teachers). In contrast, these indices of actively loving behavior must be present in mild form for scores of 5, which is considered sufficiently loving or "good-enough" parenting.

The current criterion for earned-secure AAI status (a coherent transcript, with both parents scoring at 3 or below for loving) was not met by any of the 19-year-old participants in the Bay Area follow-up study, and it was met extremely rarely in two other studies of participants averaging 19 years of age (Roisman, Fortuna, & Holland, 2006; Roisman, Padrón, Sroufe, & Egeland, 2002). The fact that few adolescents are judged earned-secure is probably not surprising, but suggests that given current criteria the investigation of earned security will be most feasible within samples of post college-age adults.

Two investigations of this kind have been completed, each utilizing a cross-sectional design. Caspers, Yucuis, Troutman, and Spinks (2006) found that continuous-secure adults (identified through loving scores of 5 or above for both parents) were less likely than both insecure and earned-secure adults to abuse alcohol or other substances. However, earned-secure adults (N = 2

identified as both parents scoring at 2.5 or below for loving behavior) were more likely to have entered psychotherapy than either dismissing or continuous-secure participants. Jacobvitz (2008; see also Jacobvitz, Booher, & Hazen, 2001) also found that earned-secure adults (both parents scoring at 3 or below for loving behavior) had spent more time in therapy than either continuous-secure or insecure participants. During couple interactions, earned-secure participants were observed to more frequently reflect in the moment and appropriately modify their behavior in accordance with partner response than were continuous-secure or insecure participants—and to do so even during conflict. Thus some advantage in partner interactions appeared to accrue to coherent adults who had been inferred to have had notably difficult childhoods.

Prior to the implementation of the above guidelines, most investigators studying earned security had essentially divided their secure participants into two groups: those inferred to have had "more" versus "less" loving parents, with the latter usually being identified by one of the parents having received a score either below the sample median or below a score of 5 on the 9-point scale. In the majority of these studies mean scores for the mothers' loving behavior during childhood for participants termed earned-secure have on average been above 5, with many scores of course falling well above 5. Although ideally these might therefore best have been termed studies of participants with parents inferred to have been "more" versus "less" loving, rather than studies examining continuous- versus earned-secure participants, they have yielded interesting results.

For example, in a pioneering study conducted in 1994, Pearson, Cohn, Cowan, and Cowan found that although earned-secure participants scored higher on a depression inventory than did their continuous-secure counterparts, they were equally warm toward their 42-month-old offspring and equally providing of structure. Some years later, Phelps, Belsky, and Crnic (1998) found that self-reported "daily hassles" were not higher for earned-secure than other mothers, helping to rule out a possible "depressogenic" hypothesis that earned-secure mothers tended simply to report their experiences as being worse than did others. In addition, they found that earned-secure mothers' sensitivity to offspring held up even under high-stress conditions. Paley, Cox, Burchinal, and Payne (1999) found that earned-secure wives were no less positive and no more negative than continuous-secure wives in marital interactions. Wives responded less positively, however, to earned-secure than continuous-secure husbands.

Roisman and colleagues (2002) inspected longitudinal data from 19-year-olds in a Minnesota high-risk sample. In this study, transcripts where one parent (usually the father) fell below 5 on the loving scale were defined as earned-secure. The mean loving scores for mothers of participants identified as earned-secure was 5.46, whereas for continuous-secure participants the mean loving score for mothers was one point higher, or 6.50. In contrast, mean father-loving scores for the two groups differed substantially, being 2.56 for earned-secures and 5.73 for continuous-secures. Thus identified, earned-secure status was not significantly associated with having been insecure with mother in the Strange Situation at either 12 or 18 months, although it should be noted that the disorganized category was not utilized, so that disorganized/secure infants would have been coded as secure. In addition, earned-secure status at age 19 was not associated with significantly less positive (nor with significantly more positive) observed interactions with mother at 24 or 42 months of age, or at age 13.

It would be premature to conclude from this study, however, that AAI scores for parental loving are unrelated to childhood experiences, thereby making retrospective earned-secure assignments invalid. This is because (a) security or insecurity in infancy was identified only on the basis of Strange Situation classification with *mother*, yet (b) retrospective insecurity appears to have been determined mainly on the basis of inferred early insecurity with *father*. For the same reason, observations of father–child interactions would have been necessary to deciding whether earned-secure status did or did not correspond significantly with observed early experience.

In a recent experimental study, Roisman and colleagues (2006) attempted to induce sad or happy moods just before administering the AAI, asking participants to focus for 10 minutes on an autobiographical memory relevant to achieving a sad (or happy) state. Sad (or happy) music was played during this period, and participants were urged to achieve a mood state as intense and as real as possible. Participants were identified as earned secure if they were coherent during the AAI and if one of the two parents had received a loving score below 5, and a score above 5 for rejecting or neglecting behavior. The remaining coherent participants were regarded as continuous secure.

With the earned- versus continuous-secure categories thus defined, placement in the earned-

versus continuous-secure categories was impressively related to induced mood. The mood induction procedures did not, however, affect insecure speakers, and in interpreting this finding, Roisman and colleagues (2006; see also Sroufe & Waters, 1977) suggested that perhaps only secure speakers have the ability to "tune behavior and emotion properly to contextual demands." Importantly, however, and as the investigators emphasize, coherence scores—the heart of the AAI scoring procedure—were not affected by induced mood.

It should be noted, however, that induced sad moods in this study did not in fact lead to earned-secure status as identified by loving scores of 3 or below for both parents. In the sad condition, mean father-loving scores for secure participants were at 4.45 (SD = 1.74), or on average well above 3. Also in the sad condition, the mean for mother-loving scores was 5.52 (which is, again, considered "good-enough" parenting), and readily ranged to above 7 (SD = 1.66). Thus, even in the sad condition, mother-loving scores for secure participants remained at the average for most samples, with many secure participants' mothers scoring well above it.

As yet, then, the degree to which earned-secure status reflects actual adverse experiences in childhood remains, as previously (Hesse, 1999), an open question. Currently, however, no evidence has emerged to counter the proposition that, strictly defined, earned-secure status will be found to represent a coherent AAI description of an insecure childhood. Another presently unanswered question is whether the induction of sad moods in persons with secure-autonomous status can reduce parental loving scores sufficiently to ensure that loving behavior on the part of both parents would appear inadequate.

The first of these issues will ultimately be resolved by prospective or longitudinal studies that follow participants beyond late adolescence, so that individuals insecure in adolescence will have had the opportunity to form a coherent representation of their lives despite early adverse experiences with parents. The second can be addressed by new mood induction studies, perhaps optimally by asking adult participants to focus on sad versus happy prospective events rather than elements from their autobiographies. However, many other approaches to the investigation of earned security (using current guidelines) should be undertaken as well and will likely continue to provide interesting outcomes, as has been demonstrated in the two recent cross-sectional studies of adult populations described earlier (Caspers et al., 2006: Jacobvitz, 2008). Finally, pre- to post-therapy studies that show moves from insecure to secure-autonomous attachment status (see Levy et al., 2006) appear to trace one developmental pathway to earned security within adulthood, and can also make an important contribution to our understanding of this intriguing topic.

Studies of Emotion and Emotion Regulation

The concept of "conditional behavioral strategies"—according to which individuals may be enabled through natural selection to reach the same biological ends by differing behavioral pathways, depending on circumstances—is widespread in evolutionary thinking, and Main (1990; see also Main, 1981) extended this thinking to the organized patterns of infant attachment. Specifically, Main proposed that secure infants use a primary behavioral strategy for maintaining proximity to the attachment figure(s). In contrast, she suggested that insecure infants may manipulate the level of behavioral output usually called for by the attachment system through secondary, or conditional, strategies that act to minimize or maximize that output in order to increase or maintain proximity to a caregiver who responds preferentially to indices of offspring independence or offspring dependence. Attentional/cognitive mechanisms were seen as potentially assisting offspring in minimizing or maximizing their behavioral output relative to what the system might call for at a given moment.

A few years later, Cassidy (1994) further extended this reasoning to affective responses on the part of both mother and child, and specifically to emotion regulation. This extension has been widely applied to understanding relations between attachment and emotion regulation as behaviorally expressed. Another extension of Main's (1990) reasoning is seen in the construction of Kobak's (1993) Attachment Q-Sort, which is used to score AAI interviews in terms of "hyperactivating" and "deactivating" dimensions.

The study of the AAI in relation to emotions may have begun with the work of Slade and her colleagues (Slade, Belsky, Aber, & Phelps, 1999; see also Haft & Slade, 1989), who used the AAI with 125 mothers of first-born sons, in conjunction with a Parent Development Interview (PDI) and direct observations of mothering behavior. Mothers whose transcripts were classified as secure-autonomous scored highest on the joy-pleasure/coherence dimension of the PDI, and dismissing mothers scored highest on the anger dimension.

Coping and expectations of abilities to regulate emotions were examined in two other investigations using the AAI. In a study of 88 young soldiers in Israel, Scharf, Mayseless, and Kivenson-Baron (2004) found that—according to their own reports and those of friends—secure-autonomous soldiers were able to cope better with basic training than were soldiers who were classified as insecure on the AAI. In Illinois, Creasey and Ladd (2004) reported that attachment representations moderated the association between negative mood regulation expectancies and conflict management tactics actually displayed in romantic relationships. In a small study employing the Facial Action Coding System (FACS; Ekman & Friesen, 1978) for facial expressions of emotion during videotaped AAIs (N = 14 "healthy" women), Buchheim and Benecke (2007) found that "genuine," or "Duchenne," smiles were more frequent among secure participants, who also showed positive facial affect more broadly. M. Steele, Steele, and Johansson (2002) found that mothers' secure-autonomous prebirth AAIs were linked to their 11-year-old children's acknowledgement of a pictured child's distress in peer–family situations.

DeOliveira, Moran, and Pederson (2005) followed up Cassidy's (1994) proposals regarding linkages between attachment and emotion regulation in a study of 90 adolescent mothers, linking the AAI with self-reported depressive symptomatology (Radloff, 1977) when the infants were 6 months of age, and to Gottman's metaemotion interview (Katz, Gottman, Shapiro, & Carrère, 1997) when their offspring had reached age 2. All preoccupied mothers were also unresolved, so that group differences could be assessed only for the secure-autonomous, dismissing, and unresolved AAI categories. Both dismissing and unresolved mothers had significantly higher levels of depression than autonomous mothers, and clinical depression was found in 12% of autonomous, 45% of dismissing, and 46% of unresolved mothers. Since most of the mothers were impoverished and/or single (not living in common-law relationships or marriages), perhaps the most surprising finding was the protective quality of secure-autonomous status. It is also notable that unresolved mothers reported significantly more affective/internalizing symptoms than either dismissing or autonomous mothers, whereas the dismissing and unresolved mothers reported significantly more somatic/externalizing symptoms.

In terms of mindset or awareness of their own emotions, secure mothers in this study showed the most awareness of, as well as acceptance of, fear. They also showed the greatest awareness of anger among the three groups of mothers, whereas their overall emotional regulation was better than that of unresolved mothers. With respect to fear, one dismissing mother said, "I'm not sure ... I don't really think about it.... If I think about it, it gets worse ... so I just ignore it and it goes away" (DeOliveira et al., 2005, p. 165). In terms of responses to the *children's* emotions, secure mothers were more responsive to fear than the dismissing mothers, more responsive to anger than the unresolved mothers, and more responsive to sadness than were either dismissing or unresolved mothers. As an example of unresolved mothers' difficulties in responding to their children's anger, one mother described herself as feeling "um, uncontrollable, like I feel like I, I, I've, I have no control over her sometimes when she's angry. Um, helpless, helpless, like I mean she's angry a lot of the time" (p. 167).

Roisman, Tsai, and Chiang (2004) assessed Kobak's "hyperactivating versus deactivating" (dismissing vs. preoccupied) *Q*-sort dimensions, but used only coders (N = 3) who had previously been certified in Main and Goldwyn's (1998) AAI classification and scoring system. The AAI was administered to 30 European Americans and 30 Chinese Americans between 18 and 30 years of age. Physiological responses were recorded throughout the AAI, and every facial event was coded with the FACS. Interview participants were also given a self-report inventory consisting of 25 emotion terms to indicate how they felt during the interview.

In a replication and extension of Dozier and Kobak's (1992) pioneering work, elevation of skin conductance was found to be specifically associated with deactivating (dismissing) participants, whose skin conductance rose robustly from baseline as the interview progressed. Neither deactivation nor security (absence of marked hyperactivation or deactivation) was associated with the frequency of either positive or negative emotions expressed during the interview (as recorded with the FACS), but preoccupation/hyperactivation was significantly correlated with the frequency of negative expressions. Self-reported emotions ascribed to the experience of undertaking the AAI showed that only preoccupation/hyperactivation was marginally associated (negatively) with self-reported positive emotion. Security was associated with marginally less, and preoccupation with significantly more, negative emotional engagement during the interview. Despite the persistent rises in skin conductance suggestive of emotional sup-

pression found for dismissing/deactivating speakers, dismissing orientations were not associated with self-reported negative (or positive) emotion regarding the experience.

One of the most impressive findings to emerge from this study was based on an item analysis of the Q-sort, in which positive or negative valence of childhood experiences as found in the AAIs was determined and assessed. As predicted, security was associated with matches in behaviorally (facially) expressed positive emotion and positive childhood experiences, as well as congruence between negative facial expressions and negative inferred childhood experience. In contrast, in all but one test, preoccupation was associated with discrepancies between emotion and inferred childhood experience. In summarizing the study, Roisman and colleagues (2004) suggest that "a key variable that makes secure, preoccupied, and dismissing adults different is the way that their emotional responses are tied to the valence of their memories regarding childhood experiences. Whereas secure adults appear to be 'in sync' with their recalled pasts, dismissing and preoccupied individuals do not present as emotionally integrated" (p. 788). Dismissing/deactivating participants showed subtle signs of covert emotional suppression as evidenced by electrodermal reactivity during the AAI, and preoccupied/hyperactivating adults showed reliable discrepancies. Thus only secure participants expressed and reported emotion consistent with their inferred childhood experiences (positive or negative) and their expressed as well as self-reported emotion during the AAI.

Endocrinology, Cognitive Performance, and Neuroscience

In three studies conducted at Berkeley, HPA functioning, cognitive performance, and EEG responses have been found related to AAI status. Blount-Matthews (2004) found as predicted that when the word "mother" (but not "basket" or "betray") was used as a subliminal prime, the time taken to complete a lexical decision task was significantly slowed for preoccupied, but not for dismissing or secure, participants. This AAI study provides empirical support for the notion of interference with cognitive processes via unseen attachment-related "triggers."

Rifkin-Graboi (2008) examined cortisol output in college-age men. Home assays showed little relation to overall AAI security, although passivity of discourse was significantly positively related to elevated cortisol during the evening and night collections. In the laboratory, participants were presented with both cognitive and attachment-related challenges, the latter presenting hypothetical situations involving separation, loss, and abandonment. As expected, scores for idealization of the parents were associated with a significant rise in cortisol specific to the interpersonal (attachment) challenge.

Gribneau (2006) presented four categories of images (social positive, nature positive, blatant death/dying, and quiet cemetery images) to women who had experienced loss, half of whom (16/31) had been coded as unresolved/disorganized. As predicted, event-related potentials (ERP) demonstrated increased physiological responses to quiet cemetery images specific to unresolved women, with the anterior N2 ERP component indicating involuntary attention. A developing right-sided asymmetrical (P3 ERP) component toward all images also appeared specifically in the unresolved women.

CONCLUSIONS

With the exception of a summarized review of the pre-1999 research literature, this chapter has departed from my earlier discussion of the AAI (Hesse, 1999) in several ways. I have endeavored here to make the AAI far more accessible, both to the reader coming to the topic for the first time and to one having some familiarity with the literature who nonetheless has not been trained in the scoring and classification system (Main et al., 2003). As I reread the previous chapter prior to writing this one, I became acutely aware of how remote the AAI itself seemed to remain, despite the extensive discussion of many of its qualities and correlates. I concluded that with the increasing interest in the instrument, it has become critical for readers to gain a "living sense" of both what the AAI actually is (as provided by direct text examples) and how the process of scoring and classifying an AAI text is actually undertaken. This discussion has necessitated an extensive elaboration of both Main's (1993, 2000) views regarding attentional processes, and the work of Grice (1975, 1989).

In addition, I have said more than previously about scale scores (the continuous dimensions of the scoring system) and have presented the AAI subcategories for the first time. In future studies, I hope that both scale scores and subcategory

(Dazzi, DeCoro, Ortu, & Speranza, 1999). Following Gricean maxims as closely as possible, but adding where necessary from the AAI manual (e.g., "passivity" indicators were added directly as violations of manner), these investigators found that, as stated in this chapter, violations of manner were most pronounced in dismissing texts, and violations of quantity, relevance, and manner were evident in preoccupied texts, whereas relatively few violations occurred in secure-autonomous texts. More recently, a group of investigators in Leiden have developed a Coherence Q-Sort, and have found that attachment-trained sorters place emphasis on different maxims than do naive sorters or linguists; this means that training in AAI institutes remains a necessary prerequisite to identifying the kinds of coherence most relevant to AAI texts (Beijersbergen, Bakermans-Kranenburg, & van IJzendoorn, 2006).

4. I have composed the quotations in this chapter, to preserve confidentiality. Nonetheless, they closely approximate actual quotations from AAI transcripts, and none would seem unusual to an experienced AAI coder.
5. This response is more elaborated than usual, but it has been seen in some interviews and is provided here for heuristic purposes.
6. This does not mean that the same speaker might not also be unresolved/disorganized (see "Empirical Studies Involving the AAI," below).
7. Within AAI manuals the development sample has been accurately described as consisting of 44 participants. However, Main and Goldwyn (1988) had referenced only the initial 36.
8. Notice that, as is the case for infant Strange Situation coding, interview transcripts are always approached first to determine the best-fitting organized category. If the first AAI category placement will ultimately be unresolved/disorganized or unorganized (cannot classify), the coder must nonetheless designate the organized category that the transcript may fit (e.g., unresolved/dismissing). The same holds for the Strange Situation, in which an infant judged primarily disorganized is also assigned to a best-fitting organized category (e.g., disorganized/avoidant).
9. The article on which this brief review is largely based was accepted for publication by a leading American Psychological Association journal in 1988, but the authors withheld the manuscript awaiting replication. The still-unpublished manuscript has been frequently cited and is available from me.
10. For both mothers and fathers, as would be expected, coherence of transcript was significantly negatively related to infant avoidance, as was angry preoccupation with either parent, except fathers' preoccupation with their mothers.
11. In a high-risk clinical sample of 37 participants followed across 13 years by Crowell and Hauser (2008), secure–insecure stability was 84%; however, all but 2 participants were insecure at both time periods, and there was considerable movement among the insecure AAI categories.
12. This effect was necessarily calculated on the basis of only 10 studies and 384 dyads.
13. It should be noted, however, that in this 1995 meta-analysis, secure-autonomous parents were usually judged to be warmer toward their offspring than were other parents.

REFERENCES

Abrams, K. Y., Rifkin, A., & Hesse, E. (2006). Examining the role of parental frightened/frightening subtypes in predicting disorganized attachment within a brief observational procedure. *Development and Psychopathology, 18*, 345–361.

Adshead, G., & Bluglass, K. (2005). Attachment representations in mothers with abnormal illness behaviour by proxy. *British Journal of Psychiatry, 187*, 328–333.

Ainsworth, M. D. S. (1967). *Infancy in Uganda: Infant care and the growth of love*. Baltimore: Johns Hopkins University Press.

Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1971). Individual differences in Strange Situation behaviour of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations* (pp. 17–57). New York: Academic Press.

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

Ainsworth, M. D. S., & Eichberg, C. G. (1991). Effects on infant–mother attachment of mother's unresolved loss of an attachment figure or other traumatic experience. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 160–183). London: Routledge.

Allen, J. P., Hauser, S. T., & Borman-Spurrell, E. (1996). Attachment theory as a framework for understanding sequelae of severe adolescent psychopathology: An eleven-year follow-up study. *Journal of Consulting and Clinical Psychology, 64*, 254–263.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.

Ammaniti, M., Dazzi, N., & Muscetta, S. (2008). The AAI in a clinical context: Some experiences and illustrations. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 236–269). New York: Guilford Press.

Ammaniti, M., Speranza, A. M., & Candelori, C. (1996). Stability of attachment in children and intergenerational transmission of attachment. *Psychiatria dell'Infanzia e dell'Adolescenza, 63*, 313–332.

Babcock, J. C., Jacobson, N., Gottman, J., & Yerington, T. P. (2000). Attachment, emotional regulation, and the function of marital violence: Differences between secure, preoccupied, and dismissing violent and non-violent husbands. *Journal of Family Violence, 15*, 391–409.

Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (1993). A psychometric study of the Adult Attach-

ment and peer relations in adolescence. *Attachment and Human Development*.

Eichberg, C. G. (1989). Quality of infant–parent attachment: Related to mother's representation of her own relationship history and childcare attitudes. *Dissertation Abstracts International*, 50(1), 343B.

Ekman, P., & Friesen, W. V. (1978). *Unmasking the face: A guide to recognizing emotions from facial cues*. Englewood Cliffs, NJ: Prentice-Hall.

Evans, E. M. (2008). *Understanding maternal trauma: An investigation of the attachment representations, psychological symptomatology, and interactive behaviour of mothers with a trauma history*. Unpublished doctoral dissertation, University of Western Ontario, London, ON, Canada.

Feeney, B. C., Cassidy, J., & Ramos-Marcuse, F. (in press). The generalization of attachment representations to new social situations: Predicting behavior during initial interactions with strangers. *Journal of Personality and Social Psychology*.

Fonagy, P., Leigh, T., Steele, M., Steele, H., Kennedy, G., Mattoon, M., et al. (1996). The relation of attachment status, psychiatric classification, and response to psychotherapy. *Journal of Consulting and Clinical Psychology*, 64, 22–31.

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

Fonagy, P., Steele, M., Steele, H., & Target, M. (1998). *Reflective-function manual: Version 5.0. For application to the Adult Attachment Interview*. Unpublished manuscript, University College, London.

Forguson, L., & Gopnik, A. (1988). The ontogeny of common sense. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 226–243). New York: Cambridge University Press.

Frodi, A., Dernevik, M., Sepa, A., Philipson, J., & Bragesjö, M. (2001). Current attachment representations of incarcerated offenders varying in degree of psychopathy. *Attachment and Human Development*, 3, 269–283.

Furman, W. (2001). Working models of friendships. *Journal of Social and Personal Relationships*, 18, 583–602.

Furman, W., & Simon, V. A. (2004). Concordance in attachment states of mind and styles with respect to fathers and mothers. *Developmental Psychology*, 40, 1239–1247.

Furman, W., Simon, V. A., Shaffer, L., & Bouchey, H. A. (2002). Adolescents' working models and styles for relationships with parents, friends, and romantic partners. *Child Development*, 73(1), 241–255.

Fyffe, C. E., & Waters, E. (1997, April). *Empirical classification of adult attachment status: Predicting group membership*. Paper presented at the biennial meeting of the Society for Research in Child Development, Washington, DC.

George, C., Kaplan, N., & Main, M. (1984). *Adult Attachment Interview protocol*. Unpublished manuscript, University of California at Berkeley.

George, C., Kaplan, N., & Main, M. (1985). *Adult Attachment Interview protocol* (2nd ed.). Unpublished manuscript, University of California at Berkeley.

George, C., Kaplan, N., & Main, M. (1996). *Adult Attachment Interview protocol* (3rd ed.). Unpublished manuscript, University of California at Berkeley.

Gojman de Millán, S., & Millán, S. (2008). The AAI and its contribution to a therapeutic intervention project for violent, traumatized, and suicidal cases. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 297–319). New York: Guilford Press.

Granqvist, P., Ivarsson, T., Broberg, A. G., & Hagekull, B. (2007). Examining relations among attachment, religiosity, and New Age spirituality using the Adult Attachment Interview. *Developmental Psychology*, 43, 590–601.

Gribneau, N. (2006). *Event-related potentials to cemetery images distinguish electroencephalogram recordings for women unresolved for loss on the Adult Attachment Interview*. Unpublished doctoral dissertation, Department of Integrative Biology, University of California at Berkeley.

Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Moran (Eds.), *Syntax and semantics: Vol. 3. Speech acts* (pp. 41–58). New York, Academic Press.

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

Grossmann, K., Fremmer-Bombik, E., Rudolph, J., & Grossmann, K. (1988). Maternal attachment representations as related to patterns of infant–mother attachment and maternal care during the first year. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 241–260). Oxford, UK: Clarendon Press.

Grossmann, K., Grossmann, K. E., & Kindler, H. (2005). Early care and the roots of attachment and partnership representations: The Bielefeld and Regensburg longitudinal studies. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 98–136). New York: Guilford Press.

Haft, W. L., & Slade, A. (1989). Affect attunement and maternal attachment: A pilot study. *Infant Mental Health Journal*, 10, 157–172.

Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development*, 71, 690–694.

Hauser, S. T., Golden, E., & Allen, J. P. (2006). Narrative in the study of resilience. *Psychoanalytic Study of the Child*, 61, 205–227.

Heinicke, C. M., Goorsky, M., Levine, M., Ponce, V., Ruth, G., Silverman, M., et al. (2006). Pre- and postnatal antecedents of a home visiting intervention and family developmental outcome. *Infant Mental Health Journal*, 27, 91–119.

Heinicke, C. M., & Levine, S. M. (2008). The AAI anticipates the outcome of a relation-based early intervention. In H. Steele & M. Steele (Eds.),

Clinical applications of the Adult Attachment Interview (pp. 99–125). New York: Guilford Press.

Hesse, E. (1996). Discourse, memory, and the Adult Attachment Interview: A note with emphasis on the emerging cannot classify category. *Infant Mental Health Journal, 17*, 4–11.

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

Hesse, E., & Main, M. (1999). Second-generation effects of unresolved trauma in non-maltreating parents: Dissociated, frightened, and threatening parental behavior. *Psychoanalytic Inquiry, 19*, 481–540.

Hesse, E., & Main, M. (2000). Disorganized infant, child, and adult attachment: Collapse in behavioral and attentional strategies. *Journal of the American Psychoanalytic Association, 48*, 1097–1127.

Hesse, E., & Main, M. (2006). Frightened, threatening, and dissociative parental behavior in low-risk samples: Description, discussion, and interpretations. *Development and Psychopathology, 18*, 309–343.

Hesse, E., & van IJzendoorn, M. H. (1998). Parental loss of close family members and propensities towards absorption in offspring. *Developmental Science, 1*, 299–305.

Hesse, E., & van IJzendoorn, M. H. (1999). Propensities towards absorption are related to lapses in the monitoring of reasoning or discourse during the Adult Attachment Interview: A preliminary investigation. *Attachment and Human Development, 1*, 67–91.

Hughes, P., & MacGauley, G. (1997). Mother–infant interaction during the first year with a child who shows disorganization of attachment. *British Journal of Psychotherapy, 14*, 147–158.

Hughes, P., Turton, P., Hopper, E., McGauley, G. A., & Fonagy, P. (2001). Disorganized attachment behavior among infants born subsequent to stillbirth. *Journal of Child Psychology and Psychiatry, 42*, 791–801.

Jacobvitz, D. (2008). Afterword. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 471–486). New York: Guilford Press.

Jacobvitz, D., Booher, C., & Hazen, N. (2001, February). *Communication within the dyad: An attachment-theoretical perspective*. Paper presented at the meeting of the Society of Social and Personality Psychologists, San Antonio, TX.

Jacobvitz, D., Leon, K., & Hazen, N. (2006). Does expectant mothers' unresolved trauma predict frightened/frightening maternal behavior?: Risk and protective factors. *Development and Psychopathology, 18*, 363–379.

Katz, L. F., Gottman, J. M., Shapiro, A. F., & Carrerre, S. (1997). *The Meta-Emotion Interview for parents of toddlers*. Unpublished manuscript, University of Washington, Seattle.

Kazui, M., Endo, T., Tanaka, A., Sakagami, H., & Suganuma, M. (2000). Intergenerational transmission of attachment: Japanese mother–child dyads. *Japanese Journal of Educational Psychology, 48*, 323–332.

Kernberg, O. F. (1984). *Severe personality disorders: Psychotherapeutic strategies*. New Haven, CT: Yale University Press.

Kobak, R. R. (1993). *The Attachment Q-Sort*. Unpublished manuscript, University of Delaware.

Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development, 59*, 135–146.

Koren-Karie, N., Sagi-Schwartz, A., & Joels, T. (2003). Absence of attachment representations (ARR) in the adult years: The emergence of a new AAI classification in catastrophically traumatized Holocaust survivors. *Attachment and Human Development, 5*, 381–397.

Korfmacher, J., Adam, E., Ogawa, J., & Egeland, B. (1997). Adult attachment: Implications for the therapeutic process in a home intervention. *Applied Developmental Science, 1*, 43–52.

Levy, K. N., Meehan, K. B., Kelly, K. M., Reynoso, J. S., Weber, M., Clarkin, J. F., et al. (2006). Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *Journal of Consulting and Clinical Psychology, 74*, 1027–1040.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.

Lyons-Ruth, K., Bronfman, E., & Parsons, E. (1999). Maternal frightened, frightening, or atypical behavior and disorganized infant attachment patterns. In J. Vondra & D. Barnett (Eds.), Atypical patterns of infant attachment. *Monographs of the Society for Research in Child Development, 64*(3, Serial No. 258), 67–96.

Lyons-Ruth, K., Connell, D. B., Zoll, D., & Stahl, J. (1987). Infants at social risk: Relations among infant maltreatment, maternal behavior, and infant attachment behavior. *Developmental Psychology, 23*, 223–232.

Madigan, S., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., Moran, G., Pederson, D. R., & Benoit, D. (2006). Unresolved states of mind, anomalous parental behavior, and disorganized attachment: A review and meta-analysis of a transmission gap. *Attachment and Human Development, 8*, 89–111.

Madigan, S., Moran, G., & Pederson, D. R. (2006). Unresolved states of mind, disorganized attachment relationships, and disrupted interactions of adolescent mothers and their infants. *Developmental Psychology, 42*, 293–304.

Main, M. (1981). Avoidance in the service of attachment: A working paper. In K. Immelmann, G. Barlow, L. Petrinovitch, & M. Main (Eds.), *Behavioral development: The Bielefeld interdisciplinary project* (pp. 651–693). New York: Cambridge University Press.

Main, M. (Chair). (1985, April). *Attachment: A move*

to the level of representation. Symposium conducted at the meeting of the Society for Research in Child Development, Toronto.

Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development, 33*, 48–61.

Main, M. (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) models of attachment: Findings and directions for future research. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 127–159). London: Routledge.

Main, M. (1993). Discourse, prediction, and recent studies in attachment: Implications for psychoanalysis. *Journal of the American Psychoanalytic Association, 41*(Suppl.), 209–244.

Main, M. (1999). Mary D. Salter Ainsworth: Tribute and portrait. *Psychoanalytic Inquiry, 19*, 682–736.

Main, M. (2000). The organized categories of infant, child, and adult attachment: Flexible vs. inflexible attention under attachment-related stress. *Journal of the American Psychoanalytic Association, 48*, 1055–1096.

Main, M. (2001, April). *Attachment to mother and father in infancy, as related to the Adult Attachment Interview and a self-visualization task at age 19*. Poster presented at the biennial meeting of the Society for Research in Child Development, Minneapolis, MN.

Main, M. (2008, March). *The organized categories of the Adult Attachment Interview*. Paper presented at the conference on Clinical Applications of Attachment: The Adult Attachment Interview, University of California, Los Angeles.

Main, M., & Cassidy, J. (1988). Categories of response to reunion with the parent at age six: Predicted from infant attachment classifications and stable over a one-month period. *Developmental Psychology, 24*, 415–426.

Main, M., DeMoss, A., & Hesse, E. (1989). *Unresolved (disorganized/disoriented) state of mind with respect to experiences of loss*. Unpublished manuscript, University of California at Berkeley.

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

Main, M., & Goldwyn, R. (1984b). Predicting rejection of her infant from mother's representation of her own experience: Implications for the abused–abusing intergenerational cycle. *International Journal of Child Abuse and Neglect, 8*, 203–217.

Main, M., & Goldwyn, R. (1988). *Interview-based attachment classifications: Related to infant–mother and infant–father attachment*. Unpublished manuscript, University of California at Berkeley.

Main, M., & Goldwyn, R. (1998). *Adult attachment scoring and classification system, Version 6.0*. Unpublished manuscript, University of California at Berkeley.

Main, M., & Goldwyn, R. (2008). [Parental states of mind and infant attachment in the Bay Area sample]. Unpublished raw data, University of California at Berkeley.

Main, M., Goldwyn, R., & Hesse, E. (2003). *Adult attachment scoring and classification system, Version 7.2*. Unpublished manuscript, University of California at Berkeley.

Main, M., Goldwyn, R., & Hesse, E. (2008). *The Adult Attachment Interview: Scoring and Classification System, Version 8*. Manuscript in preparation, University of California at Berkeley.

Main, M., & Hesse, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 161–182). Chicago: University of Chicago Press.

Main, M., & Hesse, E. (1991). *Frightening, frightened, dissociated, deferential, sexualized and disorganized parental behavior: A coding system for frightening parent–infant interactions*. Unpublished manuscript, University of California at Berkeley.

Main, M., & Hesse, E. (1998). *Frightening, frightened, dissociated, deferential, sexualized and disorganized parental behavior: A coding system for frightening parent–infant interactions*. Unpublished manuscript, University of California at Berkeley.

Main, M., Hesse, E., & Goldwyn, R. (2008). Studying differences in language usage in recounting attachment history: An introduction to the AAI. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 31–68). New York: Guilford Press.

Main, M., Hesse, E., & Kaplan, N. (2005). Predictability of attachment behavior and representational processes at 1, 6, and 19 years of age: The Berkeley longitudinal study. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 245–304). New York: Guilford Press.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development, 50*(1–2, Serial No. 209), 66–104.

Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment pattern. In T. B. Brazelton & M. W. Yogman (Eds.), *Affective development in infancy* (pp. 95–124). Norwood, NJ: Ablex.

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

Main, M., & Weston, D. (1981). The quality of the toddler's relationship to mother and to father: Related to conflict behavior and the readiness to establish new relationships. *Child Development, 52*, 932–940.

Manassis, K., Bradley, S., Goldberg, S., Hood, J., & Swinson, R. P. (1994). Attachment in mothers with anxiety disorders and their children. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 1106–1113.

Mayseless, O., & Scharf, M. (2007). Adolescents' attachment representations and their capacity for intimacy in close relationships. *Journal of Research on Adolescence, 17*, 23–50.

McKinnon, C. C., Moran, G., & Pederson, D. (2004). Attachment representations of deaf adults. *Journal of Deaf Studies and Deaf Education, 9*, 366–386.

McMahon, C. A., Barnett, B., Kowalenko, N. M., & Tennant, C. C. (2006). Maternal attachment state of mind moderates the impact of post-natal depression on infant attachment. *Journal of Child Psychology and Psychiatry, 47*, 660–669.

Minde, K., & Hesse, E. (1996). The role of the Adult Attachment Interview in parent–infant psychotherapy: A case presentation. *Infant Mental Health Journal, 17*, 115–126.

Moran, G., Bailey, H. N., Gleason, K., DeOliveira, C. A., & Pederson, D. R. (2008). Exploring the mind behind unresolved attachment: Lessons from and for attachment-based interventions with infants and their traumatized mothers. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 371–398). New York: Guilford Press.

Mura, S. S. (1983). Licensing violations: Legitimate violations of Grice's conversational principle. In R. T. Craig & K. Tracy (Eds.), *Conversational coherence: Form, structure, and strategy*. Beverly Hills, CA: Sage.

Ogawa, J. R., Sroufe, L. A., Weinfield, N. S., Carlson, E. A., & Egeland, B. (1997). Development and the fragmented self: Longitudinal study of dissociative symptomatology in a nonclinical sample. *Development and Psychopathology, 9*, 855–879.

Paley, B. J., Cox, M. J., Burchinal, M. R., & Payne, C. C. (1999). Attachment and marital functioning: Comparison of spouses with continuous-secure, earned-secure, dismissing, and preoccupied attachment stances. *Journal of Family Psychology, 13*, 580–597.

Paley, B. J., Cox, M. J., Harter, K. S., & Margand, N. A. (2002). Adult attachment stance and spouses' marital perceptions during the transition to parenthood. *Attachment and Human Development, 4*, 340–360.

Patrick, M., Hobson, R. P., Castle, D., Howard, R., & Maughan, B. (1994). Personality disorder and the mental representation of early social experience. *Development and Psychopathology, 6*, 375–388.

Pearson, J. L., Cohn, D. A., Cowan, P. A., & Cowan, C. P. (1994). Earned- and continuous-security in adult attachment: Relation to depressive symptomatology and parenting style. *Development and Psychopathology, 6*, 359–373.

Phelps, J. L., Belsky, J., & Crnic, K. (1998). Earned security, daily stress, and parenting: A comparison of five alternative models. *Development and Psychopathology, 10*, 21–38.

Pianta, R. C., Egeland, B., & Adam, E. K. (1996). Adult attachment classification and self-reported psychiatric symptomatology as assessed by the Minnesota Multiphasic Personality Inventory–2. *Journal of Consulting and Clinical Psychology, 64*, 273–281.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.

Rifkin-Graboi, A. (2008). Attachment status and salivary cortisol in a normal day and during simulated interpersonal stress in young men. *Stress, 11*, 210–224.

Riggs, S. A., & Jacobvitz, D. (2002). Expectant parents' presentations of early attachment relationships: Associations with mental health and family history. *Journal of Consulting and Clinical Psychology, 70*, 195–204.

Roisman, G. I. (2006). The role of adult attachment security in non-romantic, non-attachment-related first interactions between same-sex strangers. *Attachment and Human Development, 8*, 341–352.

Roisman, G. I., Fortuna, K., & Holland, A. (2006). An experimental manipulation of retrospectively defined earned and continuous attachment security. *Child Development, 77*, 59–71.

Roisman, G. I., Fraley, R. C., & Belsky, J. (2007). A taxometric study of the Adult Attachment Interview. *Developmental Psychology, 43*, 675–686.

Roisman, G. I., Holland, A., Fortuna, K., Fraley, R. C., Clausell, E., & Clarke, A. (2007). The Adult Attachment Interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology, 92*, 678–697.

Roisman, G. I., Madsen, S. D., Hennighausen, K. H., Sroufe, L. A., & Collins, W. A. (2001). The coherence of dyadic behavior across parent–child and romantic relationships as mediated by the internalized representation of experience. *Attachment and Human Development, 3*, 156–172.

Roisman, G. I., Padrón, E., Sroufe, L. A., & Egeland, B. (2002). Earned-secure attachment status in retrospect and prospect. *Child Development, 73*, 1204–1219.

Roisman, G. I., Tsai, J. L., & Chiang, K. H. (2004). The emotional integration of childhood experience: Physiological, facial expressive, and self-reported emotional response during the Adult Attachment Interview. *Developmental Psychology, 40*, 776–789.

Rosenthal, R. (1991). *Meta-analytic procedures for social research* (rev. ed.). Newbury Park, CA: Sage.

Sagi, A., van IJzendoorn, M. H., Joels, T., & Scharf, M. (2002). Disorganized reasoning in Holocaust survivors: An attachment perspective. *American Journal of Orthopsychiatry, 72*, 194–203.

Sagi, A., van IJzendoorn, M. H., Scharf, M. H., Joels, T., Koren-Karie, N., Mayseless, O., et al. (1997). Ecological constraints for intergenerational transmission of attachment. *International Journal of Behavioral Development, 20*, 287–299.

Sagi, A., van IJzendoorn, M. H., Scharf, M. H., Koren-Karie, N., Joels, T., & Mayseless, O. (1994). Stability and discriminant validity of the Adult Attachment Interview: A psychometric study in young Israeli adults. *Developmental Psychology, 30*, 771–777.

Sagi-Schwartz, A., & Aviezer, O. (2005). Correlates of

attachment to multiple caregivers in kibbutz children from birth to emerging adulthood: The Haifa longitudinal study. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 165–197). New York: Guilford Press.

Sagi-Schwartz, A., Koren-Karie, N., & Joels, T. (2003). Failed mourning in the Adult Attachment Interview: The case of Holocaust survivors. *Attachment and Human Development, 5*, 398–409.

Sagi-Schwartz, A., van IJzendoorn, M. H., Grossmann, K. E., Joels, T., Grossmann, K., Scharf, M., et al. (2003). Attachment and traumatic stress in female Holocaust child survivors and their daughters. *American Journal of Psychiatry, 160*, 1086–1092.

Santona, A., & Zavattini, G. C. (2005). Partnering and parenting expectations in adoptive couples. *Sexual and Relationship Therapy, 20*, 309–322.

Scharf, M., Mayseless, O., & Kivenson-Baron, I. (2004). Adolescents' attachment representations and developmental tasks in emerging adulthood. *Developmental Psychology, 40*, 430–444.

Schuengel, C., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (1999). Frightening maternal behavior linking unresolved loss and disorganized infant attachment. *Journal of Consulting and Clinical Psychology, 67*, 54–63.

Slade, A., Belsky, J., Aber, J. L., & Phelps, J. L. (1999). Mothers' representations of their relationships with their toddlers: Links to adult attachment and observed mothering. *Developmental Psychology, 35*, 611–619.

Solomon, J., George, C., & De Jong, A. (1995). Children classified as controlling at age six: Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychopathology, 7*, 447–463.

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

Steele, H., Phibbs, E., & Woods, R. (2004). Coherence of mind in daughter caregivers of mothers with dementia: Links with their mothers' joy and relatedness on reunion in a Strange Situation. *Attachment and Human Development, 6*, 439–450.

Steele, H., & Steele, M. (2007, July). *Intergenerational patterns of attachment: From pregnancy in one generation to adolescence in the next.* Paper presented at the International Attachment Conference, Changing Troubled Attachment Relations: Views from Research and Clinical Work, Braga, Portugal.

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

Steele, M., Hodges, J., Kaniuk, J., Hillman, S., & Henderson, K. (2003). Attachment representations and adoption: Associations between maternal states of mind and emotional narratives in previously maltreated children. *Journal of Child Psychotherapy, 29*, 187–205.

Steele, M., Steele, H., & Johansson, M. (2002). Maternal predictors of children's social cognition: An attachment perspective. *Journal of Child Psychology and Psychiatry, 43*, 861–872.

Torgerson, A. M., Grova, B. K., & Sommerstad, R. (2007). A pilot study of attachment patterns in adult twins. *Attachment and Human Development, 9*, 127–138.

Turton, P., McGauley, G., Marin-Avellan, L., & Hughes, P. (2001). The Adult Attachment Interview: Rating and classification problems posed by non-normative samples. *Attachment and Human Development, 3*, 284–303.

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

van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (1996). Attachment representations in mothers, fathers, adolescents, and clinical groups: A meta-analytic search for normative data. *Journal of Consulting and Clinical Psychology, 64*, 8–21.

van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2008). The distribution of adult attachment representations in clinical groups: A meta-analytic search for patterns of attachment in 105 AAI studies. In H. Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 69–96). New York: Guilford Press.

Wampler, K. S., Shi, L., Nelson, B. S., & Kimball, T. G. (2003). The Adult Attachment Interview and observed couple interaction: Implications for an intergenerational perspective on couple therapy. *Family Process, 42*, 497–515.

Ward, M. J., & Carlson, E. A. (1995). Associations among adult attachment representations, maternal sensitivity, and infant–mother attachment in a sample of adolescent mothers. *Child Development, 66*, 69–79.

Ward, M. J., Lee, S. S., & Polan, H. J. (2006). Attachment and psychopathology in a community sample. *Attachment and Human Development, 8*, 327–340.

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security in infancy and early adulthood: A twenty-year longitudinal study. *Child Development, 71*, 684–689.

Webster's new international dictionary of the English language. (1959). (2nd ed., unabridged). Springfield, MA: Merriam.

Weinfield, N. S., Sroufe, L. A., & Egeland, B. (2000). Attachment from infancy to adulthood in a high-risk sample: Continuity, discontinuity and their correlates. *Child Development, 71*, 695–702l

Zegers, M. A., Schuengel, C., van IJzendoorn, M. H., & Janssens, J. M. (2006). Attachment representations of institutionalized adolescents and their professional caregivers: Predicting the development of therapeutic relationships. *American Journal of Orthopsychiatry, 76*, 325–334.