Journal of the American Psychoanalytic Association

(2000). Journal of the American Psychoanalytic Association, 48:1055-1095

The Organized Categories of Infant, Child, and Adult Attachment: Flexible vs. Inflexible Attention Under Attachment-Related Stress

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From an evolutionary perspective, a central mechanism promoting infant survival is the maintenance of proximity to attachment figures. Consequently attachment figure(s) represent the infant's primary solution to experiences of fear. Aspects of the development of the field of attachment are outlined within this context, beginning with Bowlby's ethological/evolutionary theory, and proceeding to Ainsworth's early descriptions of infant-mother interaction in Uganda and Baltimore. Using a laboratory procedure called the strange situation, Ainsworth identified three organized patterns of infant response to separation from and reunion with the parent. Narratives derived from videotaped strange situation behavior of infants in each category (secure, avoidant, and resistant/ambivalent) are provided, together with a discussion of the prototypical sequelae of each category (e.g., school behavior, and separation-related narratives and drawings at age six). The Adult Attachment Interview (AAI) and the move to the level of representation are also described. AAI transcripts are presently analyzed according to the speaker's capacity to adhere to Grice's maxims of rational cooperative discourse, and three organized AAI categories, or states of mind with respect to attachment, have been identified (secure-autonomous, dismissing, and preoccupied). When the interview is administered to parents who have

This paper is dedicated to the memory of Alvin Goren (1927-1996), faculty member at the San Francisco Psychoanalytic Institute. The author wishes to thank the American Psychoanalytic Foundation, the Kohler-Stiftung Foundation, the Harris Foundation and the Sengstack Foundation for their support. She is grateful to Erik Hesse for critiquing this manuscript, and to Diana Diamond for her efforts in teaching her to write for this new audience. Based on an introduction to the field presented at the panel on attachment, Fall Meeting of the American Psychoanalytic Association, New York, December 20, 1997.

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been seen with their infants in the strange situation, each AAI category has repeatedly been found to predict that infant's strange situation response to that parent. Illustrations of the discourse characteristic of each category are provided, and it is noted that individuals with apparently unfavorable life histories are found to have secure offspring, providing that their history is recounted coherently. Like infant strange situation behavior, differences in adult security as identified through discourse patterning are interpreted in terms of attentional flexibility or inflexibility under attachment-related stress.

The primary aim of this paper is to provide an introduction to the field of attachment. In keeping with this intent, I present what may be the first comprehensive descriptive account of the behavior and language that researchers use to identify the three major, or *organized*, categories of infant, child, and adult attachment,[1,2] and point out that these categories can be understood in part as reflecting relative degrees of flexibility of attention in the face of attachment-related stress. In addition, I place considerable emphasis upon what I believe to be the still unfathomed depth of relation between attachment and language usage.

Although I will conclude by suggesting that we are now entering upon a new era in the study of attachment (see also Main 1999),[3] to this point the field can be seen as having developed in three principle phases. In the first, John Bowlby, drawing in part on observations of nonhuman primates, called attention

to the concept of an *attachment behavioral system* that functions to regulate infant safety in the environments in which we originally evolved (Bowlby 1969).[4] In this same

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1 To conserve space, this paper and its companion (Hesse and Main 2000; this volume) share a common reference list, which follows them on p. 1121. Additionally, many individual citations have not been included. The authors regret these exigencies; however, interested readers will find the individual studies listed in the cited review and overview papers.

2 The disorganized/disoriented categories of infant, child, and adult attachment are described in an accompanying paper (Hesse and Main 2000; this volume).

3 Discussions of attachment as it relates in particular to clinical work can be found in two issues of *Consulting and Clinical Psychology* (1996; vol. 64, nos. 1 and 2) and two issues of *Psychoanalytic Inquiry* (1999; vol. 19, nos. 4 and 5); the journal *Attachment and Human Development*; and many chapters written by clinicians for the *Handbook of Attachment* (Cassidy and Shaver 1999).

4 While Bowlby set out with an emphasis upon the behavior of infants and young children, he proposed that attachments exist throughout the lifetime—as seen, for example, in the *secure base* behavior that leads the members of a couple to turn to each other in times of stress (see also Hazan and Shaver 1994; Simpson and Rholes 1998), and responses to the death of a partner (see Bowlby 1980).

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volume, he described psychoanalytic theory as “an attempt to explain the functioning of personality, in both its healthy and its pathological aspects, in terms of ontogenesis” (1969, p. 4). Bowlby argued that his aims were in general consonant with those of Freud. Up to that time, however, the analyst's main source of data had been the speech, dreams, and retrospective accounts of adults. Bowlby proposed that a more prospective—and observational—approach to the development of repression, defense, splitting, and other processes should be under-taken, permitting theoreticians and researchers to work *forward* from a particular well-specified event to its sequelae. Bowlby took as his own particular entrée the responses of children who were separated from their parents and placed in unfamiliar environments such as hospitals and residential nurseries. The sequelae of such major or “traumatic” separations included not only the emergence of anxiety and ambivalence with respect to previously loved persons, but eventually a state of detachment, in which both affectionate and hostile feelings were repressed.

Mary Ainsworth took the lead in the second phase of the development of the field with her intensive naturalistic observations of infant-mother interaction in the home in Kampala, Uganda (Ainsworth 1967), and Baltimore, Maryland (Ainsworth et al. 1978). In conjunction with the Baltimore study, Ainsworth developed the laboratory-based *strange situation* procedure. This made use of an infant's responses to very brief separations from, and reunions with, a given parent to classify the organization of its attachment to that parent as *secure, avoidant*, or *resistant/ambivalent*.[5] Secure organization was found to be predictable from the mother's sensitivity to the infant's signals and communications in the home, while the two insecure forms of attachment organization—detached *avoidance* and overtly anxious *resistance/ambivalence*—were related respectively to maternal rejection and unpredictability.[6] Astonishingly, Ainsworth discovered that the unfavorable reunion responses previously associated with older toddlers' reactions to major separations from the parent could appear in *nonseparated*

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5 Not every individual's behavior or language is sufficiently organized for single-category placement. Some infants, as well as some adults, are pervasively unclassifiable, and a fifth attachment category, *Cannot Classify* (Hesse 1996, 1999a) is coming into increasing use.

6 Later a fourth category of infant strange situation behavior, called *disorganized/disoriented*, was developed and described by Judith Solomon and myself (Hesse and Main 2000; this volume).

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twelve-month-olds, in all likelihood simply as the result of the cumulative strain (Kris 1956; Sandler 1967) imposed by limited or unpredictable maternal responsiveness.

Ainsworth's findings were greeted with enthusiasm, and researchers (particularly Sroufe and Egeland at Minnesota) began to conduct studies *starting*, rather than ending, with the strange situation. Here the child's behavior was observed in preschool and school settings. Children who had been secure with their mothers in the strange situation during infancy were found to enjoy more favorable relations than others with their peers and teachers (see Weinfield et al. 1999).

The third stage in the study of attachment opened with a “move to the level of representation” (Main, Kaplan, and Cassidy 1985, p. 66) which took place in the mid- 1980s, and is largely associated with work presented in a monograph edited by Bretherton and Waters (1985). My own preparation for this shift to a representational emphasis in studying attachment rested in part upon earlier review of a film series developed by James and Joyce Robertson (1967-1972). Whereas Ainsworth's work had shown that repeated rejection of attachment behavior on the part of the mother could lead an infant to avoid her in stressful situations, the Robertsons' separation films demonstrated that toddlers who in all likelihood had never previously been significantly rejected could also come to avoid their mothers *on the basis of changes in mental or emotional processes taking place in the absence of interaction*. I was particularly struck by the film *Thomas* (Robertson and Robertson 1967-1972), in which a two-year-old who had previously enjoyed a harmonious relationship with his mother was several times presented with her photograph during an extended foster-care placement. At first Thomas kissed and fondled the photograph. Several days later, however, he backed away from it, looking down and fiddling with a toy he was holding. In response to a final presentation of his mother's photograph, Thomas actively turned his back to it with an anxious expression. Since a photograph cannot “behave,” it cannot be said to have itself elicited Thomas's changing reactions. Since in addition Thomas had not seen his mother during this period, the gradual development of avoidance of the photograph must have included aspects of changes in their imagined relationship.

The Bretherton and Waters monograph included a paper by Bretherton that stressed Bowlby's concept of the “internal working model” of attachment figures in the context of state of the art thinking

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and research in the domain of cognitive psychology. At the same time, our laboratory presented the results of a sixth-year follow-up of Bay Area families in which infant-mother (and independently infant-father) dyads had been observed in the strange situation when the children were twelve to eighteen months of age (Main, Kaplan, and Cassidy 1985). We found that differences in infant strange situation behavior predicted corresponding differences in: narratives provided by six-year-olds in response to pictured parent-child separations (see also Kaplan 1987); children's behavioral responses to reunion with the parent following a one-hour separation (see also Main and Cassidy 1988); transcripts of child-parent discourse on reunion (see also Main 1995; Strage and Main 1985); and response to presentation of a family photograph taken prior to the hour-long separation (Main, Kaplan, and Cassidy 1985). During this same separation, we asked the children to make drawings of their families, and the configuration of these drawings was also found to be highly predictable from first-year attachment to the mother (Kaplan and Main 1984, 1986).[7] These results were of widespread interest. If, for example, children's separation-related narratives were predictable from infant strange situation behavior with the mother, then different patterns of infant-mother interaction must have led to the development not only of *different behavior*, but also of *different representational processes*.

In this same article (Main, Kaplan, and Cassidy 1985) we also described the relation between infant strange situation response to a given parent five years previously and the form of that parent's narrative in response to the Adult Attachment Interview (George, Kaplan, and Main 1984, 1986, 1996). A system for analyzing verbatim AAI transcripts (Main and Goldwyn 1982-1998) indicated that—whether their childhood attachment-related experiences had been favorable or unfavorable—the parents of children who were secure with them in the strange situation tended to be coherent, clear, and collaborative

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7 Among these methods I should note that the assessment of attachment through sixth-year reunion behavior has been well replicated in its relation to first-year attachment, as has Kaplan's assessment of children's responses to separation-

related narratives (see Solomon and George 1999 for overview). Children's responses to family drawings have also been found predictable from strange situation behavior to the mother in the Minnesota sample, but there have been several non-replications as well, so family drawings should never be used as a singular assessment of attachment (see Main 1995). Insofar as we know, the analysis of child-parent reunion transcripts and children's response to presentation of a family photograph remain particular to our sample.

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during discussions of their own life histories. Further, specific kinds of difficulties in maintaining coherent, collaborative discourse predicted specific forms of insecure infant attachment. Ten years later, a meta-analysis demonstrated that our results had been replicated across at least fifteen further samples, and held even when the interview was conducted prior to the birth of the child (van IJzendoorn 1995).

Attachment: Evolutionary and Biological Foundations of the Theory

The behavioral manifestations of human attachment are familiar to all of us. However, while adults as well as infants have attachment figures (persons to whom they are most likely to turn under stress: see Hazan and Shaver 1994, Simpson and Rholes 1998), attachment is most readily observed in the intense concern that young children in unfamiliar surroundings exhibit regarding the whereabouts of parental figures. During early childhood (and later, in increasingly modified, less explicit forms), attachment is identified with: an insistent interest in *maintaining proximity* to one or a very few selected persons (usually but by no means necessarily biological relatives); the tendency to use these individuals as a *secure base* for exploration of unfamiliar environments; and *flight to the attachment figure(s) as a haven of safety in times of alarm*.

First attachments are ordinarily formed by seven months, and attachments develop with respect to only one or a few persons. It is understood to be the infant that selects its primary attachment figure(s), generally upon the basis of contingent social interactions (see Main 1999). As Cicchetti, Crittenden, and others have demonstrated (see Main 1995), attachments emerge as the product of interactions with maltreating persons as readily as they do with sensitively responsive ones, and the biologically based proclivity to form attachments ensures that only in extremely anomalous circumstances will a child remain unattached.

In articulating the central attachment-related characteristics of human infants, Bowlby drew attention to these behavior patterns as observed in young ground-living monkeys, and in human hunters and gatherers. Eventually Bowlby came to ascribe the development of these patterns to the functioning of an *attachment behavioral system*, and he postulated that this system—as deeply ingrained within our genetic

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response programming as are feeding and reproduction—would have had *primary and immediate responsibility for regulating infant safety and survival* in the environments in which we originally evolved.

Bowlby initially considered attachment behavior—that is, proximity-seeking and proximity-maintaining behavior focused upon specific figure(s)—to have evolved because it served the adaptive function of protecting the infant from predation (Bowlby 1969). While this is unquestionably one of the central evolutionary functions of attachment behavior, proximity to caregivers is now additionally understood to increase the likelihood that the infant will, for example, be sheltered from the elements, defended against attacks from conspecifics, and enabled to keep up with the movements of the troop (Main 1999). The centrality of attachment in an infant's survival-related behavioral repertoire is therefore readily comprehensible: death is far more likely to result from one hour's separation from caregiving figures than from a much longer period without food. For reasons such as these human and other ground-living primate infants evolved to continually monitor the accessibility of their attachment figures, and to attempt to maintain a reasonable degree of proximity even in relatively non-threatening situations.

In 1952, Robertson and Bowlby first presented their observations regarding toddlers' responses to major separations from their parents, and this work was carried forward into controlled settings by Heinicke and Westheimer (1966; see also Bowlby 1973). From these studies, it appeared that when toddlers were placed in unfamiliar surroundings that provided no stable subsidiary caregivers, they underwent three increasingly unfavorable stages of response to separation—*protest, despair*, and finally *detachment*. The initial protest stage was characterized by open preoccupation with the whereabouts of the attachment figure, expressed in hopeful calling and crying. Within a few days, however, separated toddlers entered a phase of despair; seemingly still preoccupied with the missing parent—as indicated by bouts of weak and increasingly hopeless crying—they became listless, and withdrew apparent interest from the environment. In the final stage, called detachment, the separated children began to attend to the immediate environment, including the nurses and other children. At that time, this change was referred to positively as "settling in." Children who reached this stage, however, actively avoided and ignored the primary attachment figure upon eventual reunion, and

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some seemingly failed even to recognize him or her (Heinicke and Westheimer 1966). In contrast—and pointing directly to repressive processes as opposed to simple failures of memory—the less previously important parent, other relatives, or neighbors were readily recognized and greeted. This detached response to the primary attachment figure could persist for days, weeks, or even months. These disturbing changes in relatedness were reminiscent of two kinds of difficulties observed in some adults following a major less: *chronic mourning*, which resembles despair; and *failed mourning*, which resembles detachment. Bowlby compared the onset of detachment to the onset of repression and defense.

Individual Differences in Organized Attachments During Infancy: Precursors and Behavioral and Representational Sequelae

While Bowlby was refining his theory, Mary Ainsworth was conducting her studies of infant-mother interactions in Uganda. In this year-long investigation, completed in 1954, she had set out to trace the development of attachment in twenty-six infants across the first year of life—noting, for example, the ages at which infants began to discriminate the mother from others, and later to cry specifically at her leave-taking. In addition, she observed that some infants seemed to be secure in their attachments to their mothers, some insecure, and some not yet attached. She hypothesized that these differences were related to differences in infant-mother interaction.

It was characteristic of Ainsworth that she saw the mothers of "insecurely attached" infants in a larger context and took into account factors likely to diminish almost any person's parental responsiveness. These factors included severe family illness, unhappy relations with a husband, overwhelming work pressures, or the presence of one or more unpleasant co-wives in the home. Here is Ainsworth's description of Muhamidi:

> *Muhamidi… had his mother almost exclusively to himself and became very attached to her, but his attachment was … insecure. Muhamidi's mother took him everywhere she went, and even worked in the garden with him slung on her back. She never left him with anyone else for more than a momentary absence. But she was an unhappy woman with*

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> *serious worries …. She had recently lost a four-year-old child, and her five-year-old [was seriously ill] …. Later, it emerged that her relations with her husband were also very unhappy; he expected her not only to grow the food, but to help harvest his cash crop of coffee, and she had no help with her two completely helpless children …. Her own mother now lived elsewhere, and although she was sure of her father's affections, he was busy, his wives were jealous of her, and*

she felt there was no real place for her [within his] household. There were other people who could help her, but no one really did [Ainsworth 1963, pp. 88-89].

In contrast, here is Ainsworth's description of a secure infant and his mother:

William was the youngest of 10 children…. The mother, single-handed, had reared all of these children, grown their food and prepared it, made many of their clothes, and looked after a large mud and wattle house which was tastefully decorated and graced by a flower garden. She was a relaxed, serene person, who could talk to us in an unhurried way, devote time to playful, intimate interchange with William, and also concern herself with the other children according to their needs …. She used a wheelbarrow as a pram, and there lay William, nested amid snowy white cotton cloths [Ainsworth 1963, pp. 85-86].

Like Bowlby (1969), Ainsworth was open-minded regarding the possibility of change in early relationships. Insecure infants had, she believed, the potential to become secure, as she illustrated in a description of a very insecure infant whose relationship with his mother improved once she had had, and won, a fight with the senior wife—a big, overbearing woman who subsequently left the compound. At the same time, Ainsworth believed that some children who were secure during infancy were at risk for later insecurity. For example, an infant named Paulo was considered secure at the time of Ainsworth's observations, but taking note of the other children in the family, she worried whether he would remain so, and compared William and Paulo as follows:

Two of the babies in my sample, Paulo and William, are both in the secure-attached groups. Yet the prognosis for their mental health differs if one is to judge from the mother's behavior towards the other children in the family and their response to it. William's mother distributes her time and affection among all her children. Paulo's mother devotes herself very largely to the baby, which makes the older children feel neglected and rejected. Perhaps this illustrates just one

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way in which the realtion between infant attachment and future mental health is anything but simple [1963, pp. 111-112].

As these case summaries illustrate, Ainsworth's observations were written in exceptionally plain English. However, she saw attachment-related behavior as the manifestation of something deeper, and did not confuse either the patterns she observed or attachment itself with “mere” behavior. By 1967, concluding the write-up of her Uganda study, she stated:

We [have been] concerned here with nothing less than the nature of love and its origins in the attachment of a baby to his mother …. Attachment is manifested through [specific] patterns of behavior, but the patterns themselves do not constitute the attachment. Attachment is internal …. This internalized something that we call attachment has aspects of feelings, memories, wishes, expectancies, and intentions, all of which… serves as a kind of filter for the reception and interpretation of interpersonal experience and as a kind of template shaping the nature of outwardly observable response [Ainsworth 1967, p. 429].

Ainsworth's Baltimore study was originally intended to replicate her Uganda findings. This time she and her assistants observed each infant-mother dyad in four-hour blocks, beginning shortly after the infant's birth and continuing at approximately three-week intervals thereafter. Notes were taken unobtrusively, and then dictated. By the end of the year, the transcribed running accounts of each sixty to eighty hours of home observation came to about 200 single-spaced pages per dyad.

Ainsworth's strange situation procedure was designed in the course of a single hour, as she and one of her primary assistants (Barbara Wittig) sat down to devise an “experiment” to add to their heretofore purely observational longitudinal study. The procedure would be used as each infant reached twelve months of age, and was expected to demonstrate the universality of infant attachment behavior in response to natural clues to danger (Bowlby 1973), including (a) the approach of an unfamiliar person (b) in an unfamiliar setting (c) from which the attachment figure departs. In this setting, the parent twice leaves, and twice returns. A stranger twice enters the room; the infant is once left alone with the stranger, and is once left alone entirely. Separation episodes are quickly terminated in cases of definitive distress.

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Surprisingly, given that it has become a measure par excellence of individual differences, the strange situation was developed with the aim of illustrating *universals* regarding attachment and exploratory behavior in one-year-olds. Thus—setting out to demonstrate that Bowlby was correct regarding the response characteristics of virtually all one-year-old infants—Ainsworth anticipated that the above combined “natural clues to danger” would lead to infant crying at least by the time of the second separation, and to rapid approach upon reunion. Once infant and mother were reunited, however, it was assumed that the mother's presence would provide sufficient security to permit the infant to return to play.

While a majority (thirteen of twenty-three)[8] of infants behaved as expected and were later termed *secure* (Group B), to Ainsworth's amazement six showed little or no distress at being left alone in the unfamiliar environment, and then avoided and ignored the mother upon her return. They behaved strikingly like older toddlers who had reached the stage of detachment in response to major separations, as described by Robertson and Bowlby (1952). These infants, called *avoidant* (Group A), seemed to Ainsworth to be responding to this stressful situation by repressing expressions of both anxiety and anger. As though in mirror image, the four remaining infants differed from all the others in that they were too distressed to engage in exploration or play even when the mother was present. Termed *resistant/ambivalent* (Group C), these infants seemed preoccupied with the mother throughout the procedure, and yet too angry and/or distressed to take comfort in her return. The average proportions of A, B, and C infants in studies conducted around the world closely echo the proportions in Ainsworth's Baltimore sample, with the majority in most cultures being judged secure (van IJzendoorn and Sagi 1999). Surprisingly, infant attachment has not been found consistently related either to sex or to birth order.

Intrigued by the unexpected differences observed in home-reared infants' responses to minimal separations, Ainsworth undertook a blind investigation of the extensive narrative records she had collected of infant-mother interaction in the home. This study revealed three differing patterns of caregiving, each of which, remarkably, was associated with a particular category of infant strange situation

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8 For three of the twenty-six infants, the procedure was not conducted or was invalid (due to infant illness, for example).

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behavior.[9] I will now provide narratives of the videotaped strange situation behavior of three twelve- to fifteen-month-old infants, who had been judged respectively secure, avoidant, and resistant/ambivalent during the strange situation. Following each narrative I present a more complete overview of associated patterns of caregiving as described by Ainsworth. I then discuss the likely later behavioral and representational sequelae for children originally placed in the three different response categories vis-à-vis the mother at one year. Coders score each infant on four separate seven-point scales for *proximity-seeking, proximity-avoiding, contact-maintaining* and *contact-resistance* during each reunion. Only then is the infant assigned to a category—in fact, to both a general category and to a more specific subcategory. Space limitations, however, confine us to discussions by general category.

Ben

I begin by describing an infant who displays a prototypically “secure,” or “B,” behavioral and emotional patterning within the strange situation procedure. This particular response is shown by most home-reared one-year-olds in low-risk samples worldwide (van IJzendoorn and Sagi 1999). I articulate the procedure here at greater length than for the infants who follow, to give the reader a sense of the strange situation as a whole.

Opening. Ben, a fifteen-month-old boy, appears sturdy, energetic and competent. His mother is young, with a soft manner. Ben immediately begins to actively explore the toys and the room,

chattering to his mother and holding up toys for her to look at or comment on. Following our directions to "respond to your infant as necessary, but do not direct his activities," his mother sits leaning forward, quietly attentive and responsive.

Stranger entrance. When the young woman playing the part of the stranger enters the room in the second episode, Ben goes to his mother, leaning back against her knees. The stranger invites Ben to play, and mother gently encourages him to do so.

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9 Many subsequent investigations, such as our Bay Area study of 189 families, have shown that an infant's response to one parent is not informative as to response to the second parent. In other words, an infant secure with the mother might well be avoidant of the father. This finding is of course consonant with the proposal that strange situation response to a given person represents a specific interactional history rather than infant temperament. Appendix I discusses indications that for most organized infants in low-risk samples constitutional factors are likely to play a comparatively limited role.

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First separation: Infant left with stranger. Ben has just begun to play with the stranger, when the mother slips quietly from the room. Again in keeping with directions, she leaves her purse behind so that Ben will know she will soon return. Ben does not cry yet, but almost immediately goes to the door and begins calling "Mama! Mama!" The stranger tries to distract him, and he briefly quiets and looks around the room, then calls again. While his calling was initially simply communicative, he is now increasingly distressed. The stranger is holding him on her lap as he hears his mother's voice, and he leans out from the stranger's body, stretching his arms towards the door.

First reunion. By the time the door opens, Ben is crying fully. In accordance with instructions, his mother pauses in the doorway a moment, and Ben rises from the stranger's lap and walks quickly to her. Bending at once to receive him, his mother picks him up. He leans closely into her and stops crying immediately. After a full embrace, Ben straightens up and as the stranger leaves, he turns and waves to her, which leads his mother to laugh and say "Bye-bye" for him. Ben stands on his mother's lap, and after looking around the room, he quickly hugs her neck once more. Very soon, however, Ben begins to chatter to her about the lights, the toys, and other objects. She helps him down, and he undertakes a full exploration of the environment once more.

Before the opening of the next episode, a knock from the observation window signals the mother to depart again. Ben follows her quickly to the door, and grasps her hand. She is firm, gently pushing his hand back while reassuring him of her return.

Second separation: Infant alone. Ben begins crying and calling at once. He seems highly distressed, and this "infant alone" episode is terminated immediately.

Separation from mother continued, but stranger returns. This time, the stranger cannot either comfort or distract Ben, and his impassioned calling, with arms outstretched towards the door, continues ("Mama! Mama!"). This episode is also quickly terminated.

Second and final reunion. In keeping with our instructions, Ben's mother again pauses a moment in the doorway, and Ben moves to her as quickly as he can, arms stretched upwards. Once more (although this time instructed to do so) she picks him up in a full hug. He leans into her, and rests his head on her shoulder with a small, soft sob as she carriers him to sit on her lap in the chair. Mother says, "Well, I went away for just a minute, but I came back, didn't I?" With one more almost-contented sob, he grasps her neck, sits up, and looks around the room.

The stranger leaves, and Ben waves, gives mother a little hug, turns around to look at the door and waves yet again, saying "Bye-bye." Mother laughs softly, echoing "Bye-bye," and Ben begins his cheerful and active exploration of the room.

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Perhaps the most striking quality of this drama (and most observers experience it as such) is that Ben, calling or crying passionately on each separation, calms *immediately* upon his mother's return. Thus he shows flexibility of attention throughout the procedure, playing when mother is present, crying and calling when she is absent, and—following a brief embrace—returning to play on her return. (It was, I believe, Inge Bretherton who first noted that strange situations conducted with secure babies have the prototypic dramatic form of “boy loves girl, boy loses girl, boy gets girl back.”)

In the Baltimore sample, strange situation responses resembling Ben's were strongly[10] related to maternal sensitivity to infant signals and communications, and to the mother's tendency to be prompt and comforting in responding to distress (Ainsworth et al. 1978). Security was also associated with tender, careful holding, and with synchronous pacing of face-to-face interaction. Not unexpectedly, secure infants at home exhibited little anxiety, and were very unlikely to cry when their mothers moved from room to room about the house.

Knowing what we do about the likelihood of Ben's mother's comforting responsiveness to his distress when they are at home, we can see his strange situation response as a natural product of his expectations. Repeated interactions that have been generalized—Stern's (1985) RIGS—provide Ben with at least a primitive model of his mother as likely to respond to any expression of distress, and she has responded again in this unfamiliar environment. In a very simple way, this explains Ben's flexibility of attention. Because he has not been rejected, he has no difficulty expressing distress upon separation, or in going to his mother immediately on reunion. Moreover, because his mother's responsiveness is predictable, Ben relaxes and plays in her presence; if she leaves again, he will certainly protest again, and she will certainly quickly return.

Studies of a Minnesota poverty sample pioneered by Sroufe, Egeland and their colleagues (and see Suess, Grossmann, and Sroufe 1992 for a comparable German study) have demonstrated that the peer relations of children secure with their mothers during infancy are

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10 A meta-analysis relating many varying efforts to assess maternal sensitivity in relation to strange situation behavior (deWolff and van IJzendoorn 1997) showed a significant but modest association (with stronger results when the method of assessing sensitivity and the sample more closely approximated Ainsworth's). This result is not surprising given the fact that training in assessing sensitivity is not available, and no investigators assessed sensitivity across time periods comparable to Ainsworth's.

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likely to be positive, and that these children are more likely than others to be leaders. Their teachers (who were blind to their attachment status) typically consider these children ego-resilient, and treat them matter-of-factly. Secure children neither victimize other children nor are victimized themselves, since the victimizers among their peers find them assertive (Troy and Sroufe 1987; Weinfield et al. 1999).

Let us now consider what we know regarding children like Ben at six years. Main and Cassidy (1988) found that, following an hour-long separation from their mothers, secure children would typically greet the parent immediately but calmly, expressing pleasure and interest. These results were replicated in several low-risk samples (see, for example, Wartner et al. 1994).

The focus of our original presentation (Main, Kaplan, and Cassidy 1985), however, was largely on representational processes as predicted by early strange situation behavior. Here Kaplan (see also Kaplan 1987) made use of an adaptation of Hansburg's (1972) Separation Anxiety Test (SAT), which centers upon participants' descriptions of likely responses to pictured parent-adolescent separations. In conjunction with our longitudinal study, Kaplan presented each six-year-old with a set of pictures (taken from Klagsbrun and Bowlby [1976], and designed specifically for younger children) portraying separations ranging from a goodnight kiss to a two-week trip. As each picture was presented, the child was asked how the pictured child would be likely to *feel*, and what the child would be likely to *do*. Kaplan revised the original system of analysis, electing to transcribe and thereafter study the children's verbatim replies. Two qualities distinguished secure children like Ben. First, they were emotionally open regarding how a pictured child might *feel* (“I think that little boy might be pretty sad,” or, “I think she's getting really mad about this”). At

the same time, they presented constructive ideas regarding what the pictured child might *do* (“Well, he might call up some of his friends' parents and ask them to come stay with him”).

This suggests that a secure child can both accept that something untoward has happened, and imagine a way to “solve” the crisis constructively. Similar results to ours were obtained in the Minnesota poverty sample, in which free-form sandbox play was studied, rather than separation narratives. Here Rosenberg (1984) found that—in striking contrast to insecure children—secure children tended (a) to *invent a crisis*—“Oh, oh! The tiger swallows the little boy!”—and then

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to *follow it with a happy ending*—“And then the tiger spits him out! And the little boy is okay again.” (Using doll-play separations, responses similar to those noted by Kaplan and Rosenberg were observed in secure children by Solomon, George, and DeJong [1995]).

In addressing the question of how a “crisis-solution” narrative has been found so strikingly associated with secure attachment to the mother in three independent samples, it is useful to consider the strange situation behavior of sensitively treated infants, where the secure toddler responds openly and emotionally when faced with a crisis, but “solves” it by crying and successfully regaining the parent, thus creating a happy ending. The capacity for actively *creating* a crisis to solve is especially compelling: Apparently the secure children in the Minnesota sample could create (in play) situations of danger, aware that they would find a happy ending.

At Berkeley, Amy Strage and I developed a system for coding parent-child discourse (conversation) from transcripts of our videotaped sixth-year reunions (Strage and Main 1985; see Main 1995). Strikingly, the conversation of *both* infant-mother and infant-father dyads was reflective of the child's strange situation behavior five years previously with that same parent. In other words, a child secure with mother but avoidant with father in infancy would be found *fluent* in his or her discourse with mother (see below), but *restricted* in discourse with father five years later. (As in all the studies reviewed here, the coder was of course blind to infant strange situation behavior.) In a fluent conversation, such as this one between Ben and his mother, questions are directly asked and answered, both parties contribute to moving the dialogue forward, and the topics are unrestricted:

Mother (on entrance): Hi, Ben. Watcha been doing all this time? [Note that this question is “open,” giving Ben a chance to expand on his recent experiences.]

Ben: Well, I did some drawings. There's one on the wall over there. And I looked at some pictures and answered some questions about a boy. The pictures were kind of old-fashioned. Uh, Mom, take a look at the table.

Mother: Oh! It's not a table anymore. It's a sandbox.

Ben: Yeah, she [examiner] took the top off and then there was all that sand there and I made a farm, see, with a lot of animals, and this sheepdog here looks after them.

Mother: Yup, I can see that, and here's the sheepdog. Hey, he looks like our Rumpus!

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Ben: No he doesn't. Because Rumpus is fat. I mean he's a great dog, but he sure doesn't look like this dog, Rumpus is fat.

Mother: Well, guess who feeds him! You do! (Both laugh).

Ben: Uh-huh. Well okay, I'm going to rename him. How about ‘Porky’?

All of the children in our sample were asked to make drawings of their families towards the beginning of the laboratory session (the parents were absent at this time, while the AAI was being administered). Secure children would typically produce a picture showing centered and grounded figures, of moderate size, at moderate distances from one another, and—in accordance with the level of drawing ability—detailed and well differentiated. Although facial expressions would ordinarily be pleasant and calm, not all

figures would necessarily be smiling. Family members would, however, be likely to be pictured standing with arms out, as though ready to embrace a person who might enter the picture.

Although there is something symbolic about the portrayal of such a stance, this posture can readily be assumed in fact, and so such drawings cannot be considered fundamentally unrealistic. Secure children also had a realistic response to the family photograph taken at the out-set of the laboratory session and shown to them during separation. Typically they accepted the photograph, indicated some pleasure ("Daddy's shirt looks like mine, eh?"), and handed it back.

Adrian

Following is a narrative overview of a videotaped strange situation with an avoidant infant:

Adrian is a slight, serious-appearing boy, whose face is somewhat lacking in affect. His mother is well groomed, and quick and decisive in her movements. Adrian plays with the toys in the opening episode, and he is neutral but accepting of the stranger's approach. He takes no visible notice when his mother leaves, and plays with the stranger for the full three minutes without ever looking to the door.

The first reunion begins when his mother appears at the door and calls to him. Adrian leans—indeed, almost hunches—over the toy he has been playing with, and twists his body slightly away from her. As she gets closer, Adrian bends subtly further down and away. Mother goes to her chair, commenting on the toys Adrian is playing with and trying to direct his attention to new ones. He continues to look away steadily.

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When his mother leaves the room for the second time, Adrian is entirely alone. Strikingly, he shows no affective reaction and continues to focus upon the toys for the full three minutes. When the stranger enters, there is little change in Adrian's behavior. However, if anything, he is frindlier to the stranger than to his mother.

On the second reunion, Adrian makes a small sound of displeasure on hearing his mother's call ("Unh!"), and turns away during her approach. As she reaches down for him, he bends over and stiffens slightly. Holding him in her arms as she stands, she tries to attract his attention, but Adrian remains expressionless and leans away, pointing in a neutral manner to a toy on the floor. Mother puts him down, and remarks on his interest in the toy.

Two minutes later, the procedure ends. Adrian has neither looked at his mother nor attended to her conversation once.

Most observers respond to strange situation procedures involving avoidant infants with considerable boredom. There is no dramatic rise and fall of emotion, no crisis followed by a happy ending. Indeed, it appears that nothing has happened at all.

Ainsworth's records revealed that the avoidant pattern, like the secure one, had an interactional basis (Ainsworth et al. 1978). Infant avoidance was associated specifically with the mother's rejection of attachment behavior, both as expressed indirectly in remarks indicating annoyance about having had the infant, and as observed directly in her aversion to tactual contact with the infant. Some mothers of avoidant infants subtly pulled back when the infant attempted to touch them, and some sat in positions which forbade approach.

It may initially surprise readers to learn that Ainsworth's four most avoidant infants exhibited high anxiety and distress even as their mothers moved from room to room in their homes. This finding, however, was in keeping with Ainsworth's concept of avoidance as a kind of prodromal defense against the anxiety and anger aroused in unusually stressful settings. In analyses conducted at Berkeley, I found that scores for (by definition affectless) *avoidance* of the mother during the strange situation were highly related to the extent to which the infant, in contrast, displayed angry behavior towards the mother at home. However, despite the fact that neither anger nor anxiety found direct behavioral expression within the strange situation, later studies conducted by Sroufe and Waters (1977), and more recently by Spangler and

Grossmann (1993, 1999), indicate that, during the strange situation procedure, avoidant infants undergo considerable distress at the physiological level.

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Children in the Minnesota poverty sample who had been avoidant of the mother in infancy tended far more than others to harass and attempt to victimize their peers in nursery school (Troy and Sroufe 1987). In addition, teachers working with these children tended to reject them more than they did those who had been secure or resistant/ambivalent. By this time, then, it seemed that youngsters rejected by their mothers in infancy tended to elicit rejection from new persons (Sroufe and Fleeson 1986; see also Weinfield et al. 1999).

In sixth-year reunions videotaped in our own and succeeding samples, children avoidant of the mother during infancy again (but more subtly) avoided her, speaking minimally when spoken to, while keeping busy with gaze and often body directed away. In general, scores for avoidance of a given parent at age six were highly predictable from avoidance of that same parent five years previously. Strage and I found that conversations for avoidant dyads were *restricted*. The parent tends to ask only yes-or-no or rhetorical questions, neither of which encourages real dialogue. Discussion focuses primarily upon inanimate objects, both parent and child are conversational "minimalists," and there are often delays preceding response:

Mother (on entrance): "Hi, Adrian. Did you have fun? Did you have a good time?" [Note that a full response to such overtures is not required. Moreover, the child's response is guided to the upbeat answer "Yes."]

Adrian (following a minimal pause): "… Yeah."

Mother: "Isn't that great. Wow, there's a whole sandbox there. And a dog too."

Adrian (following a second minimal pause): "… Uh-huh, it's a sandbox."

In her study of children's narratives surrounding pictured parent-child separations, Kaplan (1987) found an unanticipated form of response that identified the previously avoidant children. While she had expected that these children would describe the pictured child as felling "nothing" during a separation, they instead often directly expressed appropriate *feelings* ("Sad, I think she's sad") on behalf of the pictured child. However, in sharp contrast to secure children, they could think of nothing that the pictured child might *do* with respect to the separation, typically responding "I don't know. I don't know," or "Nothing. Maybe run away."

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The family drawings of avoidant children, which we have described as *invulnerable*, often featured figures floating in thin air, widely separated, little differentiated, with stereotyped smiles. Startlingly, however, one or more individuals would often have been drawn without arms (the mother's earlier aversion to tactual contact should be remembered here), even when other aspects of the picture indicated that the drawing of arms was well within the child's capacities (Kaplan and Main 1984, 1986).[11] In the realistic drawings of secure children, persons do not float in the air, with missing arms.

It is striking to compare avoidant children's unrealistic treatment of the reality-oriented request to "draw your family" with their responses to presentation of the family photograph. Here, amazingly, children avoidant of the mother as infants frequently turned away, pulled away, looked away, refused to take the photograph, or even turned it around backwards. In other words, while their family drawings were often filled with (perhaps unintended) symbolism, in contrast they treated what in fact was only a symbol or representation as though it were real.

Cecilia

This narrative reflects the strange situation response of a resistant/ambivalent infant:

Cecilia displays distress immediately upon finding herself in the unfamiliar laboratory environment, even though her mother—a slightly disheveled, overwhelmed-appearing woman—is present. When the stranger enters, Cecilia looks suspicious and ill at ease, and refuses to engage in interactive play. Immediately upon separation, she begins to cry, while angrily resisting the stranger's attempts to comfort her.

Reunited with her mother, Cecilia cries loudly; when picked up, she does not settle, but continues crying, wriggling uncomfortably on her mother's lap. She does not calm even after the mother has held her for a full minute. As her mother attempts to interest her in the toys, she looks momentarily out into the room, then turns back to cling again to her mother, crying and apparently still uncomfortable. The mother repeats "Calm down, calm down, you're okay," but Cecilia refuses to get off her lap or engage in play.

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[11] To test this inference, Nancy Kaplan and I once informally asked children in different attachment categories to draw their families, and to draw a teddy bear. Several avoidant children again drew family members without arms, but drew full arms and paws upon the bear.

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When the mother leaves again, Cecilia begins crying loudly and crawls toward the door. The stranger enters at once, but Cecilia angrily resists her advances.

The mother is sent in almost immediately, and after a lengthy pause, in which she watches as Cecilia continues to cry, she picks her up and holds her. However, when she tries to put her down Cecilia throws herself backward in a tantrum movement. When mother reaches out to comfort her, her crying increases, and she closes her eyes, throwing herself about. Two minutes later, Cecilia remains focused on her mother, clinging to her knees and fussing in a petulant, dissatisfied way. She has never engaged with the toys.

Observers tend to respond to this scenario with irritation, focused upon one or both members of the dyad. Note additionally that as in Adrian's case a narrative story-line is absent. Cecilia was distressed from the outset, making it dramatically meaningless that she was also distressed during separation, and long after her mother's return.

In Ainsworth's Baltimore sample, resistant/ambivalent behavior was associated with maternal insensitivity to infant signals—specifically with unpredictable responsiveness—but not with rejection. The mothers of these babies were also found to be inept in holding them, and noncontingent in the pacing of face-to-face interaction. Ainsworth also noted informally that these mothers seemed to discourage autonomy (Ainsworth et al. 1978; Cassidy and Berlin 1994).

Observed in nursery school, children like Cecilia tend to be "babied" by their teachers; that is, they are not expected to play as independently as other children, and are treated as much younger than they are (Sroufe and Fleeson 1986). In addition, while children like Ben would not bully them, they are ready prey for avoidant children such as Adrian (Troy and Sroufe 1987).

When these children are six, a subtle ambivalence appears upon reunion, accompanied by what sometimes seems to be exaggerated expressions of affection (Main and Cassidy 1988). Some might, for example, sling an arm about the parent, cocking their heads and looking into the camera—but the same child who does this at one moment might pull away impatiently the next. Too few such children were available to identify a discourse pattern in our original sample, but combining our own and other samples we noted what seemed to us to be an excessive focus upon feelings and the relationship:

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Mother: I'm so tired. You din't get tired too, did you, honey? You look all worn out.

Cecilia: Yeah, I got tired too. You were gone an awfully long time. See, we can't sit together on the table anymore, the lady took the cover off.

Mother: Come sit on Mommy's lap, we can't sit in the sand. I bet you missed me.

(Cecilia sits, then wriggles uncomfortably as though wishing to get out of contact.)

Mother: Honey, calm down. Here, just try to get comfortable, okay?

Only a few children like Cecilia were available for Kaplan's (1987) study, but their responses did appear to reflect their earlier ambivalence. One described the pictured child as running after the parents but then shooting them. Another spoke of giving the parents flowers upon reunion, but then hiding their clothing. The family drawings of children like Cecilia at six were called *vulnerable* (Kaplan and Main 1984, 1986). They featured figures typically much too large, or much too small (e.g., a very tiny family placed together in one corner of the page). In other instances, the soft, vulnerable aspects of bodies were emphasized, such as large round stomachs with belly buttons. The photograph appeared disturbing to these (few) children: one moved uneasily, staring at it, and then picked at her skin.

Summary

I will now summarize our theorizing with respect to Ainsworth's original Baltimore study. First, in Ainsworth's view, each one of these infants had unquestionably developed an attachment to the mother that was readily observable within the home. However, for six infants attachment behavior was absent under the stress of the strange situation procedure, while for four it was exaggerated and largely replaced exploration. In sharp contrast to Bowlby's expectations as well as her own, Ainsworth found that the *organization* of attachment to the mother differed among infants in systematic accordance with the way the mother had responded to the infant's signals and communications through the first year of life. For the majority of infants, as expected, the procedure elicited only attachment and exploratory behavior. For those under the long-term strain imposed by varying forms of maternal insensitivity, however (see Kris 1956; Sandler 1967), unanticipated *additional* response patterns appeared, interfering either with the expression of attachment

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(avoidance), or with the infant's ability to engage with the environment (resistance).

I have proposed that each of these three traditional strange situation categories should be considered organized (see Main 1995), in that behavior and attention (whether flexible or inflexible) is consistent, and in addition is comprehensible as an adaptive strategy with respect to the condition (i.e., the caregiving situation) in which the infant finds itself. Using an evolutionary paradigm, I have additionally proposed that the insecure patterns of organized attachment may be seen as conditional strategies for maintaining proximity to a parent whose responsiveness is inconsistent, or otherwise limited (e.g., Main 1995). Thus, while a secure response to the strange situation is flexible in that the infant readily alters the focus of its attention as circumstances change, the insecure forms of organization may rest upon specific kinds of restrictions in attentional and behavioral patterning. The insecure-avoidant infant can be seen as maintaining behavioral organization throughout the procedure by a shift in attention *away* from the parent and *away* from the stress of separation. This attentional shift is, I believe, maintained by focusing upon the toys and other aspects of the inanimate environment. The insecure-resistant/ambivalent infant, in contrast, may maintain behavioral organization through a singular focus upon the parent, which of course prevents attention from “wandering” to exploration of the room and the toys.

In essence, then, insecure infants appear to remain organized under stress by concentrating insistently upon only one aspect of the surround. Like the relatively rigid patterning of attentional and behavioral processes seen in rejected and inconsistently treated infants under stress, inflexibility of attention will appear again in the discourse of their parents when they are asked to discuss their own attachment-related experiences.

The Adult Attachment Interview

This final section of the paper is devoted to a discussion of the Adult Attachment Interview (AAI), a seminstructured protocol that we have described as having the aim of "surprising the unconscious" (George, Kaplan, and Main 1984, 1986, 1996). The protocol consists of fifteen questions (eighteen for speakers who have children). The first calls for an overall description of the relationship with both parents

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during childhood; the second and third for five adjectives or phrases to describe the childhood relationships with the mother and the father. After that, participants are asked, adjective by adjective, to support their choices: "*Loving*, you used the word loving to describe your relationship with your mother. Could you tell me about some memories or incidents which would illustrate why you chose that adjective?" Speakers are later asked which parent they were closer to, and why; what they did when upset or physically injured; what happened when they were ill; how they had responded if and when persons important to them had died; whether their parents had been threatening in any way; whether they consider any of their experiences a setback to their development; why they believe their parents behaved as they did; and what the relationship with their parents is like currently. They are repeatedly asked to describe and evaluate the effects of these experiences upon their current functioning (see Hesse 1999a).[12]

Analysis of the AAI rests exclusively on study of the verbatim transcript.[13] Main and Goldwyn (1982-1998) originally delineated three organized "states of mind with respect to attachment," and developed several nine-point scales to assist in their identification. The system was based on study of a pilot sample for which infant strange situation behavior five years previously was known. Goldwyn then analyzed an additional set of sixty-six transcripts, obtaining a blind interview-to-strange-situation match of about seventy-five percent. Here I provide an overview of our first, content-based, analysis, although over the years we have come to place increasing emphasis upon the discourse properties of the interview transcript.

Mary Ainsworth liked to point to the Latin derivation of the word *secure*, noting that it meant without (*se-*) concern, worry, or care (*cura*). But an understanding of adult (as opposed to infant) attachment status

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12 The interview protocol can be obtained by writing to Mary Main or Erik Hesse at the Department of Psychology, University of California at Berkeley, Berkeley, CA 94720, or faxing 510-642-5293. Information regarding training in the analysis of the interview, and a list of presently certified trainers, is also provided.

13 Many readers will already be familiar with methods of assessing romantic attachment by self-report, in which subjects identify themselves (whether by self-classifications, or response to individual items) as, for example, secure, dismissing, preoccupied (and sometimes fearful). These studies have interesting outcomes, but little or no relation to the Adult Attachment Interview (see Crowell, Fraley, and Shaver 1999; Hesse 1999a). Self-reported relations to mother or parents also show little or no relation to the Adult Attachment Interview (see an earlier study by Hamilton reviewed in Hesse 1999b).

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requires an important distinction. While an infant is only considered secure or insecure with respect to the *particular person with whom it is being observed* (as I have mentioned above, a child who was secure with his mother might well be avoidant of his father), security in adulthood is *not identified with any particular relationship*. We do not assess an adult speaker's attachment to any given specific past or current attachment figure, and thus our analysis of the interview should not lead to calling the speaker "securely-*attached*." The interview of a speaker who has no living family and who has recently endured a bitterly unhappy divorce—in short, a person currently without a secure attachment to a single living person—may well be coded as "secure-*autonomous*." What we are coding is individual differences in *state of mind with respect to overall attachment history*, as this state is elicited or made manifest in the interview context. Insofar as we can infer differences from transcripts, they may indicate whether or not consciousness regarding this aspect of personal history is reasonably well integrated.

The Secure-Autonomous Category

The two outstanding characteristics of the transcripts of the parents of secure infants were (a) clear valuing of attachment figures and attachment-related experiences, together with (b) an apparent objectivity in the descriptions and evaluations of particular relationships. It was this *combined* set of qualities that led us to consider these interviews as *secure-autonomous*. Some parents of secure infants presented accounts of easy childhoods. Others discussed difficult relationships with parents, but all were (at least implicitly) forgiving. A subtle compassion for others was also a striking quality of these interviews, and some were humorous. Furthermore, the speech in many of these interviews was strikingly fresh or original. In other words, the parents of secure infants, more than other speakers, recounted their attachment-related history using phrases, paragraphs, and sentences that seemed unlikely to have been spoken before.

Finally, the parents of secure babies exhibited more than others what I have called *metacognitive monitoring* (Main 1991; see also Fonagy et al. 1991). They tended to search more insistently for accuracy than did parents of insecure infants ("I think I was wrong about that first big separation, I couldn't have been ten yet, I must have been eight or even younger"; "I know I chose *distant*, but now that I think about it, *shy* would have been more accurate"). At the same time,

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remarkably, they also exhibited tolerance for the ultimate impossibility of distinguishing appearance from reality ("Well, that's what *I* think, but my *sister* thinks I'm completely idealizing my parents, who knows," or "Okay, so that's how I see it today, but tomorrow I may think completely differently").

The Dismissing Category

We came to describe the parents of avoidant babies as *dismissing* of the effects of attachment-related experiences. Many tended not to acknowledge or to discuss negative life events, while others discussed such events, but then stated that they had only made them stronger. While descriptions of early relationships were largely positive, they were unsupported or even actively contradicted by the experiences later recounted. For example, one speaker who had given "very loving, caring, happy, generous, and supportive" as her adjectives could only provide further similar adjectives when asked for illustrations from experience ("Happy. Well, happy was joyful. What I mean by happy experiences would be 'joyful'"), or else weak impersonal memories ("Happy. Well, Christmas, Christmases would be an example of those happy occasions"). Another who had used similar adjectives might later state casually that his mother was uninterested in the death of his best friend in elementary school, ridiculing his distress. The parents of avoidant infants often also replied to queries with "I don't remember." In consequence, these interviews were not infrequently short. Note that in the parents' avoidance of discussions of anger and distress there is a direct resemblance to the strange situation behavior of the infants.

The Preoccupied Category

One way of describing resistant/ambivalent infants in the strange situation is by their preoccupation with the whereabouts of the parent *throughout* the procedure. Similarly, and somewhat ironically, their parents appeared too preoccupied with early and/or current relationships with their own parents to clearly describe and evaluate them. Many such speakers seemed actively and angrily preoccupied with parental faults, occasionally inviting the listener to agree ("My mother had a mental problem, not a problem problem technically, but none of her children could ever do enough for her, you know what I mean?"). A more passive form of preoccupation was identified in long discussions that included subtle self/other confusions, vague or nonsense

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terms, and/or wandering off topic ("She was a good person, let me sit on my, her lap, and that. Giving, and that. Gave to the Salvation Army every month, they came in green trucks, now times have changed, gotta carry it in blah blah blah …").

In our original analyses we only made passing reference to AAI transcripts that could not reliably be placed in one of these original three categories. However, as Hesse soon noted, some transcripts were unclassifiable, as the speaker switched, for example, from dismissing to preoccupied speaking patterns in mid-transcript. Although a small proportion of such interviews do appear in low-risk samples, these *Unclassifiable* or *Cannot Classify/CC* speakers are present in much higher proportions in psychiatrically distressed and criminal populations (see Hesse 1996, 1999a, 1999b). It is of clinical interest that the two case studies of CC mothers published to date both showed a mix of extremely divergent caregiving strategies (being alternately anxiously overprotective and endangering; see Hesse 1999a).

While we continue to use the content-based analyses of the AAI as just described, in recent years there has been an increasing focus as well upon *conversational* or *discourse* properties of the transcript (Hesse 1999a). From the outset, interview analyses began with scoring the transcript on several nine-point scales, including for example *insistence upon lack of memory* (repeatedly answering queries with “I don't remember”), *idealization* of the parent (assessed by the internal discrepancies observed when positive adjectives are unsupported or actively contradicted), *passivity* (such as use of vague terms or long irrelevant passages), and *coherence of transcript* (clarity and consistency).

In the late 1980s, however, I encountered the work of the British linguistic philosopher H. Paul Grice, whose discussion of variations in discourse were highly congruent with the AAI scales and directions for classification that we had already developed some years earlier. Grice (1975, 1989) had identified ideal or rational discourse as following a *cooperative principle* that required adherence to four maxims: (1) *Quality:* Be truthful, and have evidence for what you say; (2) *Quantity:* Be succinct, and yet complete; (3) *Relevance:* Let the direction of your conversation be relevant to the topic at hand; and (4) *Manner:* Be clear and orderly.

Although we have yet to conduct a formal linguistic coding of the interview, and still use revised versions of our original scales in it

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analysis, we now interpret our findings as well in terms of the speaker's adherence to, or violation of, these maxims.[14] Indeed, Hesse (1996) has identified a *secure state of mind with respect to attachment* by the speaker's ability to: (a) respond to the interviewer's request for attachment-related memories,[15] *while simultaneously* (b) maintaining coherent, cooperative discourse.

From the perspective of Grice's maxims, we can now state that speakers who are able to maintain coherent, cooperative discourse while describing and evaluating their early attachment-related experiences tend to have secure infants. Moreover, violation of *particular* maxims predict *particular* categories of insecure attachment. Speakers who violate the maxims of *manner, relevance*, and *quantity* tend to have resistant/ambivalent infants, while those who violate truthfulness or consistency (the maxim of *quality*) tend to have avoidant infants.

The Secure-Autonomous Interview: An Illustration

A series of illustrative examples of speech typifying the three organized interview classifications is now presented. I begin with a consistent, collaborative father, who had in our view, and his own, a relatively easy childhood. In the analysis of the AAI, our agreement with the speaker's stated perspective on his or her childhood rests in part on the support provided for the original choice of adjectives. Here is one of the incidents this man recounts to support his choice of the word *loving* with respect to his relationship with his father:

> *There was the time I accidentally set fire to the garage because I was experimenting with my chemistry set which both my parents told me I was definitely not supposed to do out there, and after the firemen my parents were the next people to appear and the chemistry set was unfortunately in major evidence. I mean, I expected the spanking of my life. But even with everything still smoking my parents forgot to spank*

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14 Critics of Grice have noted that "real" speakers' conversations seldom follow his ideal cooperative principle, but this is not a troubling problem for our system, in which the *relative* degrees of adherence to these maxims is examined across speakers. We assign our highest score for coherence of transcript (nine) to many speakers who exhibit minor violations. With Mura (1983), we also allow for the legitimate licensing of violations, as in, "If you really want to hear about that part of my life, it's going to be an awfully long story."

15 We are aware that memory is a constructive and reconstructive process: even in the case of secure individuals (whose narratives are internally consistent), memories may be inaccurate.

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me. Well, my mother did say later that she sure hoped I might pay more attention in the future to her instructions. But my father just ran up and picked me up and hugged me really hard. I mean, my feet were dangling. Later on he had a kind of twinkle when he mentioned "that time we had a little spontaneous combustion in the garage."

While this particular father appears to have enjoyed favorable relations with both parents, in many equally coherent and collaborative transcripts the speakers describe what seem instead to have been difficult childhoods. Prediction of infant caregiving from the AAI depends not upon the parent's life history, but rather upon the form in which it is recounted, reminding us that *while the content of an individual's life history cannot change, it can be told or reconstructed in many differing ways*. In illustration of this point and in order to highlight as sharply as possible the discourse patterning associated with the different *organized* states of mind identified by Ruth Goldwyn and myself I present below three configured examples of how speakers drawn from each category would typically respond to similar questions. Let us say that the three following speakers had all been raised by identical mothers who were emotionally distant, likely to be angry rather than comforting when a child was hurt (in each case here the mother had become angry when the child had broken her arm), and highly interfering. The examples I give are prototypes, but were synthesized from real interviews. What we look for is not differences in the *content* of life experiences, but differences in the *form* in which the story is told.

Secure-Autonomous Interviews: An illustration

The following response would be characteristic of a secure-autonomous speaker who had had a difficult childhood (and might well be the mother of a very secure infant such as Ben):

Well, to begin with, my mother was not cheerful, and I can tell you right now, the reason was that she was overworked. She had four of us in three years, which would have been a lot for anybody, and I was the oldest. I think I may have had the most difficult time of it among the four of us, and I remember she interfered with me a lot, and asked me questions constantly about things which weren't—or things which I at least thought weren't—really relevant to her. At the same time when I was hurt or upset she just wasn't actually able to respond to me at all, and I remember once I broke my arm and I didn't tell her about it for hours because I was afraid she was going to be angry.

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Note that the speaker has provided a complete, yet emotionally contained, summary. Asked for five adjectives to describe her early relationship with her mother, she replies:

Um…interfering would be one, she was really interfering. And not cheerful would be another. I guess you're asking about the whole relationship, aren't you, so let's put both of us down as not cheerful with each other. I guess we were, well, distant a lot of the time. So now we need a fourth….Um, making an effort would be another one, I mean, sometimes she made an effort to help me. And angry, sometimes she just flared up.

Finally, asked how she thinks her early experiences have affected her, she answers:

Well, as I said, my mother was pretty interfering, and she was really never able to respond to me when I was upset. And it hurt me a lot at the time, and I'm still kind of hyperalert to whether people respond when I'm feeling upset, or at least my husband certainly finds me hyperalert in that department. And another thing is, I feel awful about it, and I said it would never happen, but I sometimes catch myself acting just like her.

Dismissing Interviews: An Illustration

This following example illustrates the speech seen in transcripts classified as *dismissing of attachment*. The mother of the avoidant infant, Adrian, might give such a response. As I have noted, speakers are most generally judged dismissing on the AAI when they violate Grice's maxim of *quality* ("be truthful, and have evidence for what you say"), although violations of the maxim of *quantity* ("be succinct, and yet complete") are also observed in overly terse responses ("I don't remember"). With a history identical to that of the previous speaker, this mother responds to the initial query as follows:

Very normal childhood, definitely a normal childhood, with both parents, I'd say. My mother was supportive of everything I did, always had a lot of interest in my schoolwork, always asked me questions about my day at school. She put a lot of emphasis on our independence. She taught me not to worry about minor problems, which I think is good.

When asked for adjectives, she replies:

Let's see, caring, loving…and supportive, that's three. Teaching us how to behave, so…good teacher. And, uh, warm.

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This speaker has selected exclusively positive adjectives to describe an experience identical to the previous speaker's. Since, however, she will fail to support most of them with memories or incidents, or will—apparently inadvertently—contradict these descriptions, we will come to the conclusion that she is highly idealizing of her mother. As an example, here is her support of the word *caring*.

Caring. Well, I mean she was always very loving, very supportive. [Okay, well, could you give me a specific memory or incident that would help me understand why you chose caring?] I don't remember that far back. I don't remember, I mean, it was a long time ago. [Well, go ahead and take a minute, this can be hard]….Oh, uh, asking me how I was doing in school, was I keeping my grades up, did I have the right kind of friends, you know, caring things. Wanted to make sure I was dressed right, behaved right. She was right there watching after me, making sure I did right, didn't do anything wrong.

Here we see that this speaker uses her mother's continual queries about her various activities to support the adjective *caring*, although to the careful reader they appear intrusive. Typically, this speaker will offer no memories of being comforted when distressed, and will say that she has no memories of rejection during childhood. When asked what happened when she was injured or distressed, however, she replies:

Injured. Let me think, one time I broke my arm playing around in the yard. Things like that would make my mother angry, she hated episodes like that. It hurt a long time but I never told her, she found out from some neighbor, must have been the way I was holding my arm….She didn't like cry-babies. I always tried not to cry because she was a really strong person.

Her inability to tell her mother of a broken arm remains unconnected either to her earlier choices of adjectives or to her final evaluation of the overall effects of her experience:

Well, like I said, I didn't have any of these traumatic experiences people talk about. I had a good childhood, I'd say, so I just want to be the kind of mother that my mother was.

Taken as a whole, the transcript suggests that this speaker has *multiple contradictory models* of her childhood (Main 1991; see Bowlby 1973). The one that she presents to the listener is at the

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semantic (abstract/general) level a picture in which she had a very good mother. A second model, however, based on actual episodes and perhaps less frequently or readily brought to consciousness, includes the fact that she could not tell her mother about her broken arm. As is obvious, the *internal* contradictions in this interview violate the maxim of *quality*. Finally, like her avoidant infant, this mother's discourse reflects relative inflexibility in attention. Although she is responsive to the queries, and speaks clearly (if tersely), her attention appears to be fixed upon “getting through” the interview, rather than on collaborating in the task of recalling and reflecting upon childhood feelings and experiences (see Hesse 1996, 1999a). But while dismissing adults, like avoidant children, seem to emphasize that “all is well,” it should be noted that physiological indices of arousal and stress are significantly elevated in these seemingly affectless infants (Sroufe and Waters 1977). Dozier and Kobak (1992) used galvanic skin response as a physiologic measure of distress. They found that individuals who used dismissing strategies during the AAI exhibited a rise from their preinterview baseline in response to precisely such sensitive queries as whether they had been rejected, how they had felt about separations, and whether their parents had been threatening. Thus, just as it would be premature to assume that the strange situation procedure is not stressful for the avoidant infant, it would be premature to think that the interview is not stressful for the avoidant infant's mother. Both maintain organization, however, by attending to only one aspect of their surround.

Preoccupied Interviews: An illustration

Here I show how the *preoccupied* mother of an angrily resistant/ambivalent infant like Cecilia might report on the same childhood experiences. Asked to provide a general overall description of early relationships with her parents at the opening of the interview, this mother responds as follows:

My relationship with my parents in childhood. Huuuuh, well, let's start with my mother, that's easy, because my mother's own personal issues just totally dominated my life….Like, she tried to get me to tell her every little thing that happened to me every day and I'd make things up but that wouldn't be enough for her because she had so much of her own stuff around having to know everything and having to tell everything. But I aways knew where she was coming from and [here

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the speaker drops the pronoun] had a lot of material around that but she just totally fails to understand that I had and I still have and from now on I am going to have my own life.

When asked for adjectives, she replies:

Okay, well, loving, she was loving, kissing us, hugging us, telling us she loved us. But at the same time she was angry. I understand now that that came from her relationship with her own mother. Sometimes she tried, although I'd have to say she didn't really recognize them, I mean her issues and where they came from, so put down personal problems. Now Ceci and I, we don't have problems, not like she did with me, I tell her, I say, Ceci, if you have problems, you come right to me. And interfering, and…

Later, in conjunction with the support she gives for *angry*, we will hear directly about her mother's failure to respond to her broken arm. Rather than describing it almost inadvertently, as a dismissing speaker might do, she uses this incident as an appropriate illustration for one of the negative adjectives she has chosen for her relationship with her mother, and in point of fact we do not note major violations of internal consistency or truthfulness in this speaker. She violates instead what I have termed the maxims of collaboration—namely, *quantity, relevance*, and *manner*, as illustrated above. Once launched upon attempts to describe her experiences, she seems to focus upon them so persistently—albeit confusedly—that she cannot simulataneously maintain collaborative discourse (Hesse 1996).

Asked about her childhood experiences with parents, for example, she may discuss her present relation with her own child (or her current, rather than her childhood, relation with her parents), and she may take such inappropriately long conversational turns that her interview runs well beyond its expected time limit.

Another quality seen in some preoccupied speakers is oscillation, which, like direct contradiction, may also be taken as evidence for the existence of “multiple models” (Main 1991). A preoccupied speaker

setting out on a point may immediately take it back, and then reverse herself again, and then yet again. In this way, even positive adjective choices may be undermined:

Loving. My mother was loving. Every night we had a goodnight kiss, hugs, and she was telling me she loved me, she adored me, dadadadadada. So that was good, and I'm grateful for it, but at the same

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time it made me guilty, like I owed it to her to say the same thing right back, and I've learned now your children don't owe you anything, they don't have to say anything. But, you know, I was thankful for it, and I still am, but what I'm trying to say is it was painful to have to hear her, and I used to wonder if I hurt her by not saying anything back, but she was loving. And it cost me.

Finally, here is the beginning of her description of the overall effects of her experience:

Well, as a result of everything my mother did, I mean her problems and the way she projected them onto me, I used to be a really insecure person. That was the way I was, I acted strong and everybody thought I was strong, nobody realized I might be suffering, my upbringing did that to me, made me everybody's caretaker, just like I took care of her. But I've worked it out now and I mean with Ceci, the ways its affected me, I just take everything my mother did, and I do the opposite.[16] *Like yesterday I had her to dinner and I said Mother, if you don't like creamed onions, just don't eat them, I don't need to hear about it every time I make them, that's something I don't need…*

"Stating, Not Showing": A Principle in Interview Analysis

In teaching the analysis of the AAI, we frequently point to the critical difference between *stating* that one is preoccupied or dismissing, and *showing* it, and I illustrate this principle before closing my review of the system. This next speaker has just been asked (near the conclusion of the interview) about her *current* relationship with her mother:

Oh God! My current relationship with my mother. This wasn't the week to ask. This definitely wasn't the week to ask. Last week we were getting along fine and we probably will be again by this time next week. I mean, we still have our ups and our downs, and we're probably still too focused on each other, but that's just how it is. But I'm so mad at her right now, I'm just boiling. She criticized my husband again, and to me that's always the living end. I keep meaning to maintain my cool, but sometimes I still lose it. So really it's probably not that different than it was in adolescence. Yeah, um, overall I'd say my relationship with my mother is about the same as it was.

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16 One of the indices of a secure state of mind with respect to attachment is a lively awareness of the unwonted effects of unconscious processes, so that this statement is taken as an index of insecurity. As the reader will remember, the secure-autonomous speaker above reported being dismayed to find herself acting like her own interfering, angry mother.

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An experienced coder will not consider this speaker preoccupied.[17] She can discuss her current angry feelings towards her mother without violating the maxims of collaboration (quantity, relevance, or manner). We not along with her linguistic clarity that as a speaker she is autonomous, and does not seek the agreement of a second party. Finally, she *states*, as opposed to inadvertently demonstrating or *showing*, that she is preoccupied with her mother, and once having clearly stated her current difficulties, lets the topic go.

On similar grounds, the following paragraph does not point to a dismissing classification:

My relationship with my parents in childhood…I'm afraid I don't remember much about it, I've sort of set the whole thing aside….I think I'm kind of an escapist. I mean, I try to stay positive and

not think about my childhood and generally I, well, I try to think well of my parents. So that's what I focus on, and it's harder to remember the negative things. Give me another minute here…. Let's see, my father's idea of family was contributing to our financial security, I know he should have done more. My mother…was a good person but she wasn't comforting when I was distressed, and…

Because she says she has difficulty remembering her childhood, that she has set it aside, and that—in her own words—she is an "escapist" who tries to stay positive about her parents and not remember negative things, a new coder might tend to think this speaker was heading for the dismissing category. Note, however, that she has not significantly violated internal consistency, because while she tells us she *tries* to stay positive about her mother, she also tells us that the early relationship was not in fact positive. At the most basic level, her language implies that she is too conscious of her own attempts to be positive for us to identify unconnected, manifest inconsistencies or violations of truthfulness of the kind we saw in the speaker who actually was dismissing. Finally, her stated difficulty remembering her childhood is not used to block discourse: she remains collaborative, and does not violate quantity.

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17 Like the next speaker she may, however, fall in a less prototypically secure subcategory of the AAI than, for example, we might expect for the mother of a child like Ben.

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Reliability and Validity of the Adult Attachment Interview

The Adult Attachment Interview is best known for its external correlates—for example, its power to predict parental sensitivity as well as infant strange situation behavior towards the speaker, and to discriminate between clinical and non-clinical samples. However, the characteristics of the AAI as an assessment tool (i.e., its *psychometric* or measurement properties) have also been tested in a series of studies that have demonstrated its striking reliability and validity (see Hesse 1999a for overview). For example, adult attachment organization has been found highly stable when the interview is administered to the same individual across time periods ranging from two months to four years; inter-judge agreement on classification has proven satisfactory; and responses to the interview do not vary with changes in interviewer. In addition, since coherence plays a strong role in identifying a transcript as secure-autonomous, it has been critical to demonstrate that these speakers are no more intelligent or verbally fluent than others. Relatedly, since insistence on lack of memory for childhood is associated with dismissing transcripts, it has been necessary to demonstrate—if we are going to infer psychological motivations—that such speakers are as able as others to recall *impersonal* events from their childhood. Further, to determine whether the differences in discourse identified in the AAI simply reflect generalized speech habits, a work history interview was developed that mimics the AAI, focusing upon nonpersonal, technical aspects of an individual's job. Like the AAI, this interview yields transcripts that can be classified secure, dismissing, or preoccupied (Crowell et al. 1996). Classifications based upon this work history interview were found independent of those assigned to the AAI conducted with the same person. This suggests that it is indeed internal dynamics (as opposed to a simple generalized speech habit) that are actively distorting discourse surrounding attachment history, and that these dynamics account for the violations of Grice's maxims that appear specifically in the parents of insecure infants during the AAI.

Finally, although I will continue to refer to our protocol as the *Adult* Attachment Interview, workers in three countries have found the AAI to be readily applicable—with only minor, age-appropriate alterations—to children down to ten or eleven years of age (e.g., Ammaniti et al. in press; see also Hesse 1999b for overview).

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Prediction of Strange Situation Behavior, Caregiving Patterns, and Clinical Status

Researchers worldwide have replicated the relation originally uncovered in the Bay Area study between a parent's status in the Adult Attachment Interview and an infant's strange situation response to that same parent. Studies in four countries conducted in four different laboratories, and including a poverty sample of very young mothers (Hesse 1999a), have indicated that the same average parent-to-child, secure/insecure match of 75% holds even when the interview is conducted before the birth of the first child. Describing the strength of this relation across studies conducted several years ago, van I Jzendoorn (1995) calculated that it would take 1,087 further attempted replications, *every one* yielding insignificant results, to reduce the present relation between adult and infant attachment status to insignificance (see Table below for overview).

ADULT ATTACHMENT INTERVIEW	INFANT STRANGE SITUATION RESPONSE
SECURE/AUTONOMOUS (F)	**SECURE (B)**
Coherent, collaborative discourse is maintained while speaker describes attachment-related experiences and their effects, whether favorable or unfavorable. Speaker seems to value attachment, while maintaining objectivity regarding any particular experience or relationship.	Shows signs of missing parent on first separation, and cries during second separation. Greets parent actively, e.g., creeping to parent at once, and usually seeks to be held. After briefly maintaining contact with the parent, settles and returns to play.
DISMISSING (Ds)	**AVOIDANT (A)**
Normalizing, positive descriptions of parents (“excellent, very normal mother”) are unsupported, or contradicted by specific incidents. Negative experiences said to have had little or no effect. Transcripts short, often due to repeated insistence on lack of memory.	Does not cry on separation, attending to toys or environment throughout procedure. Actively avoids and ignores parent on reunion, moving away, turning away, or leaning away when picked up. Expressions of anger and distress are absent.
PREOCCUPIED (E)	**RESISTANT-AMBIVALENT (C)**
Preoccupied with experiences, seeming angry; confused and passive or fearful and overwhelmed. Some sentences grammatically entangled or filled with vague phrases (“dadadada”) or psychological jargon. Transcripts long: some responses irrelevant.	Preoccupied with parent throughout procedure, may seem actively angry, alternately seeking and resisting parent, or may appear more subtly angry, while acting passive. Fails to settle or return to exploration on reunion, and typically continues to focus on parent and cry.

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These findings imply, of course, that differing states of mind with respect to attachment predict differing patterns of caregiving. If this is the case, then secure-autonomous parents should be more sensitive and responsive to their infants than are insecure parents, and in van IJzendoorn's (1995) overview, secure-autonomous interviews in several samples were found to predict sensitive, responsive caregiving toward offspring for both mothers and fathers.

The development of the AAI was anchored in infant strange situation response in a low-risk, middle-class sample. It was hardly expected, therefore, that it would also serve to distinguish individuals in psychologically distressed populations from others. However, it has now been demonstrated repeatedly that the proportions of transcripts judged secure-autonomous in such samples (about 8%, as compared to 45%

or more in control samples) is astonishingly small, even when researchers have “blinded” transcripts for psychiatric status and excluded organically impaired and thought-disordered patients (van IJzendoorn and Bakermans-Kranenburg 1996). Other studies have found insecurity in most mothers of clinically distressed children (providing the children's disorders are not predominantly biologically based), in criminals, in violent or abusive individuals, and in rightwing German extremist youth (see Hesse 1999b for overview).

Prediction of Response to the AAI from Infant Observations

Recently a new set of empirical studies has examined early experiences or strange situation behavior in relation to response to the AAI in adolescence or young adulthood. In the first report of this kind, unresponsiveness of the mother to her infant as observed in the home as early as one month of infant age predicted dismissing AAI status in adolescence (Beckwith, Cohen, and Hamilton 1999). In addition, in a collection of three recently published studies (see Waters, Hamilton, and Weinfield 2000), infant strange situation classification has been compared to responses to the AAI sixteen to twenty years following. In both of the low-risk samples included here, a secure strange situation response to the mother in infancy has significantly predicted a secureautonomous AAI transcript in *the same individual* during late adolescence or early adulthood. In our own Bay Area follow-up study we have also found secure/insecure strange situation response to the mother predictive of secure/insecure response to the interview eighteen years later. Indeed, only a small minority of adolescents insecure as

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infants were judged secure-autonomous at age nineteen (for example, ten out of eleven infants avoidant of the mother during infancy were judged dismissing in adolescence), while a majority who had been secure with mother as infants were secure-autonomous in adolescence.[18] The findings from these four studies of low-risk samples are impressive, with statistical tests ranging from significant to highly significant. However, in the Minnesota poverty sample (included in Waters et al. 2000), substantially traumatic events intervened between infancy and late adolescence, and no association to early security was found (see Weinfield et al. 1999). Here, while a majority of adolescents insecure with mother in infancy were insecure in the AAI as expected, so were a majority of adolescents who had been secure.

From the above we may conclude with Bowlby (1969) that despite the overall predictability between early strange situation behavior and later representational processes that has been reported in several low-risk middle-class samples, security is in no way fixed or fully determined in infancy. For example, constitutionally based strengths and vulnerabilities must be considered likely contributors to states of security vs. insecurity in adulthood (Main 1999). In addition, all children are susceptible as well to a variety of favorable and unfavorable experiences that may—permanently in many cases (and temporarily in others; see Weinfield et al. [1999])—alter their developmental pathways and hence their states of mind with respect to attachment.

Conclusions and Suggestions for Future Work

The central aim of this paper has been to provide a basic introduction to the field of attachment, together with extensive descriptions of the behavior and language that identify the infant, child, and adult attachment categories. To my knowledge, no comparable compilation of such material has previously been available outside of selected colloquia and teaching institutes. My hope is that readers will emerge with a complete enough sense of individual differences in attachment organization to allow for informed examination of further material, and

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18 In our sample, strange situations were collected with father as well as mother for each child. Although, as noted earlier, the father's AAI predicts the infant's behavior towards the father in the strange situation, as well as the father's sensitivity to the infant (van IJzendoorn 1995), strange situation behavior to the father was not related to adolescent responses to the AAI within our sample.

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perhaps generate new studies of their own. But a paper of this size cannot include everything, and there have been some unavoidable omissions. Notably I have had to leave out: any reference to important discoveries regarding attachment in non-human animals; the entire self-report literature concerning romantic relations in adulthood; and a number of emerging theories put forward in the last decade (including, of course, some of my own). Still, readers will be more easily able to extend their studies, if they wish, once they are acquainted with the basic phenomena and methodology of attachment research. Therefore, I believe, these omissions can be considered warranted.

Although I have had no opportunity here to discuss the relation between insecure patterns of attachment, restriction of attention, and "working" defense, the reader will find extensive discussions of this topic elsewhere (for example Main 1995 and 1999). I would like to stress, however, that individuals whose behavior or mental states are termed *secure, avoidant/dismissing*, or *ambivalent/preoccupied* are not in essence different; they share the same continuing underlying propensities to seek attachment figures when distressed, and to strike out whenever possible in autonomous exploration of the external and internal worlds. However, an individual in an insecure state of mind must act against these propensities.

In short, these perhaps too readily used categorical placements (which in fact are dependent upon careful prior scoring of individual scales) must be understood to reference only *current*, and potentially changeable, *states of mind with respect to attachment*. The categories should not be thought to denote different *types* (as might be implied by occasional (and misleading) references to "dismissers" or "preoccupieds"); individuals would have no reason to restrict the focus of attention in the face of *cura* (concern, worry, or care) if *failing* to restrict attention did not arouse painful or anxious feelings and behavioral inclinations. I believe this is why children subjected to long-term separations may actively avoid the person previously most favored, and why, for example, rejected children draw smiling, floating figures without arms. If defensive processes did not come into play during protracted separations (or in response to repeated experiences of rejection), these children should warmly greet the parent immediately upon reunion, and rejected children should make family drawings as realistic as other children can. Insecure mental states are, then, indicative of the presence of a *process*, not an immutable *structure*, and this process is

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highly active—as is demonstrated in its continuous distorting effects upon the language usage of adults asked to describe and evaluate their attachment history.

I would like to consider briefly the future of the field of attachment (see also Main 1999). Until now, most researchers working with human populations have been engaged in describing, classifying, and predicting behavior (in its broadest sense), rather than attempting to intervene in it. This has been a necessary undertaking, but the discoveries I have reviewed here are, notwithstanding their great importance, for the most part, correlational. The next phase in the development of the field will be to test our understanding of these observed phenomena by attempting to control and alter them. In this endeavor, for example, clinicians might increase our understanding of insecure attachment by exploring the possibility of intervening to help insecure individuals achieve states of security. To this end, the Adult Attachment Interview is presently being used as an assessment of patients' status prior to therapy (as see Korfmacher et al. 1997)—or, when combined with post-tests, as an assessment of its effectiveness (see, for example, Diamond et al. 1999 and Fonagy et al. 1996). Although insecure attachment cannot provide a full explanation of the emergence of clinical difficulties or criminal tendencies, the capacity to help individuals develop a secure state of mind with respect to their attachment histories could act as a protective factor (see Schuengel, van IJzendoorn, and Bakermans-Kranenburg 1999), and facilitate further positive change.

Another new direction for the field of attachment will no doubt be defined by the growth in our understanding of neuroscience, and studies assessing individual differences in attachment status in combination with assessments of physiology, brain imaging, and behavior genetics will likely emerge (Main 1999). Such studies will be most useful if we do not confine ourselves to simply attempting to

identify "the" brain or physiological correlates of insecure vs. secure attachment, but instead include assessments of neural and/or physiological status made prior to, and succeeding, clinical intervention.

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Appendix: Issues of Temperament

While genetic biasing is seen in many behavioral/emotional domains, to date environmental accounts seem to predominate with respect to early attachment patterns. First, if strange situation behavior were a reflection of the infant in itself rather than of its interactional history with its parents, then infants should behave similarly with both parents. However, as noted earlier, across many relatively large studies, a given infant's attachment to its two parents has been found to be strikingly independent. Second, if infant attachment were the product of infant temperament, then an improvement in the mother's life circumstances would not be expected to alter strange situation response significantly; however, an improvement of this kind at between twelve and eighteen months of infant age *has* been found associated with insecure infants becoming secure (Sroufe 1985). Third, if parents are responding negatively to "difficult" infants, then it would be expected that fewer difficult infants would be secure. However, security predominates even in samples in which the infant is sick, damaged, or handicapped. Finally, if the infant's temperament or constitution is shaping the interaction with the parent with respect to attachment, then it should be harder to predict infant strange situation behavior before than after birth. However, as noted earlier, four independent prebirth studies using the AAI have found that interviews conducted with a given parent several months prior to the birth of the first child predicts strange situation response as sharply as when it is administered following birth (see Steele, Steele, and Fonagy 1996 for a particularly elegant illustration). For an overview of the above and citations to studies see Vaughn and Bost (1999). For a new Hungarian study suggesting a possible genetic contribution to disorganized attachment, see Lakatos et al. (in press); see also Hesse and Main (2000; this volume).

Article Citation [Who Cited This?]

Main, M. (2000). The Organized Categories of Infant, Child, and Adult Attachment. *J. Amer. Psychoanal. Assn.*, 48:1055-1095