

DISCOURSE, PREDICTION, AND RECENT STUDIES IN ATTACHMENT: IMPLICATIONS FOR PSYCHOANALYSIS

MARY MAIN, PH.D.

The study of human attachment organization is founded upon the work of John Bowlby and Mary Ainsworth, and takes among its topics the role of early trauma (Bowlby) and early parent-child interaction patterns (Ainsworth) in the development of anxiety and defensive processes. The infant's behavioral response to separations from and reunions with the parent in the Ainsworth Strange Situation has been found to reflect patterns of infant-mother interaction, and permits the classification of infant-mother relationships as secure, avoidant, ambivalent, and disorganized/disoriented. Recently, children's narratives, representations, and fantasies at six have been found predictable from these four categories of attachment to the mother. In addition, an Adult Attachment Interview has been devised in which individuals are asked to describe and evaluate early relationships and experiences. Interview transcripts are classified on the basis of the transcript's discourse characteristics rather than the speaker's apparent history. Four "states of mind with respect to attachment" have been identified, and in infant-parent samples each has been found predictive of the infant's Strange Situation response to the parent. Most strikingly, parents who are coherent, consistent, and plausible in describing and evaluating their own attachment histories, whether favorable or unfavorable, have infants whose Strange Situation response to them is judged secure. These studies are discussed in terms of their implications for the hermeneutic/constructivist controversy in psychoanalysis.

THE STUDY OF HUMAN ATTACHMENT organization is founded on the work of John Bowlby and Mary Ainsworth, and takes among its topics several issues central to psychoanalysis,

From the Department of Psychology, University of California, Berkeley.

This paper is dedicated to the memory of Ellen Richardson (1958–1993), a graduate student at Berkeley and its intended co-author. One objective of her doctoral thesis had been the joint consideration of attachment and hermeneutics. I gratefully acknowledge the Kohler-Stiftung Foundation in its support of this project.

including the role of early trauma (Bowlby) and early parent-child interaction patterns (Ainsworth) in the development of anxiety and defensive processes. This article begins with a history of the field of attachment, and emphasizes tentative analogies between insecure patternings of attachment and early ego modifications. I discuss the contribution recent work in attachment may make to considerations of the "linguistic turn" in psychoanalysis, and specifically to queries regarding the status of psychoanalysis as a natural science.

In the opening sections of this article I trace three phases in the development of the field. The lines of study to which these phases refer have not replaced one another in this sequence; rather, each continues to be carried forward from the time of its initiation. In the first, drawing on evolutionary theory and observations of nonhuman primates, Bowlby (1969) called attention to the functioning of an "attachment behavioral system" which, having primary and immediate responsibility for regulating infant safety in man's original "environment of evolutionary adaptedness," unavoidably still acts to lead the infant to continually monitor the physical and psychological accessibility of attachment figure(s). The development and organization of this instinctively guided system was used to explain the child's behavioral and emotional responses to separation and loss.

A second phase in the development of the field centered on individual differences in the one-year-old infant's behavioral response to separations from and reunions with the parent in an unfamiliar laboratory environment (Ainsworth et al., 1978). Infant responses to the parent in the Ainsworth Strange Situation were categorized as secure (Group B), insecure/avoidant (Group A), ambivalent/resistant (Group C) and more recently, as disorganized/disoriented (Group D, Main and Solomon, 1986, 1990). Precursors to each of these "patterns of attachment" were sought in mother-infant interaction, with secure infants repeatedly being found to have had the most sensitive

and responsive mothering. Behavioral sequelae to Strange Situation behavior were observed in other settings, with children secure with mother in infancy exhibiting the most favorable outcomes to fifteen years of age.

The most recent phase in the study of individual differences in attachment organization has been described as a "move to the level of representation" (Bretherton and Waters, 1985; Main et al., 1985). In this phase, children's discourse, representations, and fantasies have been found significantly related to early attachment to the mother, with children exhibiting fearful, bizarre, or catastrophic fantasies being drawn almost exclusively from a newly discovered disorganized/disoriented category of infant Strange Situation behavior. There has also been considerable focus upon a semistructured, hour-long Adult Attachment Interview administered to adults. In this interview, individuals are asked to describe early relationships with parents, and to evaluate the effects of these relationships and experiences upon their present functioning (George et al., 1985). The interview is transcribed verbatim, then classified as representative of one of four "states of mind with respect to attachment." Classification rules are based on the transcript's discourse characteristics rather than its contents (the speaker's apparent experiences, see Main, 1991). The central finding of these studies has been that, as administered to parents (including first-time prospective parents), each state of mind as determined from this interview tends reliably to predict¹ a particular, corresponding pattern of infant response to the parent in the Ainsworth Strange Situation. Most strikingly, parents who are coherent, consistent, and plausible in describing and evaluating their own attachment histories, whether favorable or unfavorable, have infants whose response to them in this semistressful situation is judged secure.

¹Here and elsewhere in this manuscript the term "predict" is used to describe our ability to anticipate, e.g., the yet-to-be-born infant's Strange Situation attachment classification from the adult's interview-based attachment classification, at highly statistically significant levels. The terms refers

The concluding section of this article includes a discussion of some tentative similarities between patterns of insecure infant attachment and early ego modifications. I then discuss the notable if somewhat complex implications of our work for constructivist/hermeneutic issues in psychoanalysis. As discussed above, our system of interview analysis relies not upon the speaker's apparent experiences, but rather upon coherence versus three specific forms of incoherence in the discussion of those experiences to predict infant attachment classification. We do not, in other words, need to know what in fact happened during the speaker's childhood in order to (1) reliably analyze a text and (2) predict favorable versus three specific kinds of unfavorable outcomes. This appears initially as a plus for the argument that what is important in text is coherence of narrative, and as a strike against the argument that the adequately interpreted text will be known only as it tallies with the speaker's actual experience. However, the fact that we have developed a set of readily agreed-upon rules for discourse/text interpretation which anticipate the speaker's behavior toward an infant bodes well for the status of text analysis as a type of natural science.

Bowlby's Ethological-Evolutionary Theory of Attachment

Bowlby (1969) proposed that maintenance of proximity to protective adult figures represents the primary mechanism for the regulation of infant safety and survival. In Bowlby's theory, behavior patterns having the predictable outcome of increasing proximity between infant and caregiver (such as crying, calling, pursuing, and clinging) are ascribed to the activity of a complex, instinctively guided but environmentally influenced control system termed the "attachment behavioral system." This system is presumed to have evolved to serve the biological function of ensuring the protection of younger and/or weaker members of

to probabilistic prediction across groups rather than deterministic prediction at the individual level.

ground-living primate troops. Once an attachment figure has been selected (usually but not necessarily the infant's biological mother) the infant closely monitors her whereabouts, preserving proximity even under nonstressful conditions. If threatening conditions arise, the attachment behavioral system becomes highly activated, and the infant is led immediately to seek close proximity and contact. Bowlby frequently refers to the infant's "primary" attachment figure, but two or three other attachment figures may also be selected.

Like other systems that serve survival and reproduction, the attachment system is closely coordinated with other behavioral systems, such as exploration, escape, and feeding. It is presumed to be activated and terminated by "signals" from the internal or external environment, as by illness, weakness or injury, or by indications of danger or safety appearing in the environment. No buildup of psychic energy is presumed necessary to the activation of the system, nor is energy (other than physical energy) released or spent following behavioral displays. While most readily activated in younger individuals, the attachment behavioral system is presumed to remain influential throughout an individual's lifetime, and to account for central aspects of an individual's mental state.

Although Bowlby originally proposed that the biological function of the attachment behavioral system was primarily protection from predation, the full import of the system is probably best understood by considering that it serves multiple survival functions (Main, 1981). In addition to protection from predation, proximity provides protection from unfavorable temperature changes, from natural disasters, from the attacks of conspecifics, and from the risk of separation from the group.

The reader should note the following further points:

1. The development of specific or "focused" attachments appears by the third quarter of the first year of life in human infants, and is presumed to be based on social/contingent interactions. There is no evidence that these interactions need be

positive, and infants unquestionably take maltreating parents as attachment figures.

2. As must necessarily be the case if attachment represents the infant's chief mechanism for ensuring survival, the attachment behavioral system is conceived as continually active. This means that, whether or not attachment behavior is displayed at a given time, the attached individual is at some level attending to (monitoring) the physical location and accessibility of the attachment figure(s).²

3. This continual monitoring (attention) cannot always be conscious. It is now widely recognized, however, that we have the capacity for attending to, processing, and drawing inferences from input that does not reach the usual levels of awareness (see Kihlstrom, 1987; Eagle, 1987; Clyman, 1991).

4. The concept of a biologically guided attention, which, while continually active, only occasionally reaches levels of conscious awareness, has implications for the development of defensive processes and is in keeping with analytic theory.

5. The formation of an attachment to a specified individual signals a qualitative change in infant behavioral (and no doubt also brain) organization. This given, quantitative terms (such as "strongly" or "weakly" attached) are not used in describing differences among individuals (Ainsworth et al., 1978). Infants who have become attached to maltreating or simply insensitive attachment figures are presumed no "less" attached than others, and attachments are formed by the end of the first year of life in all but extremely anomalous rearing conditions. Strong, continuing displays of attachment behavior in relatively safe circumstances or, conversely, the absence of attachment behavior in threatening situations in which it is expected are believed to signal interferences from other processes rather than quantitative differences in the "strength" of attachment.

²In further consideration of the relation between attachment and danger, Bowlby noted that for many mammals the mother provides nourishment and opportunities for learning, while separately a den, burrow, or other special location provides the haven of safety in times of alarm. For the primate

6. In sum, in Bowlby's theory, the infant's insistent concern with maintenance of relations to potentially protective attachment figures represents not the working of a set of "quiet" instincts (see Modell, 1975), but rather the *sine qua non* of infant survival. The attachment behavioral system in primates is therefore highly responsive to danger, intimately related to fear, and activated by frightening conditions of any kind.

Individual Differences in Attachment in Infancy

Ainsworth designed the Strange Situation procedure with the intention of illustrating the way in which attachment behavior would gradually increase in one-year-old infants responding to two separations from, and reunions with, the mother in a strange environment. The procedure constituted the final step in an extensive study of infant-mother interaction conducted in Baltimore. In this study, each infant-mother dyad was observed in the home for four hours every three weeks, with interactions being recorded in the form of narrative record (66 to 80 hours of observation per dyad). Despite observing stable differences in patterns of infant-mother interaction in the home, Ainsworth expected that during the Strange Situation the infants would use mother as a "secure base" for exploration when present, exhibiting attachment behavior during separation and at the initial moments of reunion.³ Unexpectedly, striking individual differences in response to this 15–20 minute procedure were observed in the Baltimore study, and the following discoveries were made: (1) while 13 of the 23 infants

infant, in contrast, it is a specific individual rather than a specific static location that the infant seeks in alarm.

³The Strange Situation consists of seven episodes each, apart from the separation episodes (terminated within 30 seconds or less if the infant is distressed) being three minutes long. In the two opening episodes, the mother sits quietly as the child responds to an unfamiliar environment and to the toys, and then to the entrance of a stranger. In the first separation, the infant is left alone with the stranger; mother then returns, and then leaves the infant entirely alone. The stranger returns, attempting to comfort the infant if distressed; the mother returns for the final reunion episode.

exhibited the expected pattern, in six infants attachment behavior was absent, while in four others attachment appeared completely preoccupying; (2) when attachment behavior was absent, it was replaced by exploratory behavior throughout the situation as a whole, and active avoidance of the parent upon reunion; (3) where attachment behavior was continually focused on the parent, angry behavior was also present, exploration was absent, and the infant failed to settle on the parent's return; (4) each pattern exhibited was linked to a specific pattern of infant-mother interaction during the preceding year.

The link between specific kinds of interaction in the home and the infant's response to the mother in a stressful situation suggests that differing internal structures may be developing out of differing patternings of dyadic regulation (see Sander, 1987), and that in the absence of major alterations in life circumstances these structures may have stability and some predictive power. The reader will therefore want to be informed regarding the stability of these categories, and their power to predict behavior in other settings. First, using the full ABCD system (pattern D is described below), a majority of infants in low-risk samples are secure (B) with mother, with about equal numbers falling into patterns A and D and a minority in pattern C. When the infant is seen twice with the same parent attachment classifications have about 80 percent stability between twelve and twenty months of age; however, the same infant is often categorized differently with the two parents, e.g., being secure with mother but avoidant with father.⁴ Main and Cassidy (1988) discovered that ABCD classifications with mother in infancy are predictive of four specific patterns of reunion behavior with mother at six years (a finding replicated in Germany by Wartner and her colleagues, *in press*). Children secure with mother as infants in both middle-class and poverty samples show greater concentration in play, more positive affect,

⁴Although fathers are not completely neglected in attachment research, many more investigations have been conducted with mothers.

greater social competence, and greater ego resilience than insecure children in peer settings, and differences favoring children secure with mother at age one are being found to continue to ten years of age (Grossmann and Grossmann, 1991; Suess et al., 1992; Urban et al., 1991).

At the conclusion of the description of each attachment category I describe partial results from a followup study of 40 six-year-olds classified A, B, C, or D with mother in infancy (Kaplan, 1987; Kaplan and Main, 1986; Main et al., 1985). In this study we attempted to access representational processes with respect to attachment, through presenting a photograph of the child and family, seeking a drawing of the family, and interviewing the child regarding what a pictured child might feel and do regarding parent-child separations. Representational processes were presumed by us to play a role in accounting for and maintaining the stability and predictability of behavior. Precisely because the predictive power of several of the assessments described in this paper are remarkable, however, the reader should remain aware that such predictions are probabilistic group predictions and do not refer to individuals.

Group B: Secure

Infants are described as secure when they show the following, notably simple, behavioral patterning. In the opening episodes of the Strange Situation (before the mother's first departure) the infant actively explores the laboratory room and plays with the toys provided. By the end of the first separation (when the infant is left alone with the stranger), the infant shows signs of missing the mother, often going to the door and engaging in search behavior. The mother is actively greeted on reunion, following which the infant happily returns to play. On being left alone entirely during the second separation episode, the infant calls for the mother. The stranger's return is clearly disappointing, and the infant continues to actively indicate a desire for the mother's return, often (but not always) by crying.

On reunion the infant scrambles to the mother, clings, and may endeavor to maintain contact should mother attempt to put him down too quickly. Displays of distress cease rapidly, however, and by the end of this final episode the infant has returned to play.

Ainsworth's narrative records showed that the mothers of B infants had been "sensitive to the signals and communications" of their infants during the first year of life (Ainsworth et al., 1971, 1978). Greater sensitivity to infant signals in the mothers of B (versus A and C) infants has continued to be noted in succeeding studies (see Bretherton, 1985, for review).

At age six, family drawings made by children who had been secure with mother as infants tended to show well individuated, well grounded figures with open arms: the drawings often also included real-world elements, such as a bicycle or a car (Kaplan and Main, 1986). Offered a photograph of themselves with their parents, these children remained casual, smiling or making a comment and then returning it to the examiner. Children secure as infants described a pictured child as probably feeling sad during separations, and offered constructive ideas regarding what the pictured child might "do" (as, try to persuade the parents to stay, or find another relative to stay with). Both in a study of sand-box play (Rosenberg, 1984) and a study of responses to doll-play separations (Solomon and George, 1991), secure children were distinguished from insecure children in that they (a) invented a crisis in mid-story, and (b) then devised a happy ending.

Group A: Insecure/Avoidant

Infants are considered insecure/avoidant when they show little or no distress during the Strange Situation (exploring throughout separations and reunions), and indeed on mother's return avoid and ignore her efforts to attract attention by turning away, looking away, and subtly refusing contact. Picked up by mother, they lean out from mother's body, pointing away to

light fixtures or to toys. Put down, they again attend to the environment.

Avoidance of the mother in the Strange Situation was linked to mother's rejection of the infant's attachment behavior in the home. Several mothers described themselves as disliking tactual contact, and behavior records showed them actively pushing the infants away in response to bids for access (Ainsworth et al., 1971, 1978). Further studies continued to link the parent's aversion to physical contact with the infant to the infant's avoidance of the parent under stress (Main and Stadtman, 1981). In interactions in a free play setting, mothers of Group A infants withdrew from the infant when the infant seemed sad (Grossmann and Grossmann, 1991).

Elsewhere, we have suggested that physically rejected infants may be able to refrain from exhibiting distress and other forms of attachment behavior in this mildly stressful separation-and-reunion procedure by minimizing responsiveness to fear-eliciting conditions. This may be accomplished through an "organized shift of attention" away from the mother and/or her absence (and toward the inanimate environment). Such behavior has the advantage of permitting continued organization, and possibly also of permitting the maintenance of whatever proximity to the mother is possible (Main and Weston, 1982). The continual exploration of these infants in the Strange Situation may then be seen as a "diversionary activity" enabling the infant to maintain the "deactivation" or repression of attachment behavior (Bowlby, 1980).

The proposal that, despite appearances to the contrary, experiences of distress are in some sense still active in Group A infants has been borne out in two studies investigating physiological responses. In the first (Sroufe and Waters, 1977), the heart rates of avoidant infants were found at least as elevated as those of secure infants during the separation episodes of the Strange Situation. Recently, pre-to-post Strange Situation rises in cortisol were found substantially (although not significantly)

greater for A as opposed to B infants (Spangler and Grossmann, 1993). In this context, it is interesting to note that Ainsworth's most avoidant infants had exhibited marked distress during even minor separations inside the home environment, where they also initiated unpredictable and unprovoked aggressive attacks upon the mother (Ainsworth et al., 1978). In the Strange Situation, then, it seems that not only attachment behavior, but also angry behavior was being repressed or deactivated.

At six, children who avoided mother in infancy tended to draw floating, smiling, nonindividuated family figures, often lacking arms (Kaplan and Main, 1986); frequently turned away from or refused the photograph of the family, or else, accepting it, turned it backwards or dropped it; and, while describing the pictured child as sad during parent-child separations, insisted that they had no idea what the child might do ("I don't know," "Run away"). Some offered magical solutions.

Group C: Insecure—Ambivalent/Resistant

Infants are considered ambivalent/resistant when they appear preoccupied with the mother throughout the Strange Situation, mixing subtle to open resistance in the reunion episodes with continuing expressions of distress and proximity-seeking. Behavior is also marked by heightened emotionality (some exhibit fear at entering the unfamiliar room), little exploration, and an inability to be settled by the parent. To the observer, the Strange Situation behavior of Group C infants can be puzzling—essentially because distress is displayed at length in the presence of a natural clue to safety, i.e., mother's presence.

Ainsworth's home records showed that mothers of C infants were not rejecting of attachment behavior, but were unpredictable in responsiveness and discouraging of autonomy. A review of more recent studies concludes that mothers of Group C infants are distinguished for low, and probably unpredictable, involvement (Cassidy and Berlin, in press). I have suggested that the infants of parents who are unpredictable, and

therefore potentially undependable in an emergency, may need to maximize the display of attachment behavior in circumstances normally indicative of safety (Main, 1990).

Few children classified ambivalent/resistant with mother in infancy were available for our sixth-year followup study. Responding to pictured parent-child separations at six, one former Group C infant suggested tossing a bow and arrow at the parents; the other suggested buying the parents flowers, but then hiding their clothing. Both showed some behavioral disorganization at presentation of the photograph. Group C children (taken from our own and succeeding samples) tend to draw very large or very small family figures, placed close together. Some emphasize vulnerable body parts, such as round bellies with belly-buttons.

Group D: Disorganized/Disoriented

Some infants cannot be classified in accordance with Ainsworth's original directions, and are currently termed "cannot classify" (or else unclassifiable, see Main and Solomon, 1990). In our Bay Area study, for example, some infants called for mother during her absence, attempted to open the door (behavior fitting the B or C categories), then fell silent and sharply avoided and ignored her immediately upon reunion (behavior fitting the A category). Reviewing a set of 200 hard-to-classify Strange Situation videotapes taken from both normal and maltreatment samples, we found that what the great majority of unclassifiable (CC) infants shared in common was disorganization and/or disorientation in behavior, exhibited in the parent's presence. These "unclassifiable" infants were observed, for example, rocking on hands and knees with face averted following an abortive approach to the parent; moving away from the parent to lean head on wall when apparently frightened by the stranger; raising hand to mouth in an apprehensive gesture immediately upon reunion; and rising to greet the parent on reunion, then falling prone to the floor. Some infants were

observed to freeze all movement with a trancelike expression (e.g., standing immobile with arms in air). Because D behavior represents an interruption in organized behavior as opposed to a new form of organization, the D category is assigned together with a best-fitting, alternate A, B, C, or CC classification (such as, D/B or D/CC). Children unclassifiable (CC) without also being disorganized/disoriented are extremely rare in infancy and will not be discussed further (Main and Solomon, 1990). In the Spangler and Grossmann study (1993), Group D infants showed statistically significant, sharp rises in cortisol succeeding the Strange Situation. Almost all D infants in this sample had been alternatively assigned to Group B, underscoring the import of these brief bouts of disorganized/disoriented behavior (sometimes lasting just 10"–30" in total).

We have proposed that A and C infants have developed indirect or "conditional" strategies for dealing with frightening situations in the company of a parent who has historically been either rejecting or unpredictably responsive (Main, 1990). Disorganized/disoriented behavior, in contrast, seems to reflect a collapse of behavioral (as well as attentional) strategy which should be expected if the attached infant is *frightened by the parent, rather than simply by the external situation*. Because the infant inevitably seeks the parent when alarmed, frightening behavior on the part of the parent should place an attached infant in an irresolvable paradox in which the infant can neither approach (the B and C "strategies"), shift its attention (the A "strategy"), or flee (Main and Hesse, 1990, 1992). In keeping with this hypothesis, the great majority of maltreated children (80 percent) have been found to fit to the D category (Carlson et al., 1989; Lyons-Ruth et al., 1991). We believe that in some circumstances frightened parental behavior may also be frightening to the infant, especially when the parent additionally appears dissociated. In this case the infant may be in no way maltreated, but may simply be frightened by strange (e.g., occasional trancelike) behavior on the part of the parent associated with the parent's own history of loss or maltreatment. Under

such conditions, infant D attachment status may appear as a *second-generation effect of the parent's own traumatic experiences*.

At six, children who had been disorganized/disoriented with mother in infancy frequently scratched out parts of their family drawings, restarted a figure in another place, or asked to begin the drawing again on another page. Most also added ominous or over-bright elements to the drawings (e.g., a family standing on a row of hearts; dismembered body parts; or skeletons). Group D children frequently seemed depressed at presentation of the photograph, and some seemed to become lost in it. One bent silently over the photograph for 12 seconds; another murmured "Where are you, mama?" In response to the pictured separations, some fell silent; some spoke in whispers; some became verbally disorganized ("yes/no, yes/no, yes/no"); and some exhibited directly frightening or frightened ideation, as, the parent might die, or the child might lock himself in a closet (Kaplan, 1987). Succeeding studies continue to show fearful/violent and catastrophic fantasies (as well as frozen silences) in these children when asked to participate in play involving parental figures (e.g., Solomon and George, 1991). These representational responses stand in sharp contrast to the seemingly well-organized, if inappropriate, controlling and role-inverting reunion behavior exhibited by former D infants toward mother at six, which appears in the form of either punitive or caregiving behavior (Main and Cassidy, 1988; Wartner et al., in press).

The Adult Attachment Interview: Parental States of Mind with Respect to Attachment as Predictive of Infant Attachment Classifications

The Adult Attachment Interview is a structured, semiclinical interview focusing on early attachment experiences and their effects. Subjects are asked for five adjectives to describe their relationship to each parent during childhood, and then asked for memories that support their choice of each adjective. They

are asked whether they felt closer to one parent, and why; whether they have ever felt rejected during childhood; whether parents had been threatening with them in any way; why parents may have behaved as they did during childhood; and how these experiences may have affected the development of their personality. In addition, they are asked about any major loss experiences. The technique has been described as one of "surprising the unconscious" (George et al., 1985), and a quick review of the interview format shows that it provides ample opportunities for a speaker to contradict, or else simply fail to support, earlier or succeeding statements.

The hour-long interview is transcribed verbatim, and judges work exclusively from the speech (discourse) record. Several scoring systems assist judges in reaching a final classification describing an individual's current state of mind with respect to early experiences and their effects. The subject's presentation of his or her "experiences" is considered relevant only as it is judged to adhere to or violate coherent discourse. Grice (1975) has identified coherent discourse as following a cooperative principle, and requiring adherence to the maxims of *quality* ("be truthful, and have evidence for what you say"), *quantity* ("be succinct, yet complete"), *relation* ("be relevant or perspicacious"), and *manner* ("be clear and orderly").

In our original sixth-year followup study, four adult classifications were devised, each being found to match the infant's Strange Situation classification with the parent five years previously. Thus, secure/autonomous parents had had secure infants; dismissing parents had had avoidant infants; preoccupied parents had had ambivalent/resistant infants; and unresolved/disorganized parents had had disorganized/disoriented infants (Main et al., 1985; Main and Goldwyn, 1993; Main and Hesse, 1990). These results were replicated immediately in Charlottesville (Ainsworth and Eichberg, 1991). As the reader will see from the descriptions of interview classifications provided below, the parent's response to the interview task

strongly resembles the infant's response to that parent in the Strange Situation.

Hesse (unpublished) has recently conceptualized the Adult Attachment Interview in terms of two central tasks. In essence, the interview presents the subject with the task of (1) producing and reflecting upon memories involving early relationships as well as any potentially traumatic experiences while (2) simultaneously maintaining coherent discourse with the interviewer. To participate most effectively in the interview, the speaker must respond to each question as relevant and then return the conversational turn to the interviewer. Discourse is judged coherent when a subject is able to both access and evaluate memories while simultaneously remaining truthful (consistent) and collaborative. This is difficult for the parents of insecure infants, and many meet the task with some resistance.

Transcripts are classified *secure/autonomous* when the subject's presentation and evaluation of attachment-related experiences is internally consistent, and responses are clear, relevant, and reasonably succinct. Many individuals with histories of difficult, or even traumatic (as well as positive) experiences are found to fit these criteria. While overall coherence is all that is required for placement in this category, many transcripts also leave the reader with the impression of an active and lively consciousness. We note a tendency for sentences to be placed in the active voice, and a related general willingness to examine the evidence afresh even when the interview is in progress. This is shown in "fresh" or lively speech in which wishes and facts may be spontaneously separated: "I know—and I, I also wish—that there is a special place in his heart where he remembers me." We have also noted corrective ("metacognitive") monitoring of statements just previously made: "No. I never felt rejected. Even if I had, I wouldn't have admitted it to myself. Well, actually, yes. I did feel rejected." Finally, more than other speakers, secure/autonomous individuals appear to me to take a "constructivist" position with respect to past interactions and their influences. During the interview, they may indicate that

their memories might be in error; that the person being discussed might have a different viewpoint; and that their present beliefs may later undergo, or may presently be the product of, representational change (Main, 1991).

Individuals are classified *dismissing* when discourse appears aimed at minimizing the import of attachment-related experiences. The interview responses of these individuals are superficially collaborative, but internal contradictions render them apparently untruthful. Frequently, Grice's maxim of quality (*be truthful, and have evidence for what you say*) is violated in that the parents tend to be described in highly positive terms ("excellent mother, a wonderful, caring relationship"), which are unsupported or actively contradicted by episodes later recounted ("I didn't tell her I broke my arm; she would have been really angry"). These contradictions appear to go unnoticed by the speaker, as though isolated. In part because of a frequently stated inability to recall childhood, responses to questions often violate the maxim of quantity by being excessively succinct ("I don't remember"). On the whole, individuals classified dismissing seem to be guided by an effort to appear to answer the questions without actually making linkages to memories. Whether such memories are in fact available at the moment is an open question: a study of physiological responses to the Adult Attachment Interview showed marked increases in skin conductance levels in dismissing subjects when asked to recall experiences of rejection, separation, and threat from parents (Dozier and Kobak, in press).

Individuals are classified *preoccupied* when they exhibit a confused, either angry or passive preoccupation with attachment figures or (very rare) a fearful preoccupation with traumatic experiences. Once started on a particular topic, these speakers frequently have difficulty—evidenced, e.g., in long, grammatically entangled sentences—in "moving on" in a timely way through the interview format. Violations of manner include use of psychological jargon ("I have a lot of material

around that issue"); nonsense words ("She was just caring dada-dada so much"); addressing the parent as though present in recounting a childhood episode ("She was really mental, I mean, she just started crying when she saw my clothes on the floor, and why did you do that, why can't you ever act like the mother?"); childlike speech ("So I, I hid from the grownups at dinner"); and repetitive use of nebulous phrases ("I would sit on his lap, and that"; "I phoned her, sort of a thing"). These speakers are also identified by violations of the maxim of relevance (as when questions about past relations with parents are met with discussions of recent interactions) and of quantity (interviews with these subjects are often excessively long).

In sum, for preoccupied subjects, interview questions appear to serve the purpose of stimulating memories, but the speaker is often unable to retain a focus on the interview queries. Hence, in many cases, the memories aroused, rather than the intent of the question itself, seem to draw the subject's attention and to guide the subject's speech (Hesse, unpublished).

Interviews are placed in the *unresolved/disorganized* category on the basis of indications of mental disorganization and disorientation occurring specifically during discussions of potentially traumatic events, such as loss of important persons, or physical or sexual abuse. These indices are identified as lapses in the monitoring of reasoning ("... and so, I've always thought that he died because I forgot to pray for him") and/or discourse (e.g., sudden alteration in discourse into eulogistic speech, such as, "she was young, she was lovely, and she was taken from us by that most dreaded of diseases, tuberculosis"). Lapses of this kind are usually brief and, as in the case of the infant D system, transcripts assigned to unresolved attachment status are also assigned to a second, best-fitting category, and an alternative secure/autonomous assignment is by no means infrequent (unresolved/secure). Not a few highly functioning individuals are assigned to this category.

We have suggested that lapses in the monitoring of reasoning or discourse may in various ways represent either interference from normally dissociated memory systems or unusual absorptions involving memories triggered by the discussion of traumatic events, and may be mediated by associated lapses in working memory (Main and Hesse, 1992). Specifically, lapses in reasoning—e.g., indications that a speaker believes a deceased person is both dead and not dead (in the immediate, physical sense)—may indicate parallel, incompatible belief and memory systems regarding a traumatic event which have become dissociated. Lapses in the monitoring of discourse, such as sudden changes into eulogistic speech, suggest the possibility of “state shifts” where the individual has entered a peculiar, compartmentalized state of mind involving a particular traumatic experience (Hesse, unpublished). Shifts of state involving intrusions from frightening, dissociated memories may result in frightened/frightening behavior on the part of the parent, and hence be the mechanism linking the parent’s unresolved state of mind to disorganized/disoriented behavior on the part of the infant. We have recently found that lapses in the monitoring of reasoning or discourse during the Adult Attachment Interview are in fact correlated with indications of dissociative states (Main et al., 1993).

Psychometric Properties of the Interview Classification and Scoring System

Investigators in five countries have reported on the psychometric properties of the Adult Attachment Interview. In low-risk samples, about 16 percent of subjects are judged dismissing, 56 percent secure/autonomous, 10 percent preoccupied, and 18 percent unresolved/cannot classify⁵ (Van IJzendoorn and

⁵As is the case in infancy, some individuals are unclassifiable with respect to the dismissing, preoccupied and secure criteria, but not substantially disorganized with respect to discussions of trauma. These are placed in the “cannot classify” category, which has been developed too recently for comparison with infant outcomes.

Bakersman-Kranenburg, in press). The dismissing, preoccupied and secure/autonomous categories have been found stable across two- to three-month periods in Britain, Holland, Israel and the USA and across a 15-month period in Canada (78 to 90 percent), but stability including the difficult-to-code unresolved/disorganized category is considerably lower. Interjudge agreement ranges around 80 to 85 percent, and category placement is not affected by interviewer. Waters has demonstrated that the state of mind being assessed is not reducible to a general style of discourse (Waters et al., 1993). In four out of five studies, adult state of mind with respect to attachment has been found unrelated to tests of general intelligence, memory, or verbal fluency (Van IJzendoorn and Bakersman-Kranenburg, in press).

Continued Prediction of Infant Strange Situation Behavior from the Adult Attachment Interview as Conducted with the Parent

The adult-to-infant correspondence described above has now been tested across more than a dozen further samples. The results, consistent across samples, are highly significant, as a recent meta-analysis of Adult Attachment Interview studies demonstrates (Van IJzendoorn, unpublished). Across studies, the parent-to-child secure versus insecure match is about 78 percent. The match across the four categories is about 68 percent (and higher when coders have had more extensive training).

So long as the Adult Attachment Interview is conducted following the Strange Situation, we might infer that the parent's state of mind with respect to attachment is being affected by the infant. However, the Adult Attachment classification of a prospective, first-time parent three months prior to birth predicts the infant's Strange Situation behavior to that parent 15 months later equally well as studies in which the interview has been conducted following the birth of the child. These prebirth studies have been conducted in four countries, and include a

study of middle-class London mothers (Fonagy et al., 1991); a poverty sample of African-American and Hispanic adolescents in inner-city New York (Ward and Carlson, in press); a study of Australian fathers (Radojevic, 1992); and a study of Ontario mothers (Benoit and Parker, in press). In this latter study, mothers and adult daughters were found as well matched in Adult Attachment Interview classification as daughters and their infants: using the dismissing, preoccupied and secure/autonomous classifications, the match was 75 percent.

It appears, then, that the overall coherence of an adult's discourse during discussions of early relationships and their effects predicts the security of the unborn child, while specifiable kinds of incoherence in discourse predict specific manifestations of insecurity with respect to the parent, as displayed in avoidant, ambivalent/resistant, and disorganized/disoriented behavior. Several studies have now shown that secure attachment status in mothers is directly associated with sensitive responsiveness to infants and young children. In the future, given the development of adequate systems of observation, it seems likely that we may discover further associations between specific forms of incoherence as manifest in the parent's discourse, and parental insensitivity to selected infant signals.

Conclusions: Attachment and Psychoanalysis

The opening sections of this article have had a necessarily empirical and descriptive focus. My concluding remarks are primarily speculative, and focus upon (1) the relations between "conditional strategies" and the development of defensive processes, (2) the maintenance of steady attentional/representational states as related to signal anxiety and the intergenerational transmission of attachment patterns, and (3) implications of the Adult Attachment Interview for the hermeneutic/constructivist controversy in psychoanalysis.

Conditional Strategies, Control of Attention, and Development of Defensive Processes

In emphasizing the immediacy of the tie between proximity-maintenance and survival in the environment of evolutionary adaptedness, Bowlby drew attention to two conditions of danger: (1) environmental or internal changes directly and immediately threatening to the infant's continuing survival (Freud's [1926] realistic danger), and (2) any conditions intimating separation from the attachment figure, even in the absence of immediate threats from the environment (Bowlby's second realistic danger, and Freud's neurotic danger, to which the infant was expected to respond with learned, or signal, anxiety). Both conditions were expected to activate attachment behavior, while proximity to the mother was expected to terminate it. Exceptions were noted in two- to three-year-old children undergoing prolonged, stressful separations from the parents. Separated for a long enough period, children of this age were observed to enter a state of detachment in which signs of concern with the mother were finally absent (Bowlby, 1969, 1973). Detachment was considered indicative of the onset of repression; repression was considered a result of traumatic experience; and experiences of this kind were considered anomalous in terms of man's evolutionary environment. The onset of detachment had been signaled by avoidance of the mother upon her visit to the toddler in the separation setting.

In this light, we can well understand the initial impact of Ainsworth's discoveries regarding the Strange Situation behavior of twelve-month-old, home-reared infants who had no experiences of major separation. As the reader will remember, only (that majority of) infants whose mothers had been "sensitive and responsive to infant signals and communications" in the home showed the expected behavioral patterning. For infants whose attachment behavior had been consistently rejected, threatening conditions failed to activate attachment behavior. For infants whose mothers had been unpredictable, mother's

presence failed to terminate it. Insecure infants, then, either failed to exhibit attachment behavior in threatening conditions, actively avoiding the mother upon reunion, or, remaining preoccupied with mother throughout the separation, failed to explore in conditions of safety. It appeared that behavior bearing a phenotypic resemblance to defensive processes could develop out of patterns of everyday interaction as well as in response to traumatic separations.

Let us now consider these somewhat anomalous or unexpected findings in the light of modern evolutionary biology, and specifically in light of the concept of the "conditional behavioral strategy" (see Maynard-Smith, 1979). Drawing on primate studies, Hinde (1982) questioned whether mothers will be optimally "sensitive" to their infants in all circumstances, or whether variability in circumstances could produce substantial variability in maternal sensitivity and responsiveness. Specifically, he utilized the concept of the conditional behavioral strategy to suggest that "natural selection must surely have operated to produce conditional maternal strategies, not stereotypy," i.e., to produce lability of the response repertoire. In certain environments, then, the mother's reproductive success may be optimized through behavior patterns which violate maximally sensitive caregiving: under these conditions, she may be, e.g., somewhat rejecting (perhaps promoting early infant independence) or somewhat unpredictably responsive (perhaps promoting a prolonging of dependence). There is no implication that the mother's (or infant's, see below) selection of a particular strategy need be conscious. Moreover, as opposed to primary caregiving (or proximity-seeking) strategies, which are presumed to be based on the activities of instinctively biased behavioral systems, conditional behavioral strategies are not presumed to rely on the operation of any particular "conditional behavioral system"—as, for example, a "rejecting" or an "avoidance" behavioral system—but may instead simply involve manipulations of the output of the primary system utilizing coexisting mechanisms (Main, 1990).

I have suggested that infants may also utilize conditional behavioral strategies. Specifically, avoidant and ambivalent/resistant infants may be conceived as having developed conditional behavioral strategies for maintaining proximity and/or behavioral organization under conditions of maternal rejection or unpredictable responsiveness. As the reader is already aware, however, the attachment behavioral system is conceived of as being continually active and context-sensitive. In this conceptualization, then, the conditional behavioral strategy (avoidance or preoccupation) is understood to be imposed on a still-active primary strategy, imposed on aspects of memory, and imposed on awareness of surrounding conditions. Maintenance of the “minimizing” (A) or “maximizing” (C) behavioral strategy is then dependent on the control or manipulation of attention—specifically, an organized shift of attention away from conditions activating attachment behavior in Group A infants, and a heightened vigilance maximizing responsiveness to even minimal clues to danger in Group C infants. It seems inevitable that a continuing “minimization or maximization of the display of attachment behavior relative to the naturally occurring output of the behavioral system” (Main, 1990) will eventually also involve the defensive exclusion or defensive distortion of certain memories and perceptions, as suggested by the Bay Area followup study described above.

Intergenerational Transmission of Insecure/Avoidant and Insecure/Ambivalent Attachment Patterns: Maintenance of Organized Attentional/Representational States as Related to Signal Anxiety

We have now arrived at a proposal regarding the origins of defensive processes *as related to attachment*. Specifically, I have proposed that infants whose mothers are either rejecting or unpredictably responsive must learn to either limit the exhibition of attachment behavior in the presence of activating conditions, or heighten the exhibition of attachment behavior in the

presence of terminating conditions. It seems possible that the manipulation of attentional patterning plays a substantial role in the control of behavior for young infants, and that the continuing control of behavior will involve distortions or limitations placed on memory and perception. Thus, defensive processes with respect to attachment are seen as serving to control or manipulate behavior in the service of permitting the infant to maintain proximity to a rejecting, or else inconsistently responsive, parent. Note that what is "repressed" or defensively excluded in this conceptualization is not the memory of any particular traumatic experience, but rather an alternative attentional and behavioral patterning.⁶

If the above conceptualization of the origins of defensive processes with respect to attachment are correct, we can make the following further observations:

1. The avoidant and ambivalent/resistant patterns are conceived as ultimately being held in place by maintenance of a steady attentional/representational state. Violations of these attentional states—specifically, circumstances forcing shifts in attention toward threatening conditions and attachment figures in avoidant/dismissing individuals, and conditions forcing attention away from attachment figures in ambivalent/preoccupied individuals—may eventually in themselves promote feelings of anxiety. Maintenance of these states may therefore subjectively be experienced as a kind of secondary felt security, originating in the conditional strategy which the individual has utilized for maintaining proximity to the parent. Feelings, memories, attentional patterning or interactions threatening to violate these states may then be controlled by signal anxiety.

2. Freud (1926) identified feelings of anxiety as tied to expectations; as having a quality of indefiniteness and lack of object; and as referencing a danger "still to be discovered." In

⁶Defense is, of course, organized. Disorganized/disoriented behavior is not defensive in the traditional sense, and indeed Freud had conceptualized disorganization as the state to which defense is the alternative. Following a suggestion made by Liotti (in press), we have recently conceptualized both unresolved adult attachment status and disorganized/disoriented infant at-

keeping with Bowlby's early insistence on the "primary" nature of the anxiety displayed by infants undergoing separation, the response to maternal leavetaking exhibited by infants whose mothers have been sensitively responsive to their signals and communications would not seem indicative of feelings of anxiety (see also Spangler and Grossmann, 1993). Avoidant and ambivalent/resistant infants, however, may experience a kind of learned or signal anxiety in keeping with the complexity and indefiniteness of their situation (see Main, 1990).

3. The similarities uncovered between the behavior of avoidant and ambivalent/resistant infants in the Strange Situation and the discourse of dismissing and preoccupied adults during the Adult Attachment Interview are extraordinary. Considered solely from the viewpoint of discourse, both dismissing and preoccupied adults may be said to exhibit forms of resistance to the interviewer's insistent requests for a description of their attachment-related experiences, and for an evaluation of the relation between those experiences and their present state of mind.

4. In the case of some insecure speakers, we may draw an analogy to the patient who does not *remember* anything of what he has forgotten and repressed, but *acts* it out (Freud, 1914, p. 150). By action, we may refer to behavior toward the infant.

5. Like their infants, then, dismissing and preoccupied adults seem to seek to preserve their own particular attentional/representational states of mind. During the interview, these states may be preserved in part through violations of Grice's principles of coherence and collaboration. In interaction with the infant, the parent's state of mind with respect to attachment is likely to be preserved by failure to perceive, accurately interpret, or respond to infant behavior which threatens to alter that state. The infant's "conditional behavioral strategy" may then be conceived as a response to parental blocking, distortion,

tachment status in terms of dissociative, as opposed to more traditionally defensive processes (Main and Hesse, 1992).

or failures in responsiveness to selected infant signals. The development of a "conditional (A or C) behavioral strategy" on the part of the infant then ultimately assists the insecure parent in preservation of a particular state of mind.

6. With respect to the above, Sander (1987) notes that "Each infant-caregiver system constructs its own unique configuration of regulatory constraint on the infant's access to awareness of his own states" (p. 344). The work of Sander and his colleagues suggests that dyadic adjustments begin in the earliest weeks of infant life, and are potentially supportive of the above proposal.

7. Writing in 1937, Freud notes, "It is easy, then, to accept the fact, shown by daily experience, that the outcome of an analytic treatment depends essentially on the strength and on the depth of root of these resistances that bring about an alteration of the ego" (pp. 239–240). Further, modifications of the ego were understood to be "either congenital or acquired. . . . If they are acquired, it will certainly have been in the course of development, starting from the first years of life" (p. 235). The development of alterations in attentional patterning in the service of control or manipulation of behavior may constitute one important form of early ego modification. Ultimately, these alterations serve protection.

Implications of Recent Work in Attachment for the Hermeneutic/Constructivist Controversy in Psychoanalysis

The work in attachment described above has implications for the hermeneutic/constructivist controversy in psychoanalysis. Briefly, this controversy has arisen in conjunction with the recent "linguistic turn" in psychoanalysis, in which psychoanalysis is either considered nonscience, or else is reconceptualized as a linguistic/historic science working by criteria differing from the correspondence/prediction criteria of the natural sciences (Wallerstein, 1986). The call for different criteria has originated in part in recognition of two difficulties: that of establishing correspondence between interpretation and history, and

that of developing criteria for selecting between conflicting interpretations (Grünbaum, 1984; Eagle, 1984). In keeping with the linguistic turn in psychoanalysis, some have suggested that analysts should abandon the “discourse of energetics” (roughly, instinct theory) for the “discourse of meanings” (as expressed in language; see Ricoeur, 1970).

Philosophers have traditionally differentiated between two theories of truth: a *coherence* theory of truth which relies on consistent internal coreference and a *correspondence* theory of truth which relies on the plausibility of statements in terms of correspondence to the real state of affairs in the external world (Main, 1991). As a discipline founded in text interpretation, hermeneutics emphasizes a coherence/consistence form of truth as opposed to correspondence. The distinctive method of the hermeneutic “dialogue” between part and whole allows the interpreter to approach an understanding of text which eventually meets the test of internal coherence, consistency, and configuration (Steele, 1979). Ricoeur (1977) concludes that in psychoanalysis, as in text analysis, truth resides in establishing a “confirmatory constellation” which meets the joint criteria of coherence, inner consistency, and narrative intelligibility.

To those taking a constructivist position, the search for internal coherence and consistency in narrative is frequently (but, I believe, not necessarily) contrasted to the search for external correspondence. First, as Wallerstein points out, the coherence/consistence language of Ricoeur and of Steele is still a “language of evidence and of proof, albeit by hermeneutic-interpretive canons” (Wallerstein, 1986). In addition, Wallerstein notes that tests for predictive correspondence may be ultimately conceptualized as unusually broad tests for consistency in which the externally correspondent existence of some phenomenon yet to be observed will be regarded as either consistent or inconsistent with theory. Finally, all “theorizing or generalizing” sciences, natural as well as social, advance through the method of hypothesis (Blight, 1981).

The methodology and findings surrounding the Adult Attachment Interview stand in a complex and somewhat ironic relation to hermeneutics, to Wallerstein's response to the hermeneutic "challenge" to psychoanalysis, and to contemporary controversies regarding the scientific status of studies of the mind. This statement may be elaborated as follows:

1. Our general approach to developing methodologies has been at once dialectical and in keeping with the canons of normal science. Thus, in developing and refining each new method, we have worked between a known behavior pattern (often, infant Strange Situation response to a given parent) and behavior or language of one or the other individual in a second situation.

In first developing the Adult Attachment classification system across a sample of 44 interview transcripts of parents seen five years previously with the infant in the Ainsworth Strange Situation, we used both the "dialectical" method and the "method of hypothesis." On reading each transcript, we formed a hypothesis regarding likely infant Strange Situation response to that parent as speaker. The hypothesis was specified through a description of those characteristics of the text which led us to believe it would belong to a speaker in a particular "state of mind with respect to attachment" as expressed in caregiving. In each case the hypothesis was "tested" against the infant's Strange Situation behavior in the company of the speaker, and feedback regarding errors was used to refine and test our further hypotheses. A transcript hypothesized to belong to the parent of a secure infant, and in fact belonging to the parent of a secure infant, left the rule system unchanged: should the transcript hypothesized to belong to the parent of a secure infant in fact belong to the parent of an avoidant infant in ways *not* inconsonant with theory (the latter suggests a true miss, or lack of concordance), we altered the rule system for identifying both dismissing and autonomous transcripts. Thus we used feedback from each transcript to develop a rule system discriminating responses to the interview for parents of infants fitting

to each category. Note that this system acknowledges mismatches in its development, and leaves open the possibility of studying new mismatches within succeeding samples.

As required by scientific method, (a) this rule system was then immediately tested against a sample of 66 further transcripts for which the coder had no information regarding infant Strange Situation behavior and (b) was shortly thereafter found readily communicable to, hence reliable across, coders. Finally (c), the association between secure vs. insecure interview transcript and secure vs. insecure infant Strange Situation behavior described by this dialectical method of system development has been replicated in over a dozen studies (Van IJzendoorn, in press).

2. As Wallerstein had noted, while the “hermeneutic circle” involves a search for internal consistency, a broad interpretation of consistency includes predictive correspondence (Holt, 1961). We broadened the “hermeneutic circle” by *stepping outside the text* to find consistency with behavior observed several years previously in an entirely different setting. What was considered informative in furthering our understanding of the text was not simply existing relations between parts of the text, but behavior that was externally correspondent. Although the “behavior” observed in this case was that of the infant toward the speaker, the mediating variable is of course the speaker’s behavior toward the infant, i.e., the speaker’s caregiving.

3. As the reader is aware, some texts were found more coherent than others, and incoherent texts suggested to us that a speaker retained “multiple, incompatible models” of his or her attachment history (Main, 1991). For constructivists, one implication of our findings would be that not all texts are equally in need of being “disambiguated” (i.e., not all texts are ambiguous). At a psychological level, highly ambiguous texts may in fact reflect the speaker’s confused and multiple meanings/intentions. The reader should further note that what we attempt to “disambiguate” is not a speaker’s history, but rather a speaker’s current state with respect to his or her history. Finally,

insofar as it renders the history of an insecure speaker incoherent or noncollaborative, the language form may, again, be compared to resistance.

4. From the strict hermeneutic standpoint, consistency/coherence of text is all we can hope to achieve: figuratively, at least, there is nothing beyond the text. Our findings with respect to the Adult Attachment Interview indicate, however, that both coherent (secure) and incoherent (dismissing, preoccupied, and unresolved) texts point beyond themselves. Indeed, each points to something external, predictable, and correspondent.

In sum, in developing the Adult Attachment Classification system, we broadened the “hermeneutic circle” by considering *behavior outside the text* as part of the hermeneutic whole. I believe that our findings with respect to the predictable relation between the interview and infant Strange Situation behavior—generated through a semihermeneutic methodology, emphasizing of coherence, and affirmed through a method of hypothesis—are in keeping with the reflections of Wallerstein as well as Blight and Holt.

The establishment of a systematic, predictable, and replicable correspondence between coherence in life narratives and behavior “outside the text” should not, however, conceal the irony of our findings with respect to the hermeneutic controversy:

i. Those parental narratives which best met the *hermeneutic* truth criteria of the greatest internal/linguistic coherence were exactly those predictive of/correspondent to the greatest (*external/behavioral*) security of attachment observed in the infant.

ii. Bowlby’s instinct theory of attachment formed the background to these discoveries linking behavior and mental states. While findings made in a particular context do not validate that context (*post hoc ergo propter hoc*), we can nonetheless trace history accurately in reflecting that a discourse beginning in energetics has contributed to a discourse of meanings.

REFERENCES

- AINSWORTH, M. D. S., BELL, S. M. & STAYTON, D. J. (1971). Individual differences in strange-situation behavior of one-year-olds. In *The Origins of Human Social Relations*, ed. H. R. Schaffer. New York: Academic Press.
- BLEHAR, M. C., WATERS, E. & WALL, S. (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- & EICHBERG, C. G. (1991). Effects on infant-mother attachment of mother's unresolved loss of an attachment figure or other traumatic experience. In *Attachment Across the Life Cycle*, ed. P. Marris, J. Stevenson-Hinde & C. Parkes. New York: Routledge, pp. 160–183.
- BENOIT, D. & PARKER, K. (in press). Stability and transmission of attachment across three generations. *Child Devel.*
- BLIGHT, J. G. (1981). Must psychoanalysis retreat to hermeneutics? Psychoanalytic theory in the light of Popper's evolutionary epistemology. *Psychoanal. Contemp. Thought*, 4:147–206.
- BOWLBY, J. (1969). *Attachment and Loss, Vol. 1: Attachment*. New York: Basic Books.
- (1973). *Attachment and Loss, Vol. 2: Separation*. New York: Basic Books.
- (1980). *Attachment and Loss, Vol. 3: Loss*. New York: Basic Books.
- BRETHERTON, I. (1985). Attachment theory: retrospect and prospect. In *Growing Points of Attachment Theory and Research*, ed. I. Bretherton & E. Waters. *Monogr. Soc. Res. Child Devel.*, 50:66–104.
- & WATERS, E., Eds. (1985). *Growing Points of Attachment Theory and Research. Monogr. Soc. Res. Child Devel.*, 50.
- BRUNER, I. (1990). *Acts of Meaning*. Cambridge, MA: Harvard Univ. Press.
- CARLSON, V., CICHETTI, D., BARNETT, D. & BRAUNWALD, K. (1989). Disorganized/disoriented attachment relationships in maltreated infants. *Devel. Psychol.*, 25:525–531.
- CASSIDY, J. & BERLIN, L. (in press). The insecure/ambivalent pattern of attachment: theory and research. *Child Devel.*
- CLYMAN, R. B. (1991). The procedural organization of emotions: a contribution from cognitive science to the psychoanalytic theory of therapeutic action. *J. Amer. Psychoanal. Assn.*, 39(Suppl.):349–382.
- DOZIER, M. & KOBAK, R. R. (in press). Psychophysiology in attachment interviews: converging evidence for deactivating strategies. *Child Devel.*
- EAGLE, M. N. (1984). *Recent Developments in Psychoanalysis: A Critical Evaluation*. New York: McGraw-Hill.
- (1987). The psychoanalytic and the cognitive unconscious. In *Theories of the Unconscious and Theories of Self*, ed. R. Stern. Hillsdale, NJ: Analytic Press.
- FONAGY, P., STEELE, H. & STEELE, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. *Child Devel.*, 62:891–905.
- FREUD, S. (1914). Remembering, repeating and working through. *S. E.*, 12.
- (1926). Inhibitions, symptoms and anxiety. *S. E.*, 20.
- (1937). Analysis terminable and interminable. *S. E.*, 23.
- GEORGE, C., KAPLAN, N. & MAIN, M. (1985). The Berkeley Adult Attachment Interview. Unpublished protocol, Department of Psychology, University of California, Berkeley.

- GRICE, H. P. (1975). Logic and conversation. In *Syntax and Semantics: III. Speech Acts*. New York: Academic Press, pp. 41–58.
- GROSSMANN, K. E. & GROSSMANN, K. (1991). Attachment quality as an organizer of emotional and behavioral responses in a longitudinal perspective. In *Attachment Across the Life Cycle*, ed. C. M. Parkes, J. Stevenson-Hinde & P. Marris. London: Tavistock/Routledge.
- GRÜNBAUM, A. (1984). *The Foundations of Psychoanalysis: A Philosophical Critique*. Berkeley: Univ. California Press.
- HINDE, R. A. (1982). Attachment: conceptual and biological considerations. In *The Place of Attachment in Human Behaviour*, ed. C. Parkes & J. Stevenson-Hinde. London: Tavistock.
- HOLT, R. R. (1961). Clinical judgment as a disciplined inquiry. *J. Nerv. Ment. Dis.*, 133:369–382.
- KAPLAN, N. (1987). *Individual Differences in Six-Year-Old's Thoughts about Separation: Predicted from Attachment to Mother at Age One*. Unpublished doctoral dissertation, Department of Psychology, University of California, Berkeley.
- & MAIN, M. (1986). A system for the analysis of children's family drawings in terms of attachment. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- KIHLSTROM, J. F. (1987). The cognitive unconscious. *Science*, 237:1445–1452.
- LIOTTI, G. (1992). Disorganized/disoriented attachment in the etiology of the dissociative disorders. *Dissociation*, 4:196–204.
- (in press). Disorganized attachment and dissociative experiences: an illustration of the developmental-ethological approach to cognitive therapy. In *Cognitive Therapy in Action*, ed. H. Rosen & K. T. Kuehlwein. San Francisco: Jossey-Bass.
- LYONS-RUTH, K., REPACHOLI, B., MCLEOD, S. & SILVA, E. (1991). Disorganized attachment behavior in infancy: short-term stability, maternal and infant correlates, and risk-related subtypes. *Devel. Psychopathol.*, 3:397–412.
- MAIN, M. (1981). Avoidance in the service of attachment: a working paper. In *Behavioral Development: The Bielefeld Interdisciplinary Project*, ed. K. Immelmann, G. Barlow, L. Petronovitch & M. Main. New York: Cambridge Univ. Press, pp. 651–693.
- (1990). Cross-cultural studies of attachment organization: recent studies, changing methodologies and the concept of conditional strategies. *Human Devel.*, 33:48–61.
- (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) models of attachment: findings and directions for future research. In *Attachment Across the Life Cycle*, ed. C. M. Parkes, J. Stevenson-Hinde & P. Marris. London: Routledge, pp. 127–159.
- & CASSIDY, J. (1988). Categories of response to reunion with the parent at age six: predicted from attachment classifications and stable over a one-month period. *Devel. Psychol.*, 24:415–426.
- & GOLDWYN, R. (1993). *Adult Attachment Scoring and Classification System*. Unpublished manuscript, Department of Psychology, University of California at Berkeley.
- & HESSE, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: is frightened and/or

- frightening parental behavior the linking mechanism? In *Attachment in the Preschool Years: Theory, Research and Intervention*, ed. M. T. Greenberg, D. Cicchetti, & E. M. Cummings. Chicago: Univ. Chicago Press, pp. 161–182.
- (1992). Disorganized/disoriented infant behavior in the Strange Situation, lapses in the monitoring of reasoning and discourse during the parent's Adult Attachment interview, and dissociative states. In *Attachment and Psychoanalysis*, ed. M. Ammaniti & D. Stern. Rome: Gius, Laterza & Figli.
- & VAN IJZENDOORN, M. H. (1993). Lapses in the monitoring of reasoning or discourse during the Adult Attachment Interview: related to dissociation, absorption, and difficulties with working memory. Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, March 28.
- KAPLAN, N. & CASSIDY, J. (1985). Security in infancy, childhood and adulthood: a move to the level of representation. In *Growing Points of Attachment Theory and Research*, ed. I. Bretherton & E. Waters. *Monogr. Soc. Res. Child Devel.*, 50:66–104.
- & SOLOMON, J. (1986). Discovery of a new, insecure-disorganized/disoriented attachment pattern. In *Affective Development in Infancy*, ed. T. B. Brazelton & M. Yogman. Norwood, NJ: Ablex, pp. 95–124.
- (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In *Attachment in the Preschool Years: Theory, Research and Intervention*, ed. M. T. Greenberg, D. Cicchetti & E. M. Cummings. Chicago: Univ. Chicago Press, pp. 121–160.
- & STADTMAN, J. (1981). Infant response to rejection of physical contact by the mother: aggression, avoidance and conflict. *J. Amer. Acad. Child Psychiat.*, 20:292–307.
- & WESTON, D. (1982). The quality of the toddler's relationship to mother and to father: related to conflict behavior and the readiness to establish new relationships. *Child Devel.*, 52:932–940.
- (1982). Avoidance of the attachment figure in infancy: descriptions and interpretations. In *The Place of Attachment in Human Behavior*, ed. C. M. Parkes & J. Stevenson-Hinde. New York: Basic Books.
- MAYNARD-SMITH, J. (1979). Games theory and the evolution of behavior. *Proc. Royal Soc. London*, 205:475–488.
- MODELL, A. (1975). The ego and the id: 50 years later. *Int. J. Psychoanal.*, 56:57–88.
- RADOJEVIC, M. (1992). Predicting quality of infant attachment to father at 15 months from prenatal paternal representations of attachment: an Australian contribution. Paper presented at the 25th International Congress of Psychology, Brussels, Belgium, 19–25 July.
- RICOEUR, P. (1970). *Freud and Philosophy: An Essay on Interpretation*. New Haven, CT: Yale Univ. Press.
- (1977). The question of proof in Freud's psychoanalytic writings. *J. Amer. Psychoanal. Assn.*, 25:835–871.
- ROSENBERG, D. M. (1984). *The Quality and Content of Preschool Fantasy Play: Correlates in Concurrent Social-Emotional Personality Function and Early Mother-Child Attachment Relationships*. Unpublished doctoral dissertation, University of Minnesota.

- SANDER, L. W. (1987). Awareness of inner experience: a systems perspective on self-regulatory process in early development. *Child Abuse & Neglect*, 11:339-346.
- SOLOMON, J. & GEORGE, C. (1991). Working models of attachment of children classified as controlling at age six: disorganization at the level of representation. Paper presented at the biennial meeting of the Society for Research in Child Development, April, Seattle.
- SPANGLER, G. & GROSSMANN, K. E. (1993). Biobehavioral organization in securely and insecurely attachment infants. *Child Devel.*, 64:1439-1450.
- SROUFE, L. A. & WATERS, E. (1977). Heart rate as a convergent measure in clinical and developmental research. *Merrill Palmer Q.*, 23:3-27.
- STEELE, R. S. (1979). Psychoanalysis and hermeneutics. *Int. Rev. Psychoanal.*, 6:389-412.
- SUESS, G. J., GROSSMANN, K. E. & SROUFE, L. A. (1992). Effects of infant attachment to mother and father on quality of adaptation in preschool: from dyadic to individual organization of self. *Int. J. Behav. Devel.*, 15:43-65.
- URBAN, J., CARLSON, E., EGELAND, B. & SROUFE, L. A. (1991). Patterns of individual adaptation across childhood. *Devel. Psychopathol.*, 3:445-460.
- VAN IJZENDOORN, M. H. (in press). Attachment representations in mothers, fathers, adolescents and clinical groups: a meta-analytic search for normative data. *J. Clin. Consult. Psychol.*
- & BAKERSMAN-KRANENBURG, M. J. (in press). Attachment representations in mothers, fathers, adolescents and clinical groups: a meta-analytic search for normative data. *J. Consult. Clin. Psychol.*
- WALLERSTEIN, R. S. (1986). Psychoanalysis as a science: a response to the new challenges. *Psychoanal. Q.*, 55:414-451.
- WARD, M. J. & CARLSON, E. A. (in press). The predictive validity of the adult attachment interview for adolescent mothers. *Child Devel.*
- WARTNER, U. G., GROSSMANN, K., FREMMER-BOMBIK, E. & SUESS, G. (in press). Attachment patterns at age six in South Germany: predictability from infancy and implications for preschool behavior. *Child Devel.*
- WATERS, E.; CROWELL, J.; TREBOUX, D.; O'CONNOR, E.; POSADA, G. & GOLBY, B. (1993). Discriminant validity of the Adult Attachment Interview. Paper presented at the 60th Meeting of the Society for Research in Child Development, New Orleans, LA.

Department of Psychology
University of California
Berkeley, CA 94720