

Disorganized Infant, Child, and Adult Attachment: Collapse in Behavioral and Attentional Strategies

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This presentation focuses on the disorganized/disoriented (Group D) categories of infant, child, and adult attachment. The infant D category is assigned on the basis of interruptions and anomalies in organization and orientation observed during Ainsworth's strange situation procedure. In neurologically normal low-risk samples, D attachment is not substantially related to descriptions of infant temperament, and usually appears with respect to only one parent. At six, former D infants are often found to be role-inverting (D-Controlling) towards the parent, while drawings and separation-related narratives (D-Fearful) suggest continuing states of fear and disorganization. In adults, marked lapses in reasoning and discourse surrounding the discussion of loss or abuse during the Adult Attachment Interview (AAI) causes a transcript to be assigned to Unresolved/disorganized (U/d) adult attachment status, which predicts infant D attachment. Bowlby's theory is extended, with the proposal that certain forms of frightening parental behavior will arouse contradictory biologically channeled propensities to approach and to take flight from the parent. Maltreated infants are therefore highly likely to be disorganized. Also identified are subtler forms of frightening parental behavior (including dissociative behavior and anomalous forms of frightened behavior) that appear to lead to infant disorganization. This suggests that infant D attachment may at times represent a second-generation effect of the parent's own continuing unresolved responses to trauma. Infant D attachment predicts disruptive/aggressive and dissociative disorders in childhood and adolescence, while U/d adult attachment appears frequently in psychiatric and criminal populations. Clinical implications are discussed.

This presentation is intended to provide a descriptive account of the behavior, language, and representational processes that identify disorganized attachment status in infants, children, and adults

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(see **Main 2000** [this volume] for the necessary background to this paper).¹ During infancy, *disorganized/disoriented (Group D)* attachment status is identified by the occurrence of certain anomalous behaviors observed during the Ainsworth strange situation procedure (**Ainsworth et al. 1978**). Used by Ainsworth and Eichberg as early as 1991, the D category is now considered the fourth major category of infant strange situation response. Disorganized infant attachment has been found to have distinct and unfavorable sequelae in middle childhood, and a parallel form of disorganization (*Unresolved/disorganized, or U/d*) has also been observed in anomalous responses to queries regarding loss or abuse experiences during the Adult Attachment Interview (**George, Kaplan, and Main 1984, 1986, 1996**). Although it has been important to acquaint clinicians with the organized categories of insecurity (**Main 2000**; this volume), studies in attachment are presently indicating that it is *disorganized* individuals who are at the greatest risk for psychopathology.

The identification, delineation, and description of disorganized/disoriented attachment originated in observations of infant strange situation response. Very briefly, by the early 1980s a number of researchers working with maltreatment samples began to report difficulties in assigning many maltreated infants to the three strange situation categories of behavior that were then available (see **Hesse 1999b** and **Main and Solomon 1990** for review). At the same time, **Main and Weston (1981)** found that even in a large middle-class Bay Area sample, thirteen percent of infants failed to fit Ainsworth's guidelines for placement in the organized (that is, *secure, avoidant, and resistant/ambivalent*) categories. Main and Weston noted further that these "unclassifiable" infants were particularly likely to exhibit what they called "conflict"

¹ To conserve space, this paper and its companion (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. This paper is dedicated to the memory of Alvin Goren (1927-1996), who first introduced the authors to the work of Winnicott. The authors wish to thank the American Psychoanalytic Foundation, the Irving B. Harris Foundation of Chicago, and Kohler-Stiftung of Munich for their assistance and funding.

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behaviors in a stressful setting.² Later, Main and Solomon (1990) reported that unclassifiable infants exhibited a diverse array of inexplicable, odd, disorganized, disoriented, or overtly conflicted behaviors in the parent's presence. One unclassifiable infant, for example, cried loudly while attempting to gain her mother's lap, then suddenly fell silent and stopped moving for several seconds. Others were observed: rocking on hands and knees following an abortive approach; moving *away* from the parent to the wall when apparently frightened by the stranger; screaming by the door upon separation from the parent and then moving silently away upon reunion; raising hand to mouth in an apprehensive gesture immediately upon seeing the parent; and, while in an apparently good mood, swiping at the parent's face with a trancelike expression.

The most striking theme running through these behaviors was *disorganization*, or an observed contradiction in movement pattern. For example, here is the immediate response to reunion observed in one infant whose strange situation behavior was otherwise very secure:

Creeping rapidly forward to father as though to greet him at the doorway, the infant suddenly stops and turns her head 90 degrees to the side. Gazing blankly at the wall with face expressionless and eyes half closed, she slaps her hand on the floor three times. These gestures appear aggressive, yet they have a ritualistic quality. The baby then looks forward again, smiles, and resumes her approach to her father, seeking to be picked up [Main and Morgan 1996, pp. 108-109].

The term *disorientation* was added to describe behavior which, while not overtly disorganized, nonetheless indicated a lack of orientation to the present environment, as exemplified here:

Upon reunion, a mother picks up her very active son, and sits down with him on her lap. He sits still and closes his eyes. His mother calls his name, but he does not stir. Still calling his name, she bounces him on her knee, and gently shakes him, but he remains limp and still. After several seconds he opens his eyes, slides off her lap, and darts across the room to retrieve a toy [Main and Morgan 1996, p. 124].

² It remains the case that 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. However, rather than focusing upon pervasive or global disorganization in infant, child, or adult behavior, this paper centers upon brief *interruptions* of organization in behavior or language.

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While by definition it is impossible to compile an exhaustive list of anomalous behaviors, seven repeated themes have been delineated and presented, together with behavioral examples (Main and Solomon 1990): (1) Sequential display of contradictory behavior patterns; (2) Simultaneous display of contradictory behavior patterns; (3) Undirected, misdirected, incomplete and interrupted movements and expressions; (4) Stereotypies, asymmetrical movements, mistimed movements, and anomalous postures; (5) Freezing, stilling, and slowed movements and expressions; (6) Direct indices of apprehension regarding the parent; and (7) Direct indices of disorganization, disorientation, and confusion. Manifestations of disorganization sufficient for assignment to the D category are often brief, not infrequently consisting of

just one episode lasting ten to thirty seconds. Therefore, whenever the D category is assigned, a best-fitting alternate secondary placement is added (e.g., D/A or D/B, or D/CC for *Cannot Classify/unclassifiable*). Main and Solomon also constructed a nine-point scale identifying degree or intensity of disorganization. Figure 1 provides illustrations drawn from videotape of actual children of several disorganized responses to the first seconds of reunion in a low-risk sample.

Disorganized behavior has been found to be associated with a variety of constitutional and experiential origins. It can, for example, result from neurological impairment or pharmacological intervention, and may appear in conjunction with extended experiences of isolation. Additionally—particularly in toddlers—D behavior can be seen in response to experimentally induced conflicting signals, experimentally induced situations of inescapable shame, and major separations (see **Heinicke and Westheimer 1966**; **Hesse 1999b**; **Solomon and George 1999**). In a meta-analytic overview of thirteen studies of neurologically normal infants, however, no overall relation between difficult temperament or even severe health problems and D attachment status was found. Moreover—in contrast to what we would anticipate if disorganization were primarily a product of constitutional factors—an overview of three further low-risk samples³ showed no significant tendency for infants disorganized with one parent to be

³ These three samples included our own Bay Area sample of 151 infants seen in the strange situation with both parents. There was no significant relation ($r = .08$, n.s.) between D attachment status assigned to infants seen with mother and with father.

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Figure 1. Disorganized Responses to Reunion. Drawings from videotape by Tom Rigney (Greenberg, Cicchetti, and Cummings 1990, p. 145).



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disorganized with the other (**van IJzendoorn, Schuengel, and Bakermans-Kranenburg 1999**).⁴

Because of increasing evidence pointing to the clinical import of disorganized attachment, it has become critical to turn close attention to experiential aspects within the infant's history. Following Bowlby's reasoning regarding the functioning of the attachment behavioral system, we suggest that disorganized/disoriented behavior is expectable *whenever an infant is markedly frightened by its primary haven(s) of safety, i.e., the attachment figure(s)*. If so, then disorganized behavior should of course occur when an infant is maltreated by the parent, and studies conducted by V. Carlson, Cicchetti and colleagues (**Carlson et al. 1989**), as well as by **Lyons-Ruth (1996)**, have indicated that almost eighty percent of infants in maltreatment samples are disorganized.

The proportion of disorganized infants in *low-risk* samples is, however, also disturbingly high, averaging fifteen percent, but ranging to above thirty percent (e.g., in a middle-class sample studied by **Ainsworth and Eichberg [1991]**). Although a subset of these infants will have been maltreated, it is

likely that other factors are involved as well. Intriguingly, about equal percentages of marked lapses in the monitoring of reasoning or discourse during the discussion of loss or abuse within the AAI have also been reported in low-risk populations. These lapses lead to placement in the Unresolved/disorganized AAI category, which has repeatedly been found predictive of infant D attachment status.⁵ We have proposed that such conversational/linguistic slips may be attributable to unintegrated or partially dissociated fear aroused by the discussion of these interview topics, and that anomalous forms of threatening, dissociative, and fearful behavior may occur at times in (otherwise “normal”) parents. We expect that parental behaviors of these kinds will be frightening to the infant (**Hesse and Main 1999**). If this is the case, then disorganization may appear not only as a

4 As this paper goes to press, researchers working with ninety infants in a low-risk Hungarian sample have reported an association between infant disorganized attachment status and a gene polymorphism for the dopamine D4 receptor (DRD4) 7-repeat allele (approximately one-third of infants with this allele were disorganized, and a majority of disorganized infants had the allele). However, given the lack of association to “temperamental” factors reported by most investigators (excepting **Spangler and Grossmann 1999**), replication studies are needed, as the authors urge (Lakatos et al. in press).

5 To our knowledge, studies relating parental AAI status to infant attachment status have yet to be completed for maltreatment samples.

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result of an infant's directly traumatic experience of maltreatment, but also as a *second-generation effect* of more subtle behaviors resulting from the parent's own frightened or frightening ideation surrounding experiences of trauma.

In the remainder of this presentation we first discuss an extension of Bowlby's ethological and evolutionary paradigm that resulted from our consideration of the paradoxical situation created when an attached infant is frightened by its “haven of safety.” Second, we provide an account of a strange situation conducted with a highly disorganized infant who was unclassifiable within Ainsworth's tripartite system. We additionally outline the many unfavorable sequelae of early D attachment that have been noted from middle childhood to adolescence. In the third section the nature of the lapses in reasoning and discourse that cause an AAI transcript to be assigned to Unresolved/disorganized (U/d) adult attachment status are described. We discuss the linkages between U/d parental attachment and infant D attachment, proposing that U/d parents frequently exhibit frightened/frightening behavior in the infant's presence, leading to infant D attachment. We note as well that U/d adult attachment status is associated with criminality, violence, and psychological difficulties (such as borderline personality disorder). In concluding, we reflect upon the relevance of disorganized infant, child, and adult attachment for clinicians.

Attachment: Extensions of Its Evolutionary and Biological Foundations

As a prelude to our descriptive account of disorganized attachment, we reiterate an idea central to Bowlby's earliest theorizing: when alarmed, human infants, children, and even adults possess a strong propensity to gain contact with protective others. This phenomenon is of course most readily observed in the developing child.⁶

This point acquires special import when we consider a cross-mammalian difference recognized by Bowlby (**1969**, among others):

6 This response to alarm can be seen in intimate adult relationships as well, and there is little doubt that, as an emotional and psychological phenomenon, seeking proximity to attachment figures under stress forms a central and in some ways a most basic part of human experience across the lifetime (**Bowlby 1969; Hazan and Shaver 1994; Simpson and Rholes 1994**).

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for many mammalian young, frightening situations lead to a rapid flight to a *place* associated with safety, such as a den or burrow. In contrast, for human and other ground-living nomadic primates it is not a place, but one or more *selected individuals* who provide the primary, or sole, “solution” to conditions that elicit fear. Our peculiar early dependence upon others in situations of fear struck Bowlby as critical, as revealed in a letter to his wife of May 3, 1958: “Most people think of fear as running away from something. But there is another side to it. We run *TO* someone, usually a person It's screamingly obvious, but I believe it to be a new idea, and quite revolutionary” (courtesy of Ursula Bowlby).

Since the human infant has no haven of safety beyond its attachment figure(s), we may take this proposal one step further and address the question of what happens when the attachment figure itself—the person we run “to”—becomes a direct source of alarm. While at first glance an inherent propensity to approach the location of alarm appears irrational, it may be helpful to recall an observation made by Darwin regarding the Galapagos sea lizard, an animal able to move about with ease on both land and sea, but which exhibited the peculiar behavioral feature that, when frightened, it would not enter the water. To further his understanding of this phenomenon, Darwin repeatedly threw one of these lizards into the water. Strikingly, although possessed “of perfect powers of diving and swimming,” the sea lizard invariably returned in a direct line to the spot where its attacker stood. Darwin speculatively solved this conundrum by consideration of the animal's evolutionary history: “Perhaps this singular piece of apparent stupidity may be accounted for by the circumstance, that this reptile has no [natural] enemy whatever on shore, whereas at sea it must often fall a prey to the numerous sharks. Hence, probably, urged by a fixed and hereditary instinct that the shore is its place of safety, whatever the emergency may be, it there takes refuge” (**Darwin 1839**).

Turning our attention now to human phylogeny, we can see that like the sea lizard an infant frightened by its attachment figure has no inherent (i.e., instinctively organized) means for separating the location of its attacker from the location of its haven of safety. Thus, confronted with circumstances unanticipated within its evolutionary history, it should experience strong propensities to approach the place of threat.

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Disorganization and Disorientation in the Strange Situation

Infant Disorganized Attachment Status

In an attempt to bring to life disorganized attachment status as it is seen in infancy, we now provide excerpts from the strange situation behavior of Dorian, an attractive, competent, and linguistically advanced toddler who was extremely disorganized with his mother at fourteen months of age and received the highest rating on our nine-point rating scale. A synopsis of his strange situation behavior follows. D behaviors are italicized.

Dorian's mother has a pleasant and open expression. At moments, however, she seems sad, and sometimes she smiles in a faintly dazed way. Guided into the room by a research assistant with whom she and Dorian have spent only a few moments, she sits in the chair which the assistant points out. However, as soon as the assistant turns to leave Dorian pursues her, crying and protesting like an infant distressed at its own mother's leave-taking. Dorian's mother claps her hands to reorient him, calling “Here! Here! Over here!” During the remainder of the opening episode, Dorian wanders through the room, never fully settling his attention either on a toy or on his mother.

At the stranger's entrance, Dorian is apprehensive, but instead of going to his mother, he backs against the wall behind her chair. On separation, he at first plays willingly with the stranger, then cries.

At reunion, Dorian approaches his mother crying, with arms outstretched, but then attempts to move past her out the door. She pulls him back, but he remains unable to settle throughout the episode. Strikingly, however, he does not approach his mother while crying. Instead he backs further and further away, turning in circles, until he is in the far corner of the room. With his back to the wall he faces his mother briefly, then continues crying and turning in circles.

On the second separation, the stranger cannot fully comfort Dorian. When his mother returns, he rushes to her and clings to her legs like a secure infant, but then again begins simultaneously crying and backing away from his mother, and not until he is in the far corner of the room does he turn to look at her. Mother repeats in a somewhat high voice, "Are you angry? Are you angry because I left?"

Once the strange situation has ended, the person who played the role of the "stranger" returns to the room to let the mother know that the procedure is over. Dorian has been playing with a toy, but on seeing the stranger he collapses prone on the floor, turning his face to the side. His eyes are open but blank and staring, and he stays huddled and stilled in this anomalous posture for thirty seconds.

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The reader will note that, in addition to the disorganization he displays, Dorian's behavior is unclassifiable by the terms of Ainsworth's original tripartite system, having elements of all three of the original (organized) strange situation categories. In addition, in the first moments of the procedure Dorian, apparently highly disoriented, rushed crying after an unfamiliar departing adult. Thereafter, unlike an insecure "organized" baby, he wandered about unable to focus his attention *either* upon his mother or upon the environment. Note as well that Dorian was unlike an avoidant infant in that *he could not avoid expressing distress*, perhaps because he was simply too frightened. However, both secure and resistant/ambivalent infants directly approach their mothers when distressed. Dorian, in startling contrast here as well, *backed away from his mother* once he began to cry, and turned in circles. Finally, when fear appeared to overcome him, he fell prone.

Dorian's response to the strange situation illustrates not only the concept of "fright without solution," but also the collapse (or absence) of an attentional and behavioral strategy for coping with stress (Hesse and Main 1999). Because the absence of behavioral strategies for dealing with stressful situations is associated with heightened adreno-cortisol output, Spangler and Grossmann (1993, 1999) compared adreno-cortisol output in disorganized vs. organized infants. Although prior to the strange situation cortisol levels were similar for organized and disorganized infants, they found, as expected, significantly increased output following the strange situation specific to D infants. These findings have since been replicated.

Dorian is more globally disorganized than most infants in low-risk samples; less marked examples of disorganized behavior can easily be missed, and require both experience and skill to score.⁷

Behavioral and Representational Sequelae

Researchers are now following individuals who were disorganized as infants through middle childhood and late adolescence. In Main and

⁷ Training in the coding of the *disorganized/disoriented* classification and scoring system (as well as in the *organized* categories of infant attachment) is provided yearly by Elizabeth Carlson and Alan Sroufe at the Institute of Child Development at the University of Minnesota. Carlson also holds institutes outside of Minnesota (he can be reached by e-mail at: Carls032@maroon.tc.umn.edu). Training institutes are also occasionally provided by Main and Hesse, and by Marinus van IJzendoorn. A thirty-two-case reliability check is available from Carlson and Sroufe at Minnesota, and is required for certification in infant D coding.

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Cassidy's (1988) initial Bay Area study of six-year-olds reunited with their parents following a one-hour separation, the great majority of former D infants exhibited role-inverting (or *D-Controlling*) behavior. Some D-Controlling children ordered the parent about in a punitive manner ("Sit down and shut up, and keep your eyes closed! I said, keep them closed!"), while others were excessively and inappropriately solicitous (e.g., "Are you tired, Mommy? Would you like to sit down and I'll bring you some [pretend] tea?").⁸ This finding has been replicated in three independent laboratories (**van Ijzendoorn et al. 1999**).

In Strage's analysis of transcripts of reunion conversations in the Bay Area sample (to our knowledge, this remains the only study of its kind) previously disorganized children and their parents were ultimately termed *D-Dysfluent*; their transcripts were not infrequently marked, for example, by stammering, hesitations, and false starts (**Strage and Main 1985**). Additionally, whereas parents usually "scaffold" a child's conversation, making it more complete and understandable, in D dyads the child often provided scaffolding:

Dorian: Gosh, you were, uh, gone a long time, you look ... Come sit down, Mom. Where—where were you?

Mother: I was with ... with ... I've forgotten her name ...

Dorian: Rachel, you were with Rachel ...

Mother: ... right, Rachel, and she was asking me a lot of questions. And you're with ...

Dorian: ... Emma. You remember, this is Emma, and she showed me this sandbox.

Mother: ... oh, is that it in the corner? Oh, it's really cute, Dor, you must have had fun.

Dorian: No, the sandbox is here. That's the toy-box. Want to see it?

Mother: No, uh, no. We're going to—I think they want us to leave now.

Dorian: Well, we—we can't leave yet, Mom. You have to sign the forms.

As in the Main and Cassidy procedure (1988), where disorganized infants were found role-inverting and controlling at six, in this conversation

⁸ Some six-year-olds who had been disorganized in infancy engaged in "clowning," in an apparent attempt to cheer and entertain the parent (*D-Controlling/Overbright*). A few treated the parent almost as a romantic partner, some showed unclassifiable combinations of categories, and some had become organized in their behavior.

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Dorian seems to be organizing his mother's discourse and attention. These findings might make it appear that early behavioral disorganization had disappeared. At the level of *mental representation*, however, clear indices of disorganization, disorientation, and fright remained (**Main, Kaplan, and Cassidy 1985**). This was true whether we examined separation-related narratives (a replicated finding), family drawings (only partially replicated) or responses to presentation of a family photograph (an assessment apparently particular to our sample).

In **Kaplan's (1987)** study, six-year-old children who had been seen with the mother in the strange situation at age one were asked to describe how a child might *feel*, and what a child might *do*, in situations represented by a series of six pictured parent-child separations. Overall, Kaplan described the previously disorganized six-year-olds as seeming "inexplicably afraid and unable to do anything about it" (**Kaplan 1987**, p. 109). These children were termed *D-Fearful*, and three kinds of responses led to placement in the D-Fearful category:

(a) *Direct descriptions of fearful events*. These included markedly catastrophic fantasies, such as suggestions that family members might come to great bodily harm, or that the parents or child would die. One child said:

She's afraid. [Why is she afraid?] Her dad might die and then she'll be by herself. [Why is she afraid of that?] Because her mom died and if her mom died, she thinks that her dad might die [pp. 109-110].

Another described what the pictured child would likely do as follows:

Probably gonna lock himself up. [Lock himself up?] Yeah, probably in his closet. [Then what will he do?] Probably kill himself [pp. 109-111].

Other investigators have also noted the chaotic, flooded responses to doll-play separations observed in some disorganized children, as exemplified here in a D-Controlling six-year-old described by Solomon and George:

And see, and then, you know what happens? Their whole house blows up. See ... they get destroyed and not even their bones are left. Nobody can even get their bones. Look. I'm jumping on a rock. This rock feels rocky And then the rocks tumbled down and smashed everyone. And they all died [1999, p. 17].

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(b) *Voicelessness and resistance.* Children were assigned to this subcategory when they fell silent, began whispering, refused the task, or became too distressed to complete it (these responses were also observed in D-Controlling children by **Solomon, George, and DeJong 1995**).

(c) *Disorganization in language or behavior.* Some children responded to the pictured parent-child separations by using nonsense language (“yes-no-yes-no-yes-no”), making illogical statements, or becoming markedly behaviorally disorganized. For example, one child responded:

Happy. [What's he happy about?] 'cause he likes his grandfather coming. (Child jumps on back of stuffed animal in the playroom and hits it.) Bad lion! (Hits it more.) Bad lion! [Kaplan 1987, pp. 110-111].

The association between D-Fearful responses and early disorganized attachment led Kaplan to speculate that because many D infants had parents who still suffered from frightening ideation with respect to their own loss experiences, queries regarding parent-child separations might have had a particularly disorganizing effect on their offspring. In essence, Kaplan was proposing that the children's fearful fantasies, silences, and disorganized language or behavior in response to queries regarding parent-child separations may have resulted from repeated interactions with a parent who was still fearful and confused regarding an important loss. It should be underscored that neither of the children quoted above who responded to pictures of parent-child separations with fantasies of catastrophic loss had experienced a loss.⁹

Additionally, Kaplan and Main (**1984, 1986**) found that formerly disorganized six-year-olds were likely to include bizarre or frightening elements in their family drawings—for example, whole figures might be scratched out, body parts might float freely in the air, or dark clouds might descend towards the family. One child included skeletons in the picture. In a few cases, the family drawings of children who had been disorganized as infants were excessively bright or cheery:

⁹ The association between infant disorganized attachment status and Kaplan's D-Fearful responses to separation pictures at ages six or seven has been replicated in Berlin (see **Jacobsen, Edelstein, and Hofmann 1994**). In addition, these researchers found that D-Fearful seven-year-olds in a large Icelandic sample had negative feelings about themselves, and marked difficulties with verbally administered reasoning tasks in adolescence.

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for example, an entire family portrayed standing upon a row of hearts, with a small radiant sun placed just above the head of the parent who had experienced a major loss. Children D with mother in infancy also had anomalous responses to presentation of the family photograph: acting solicitous toward the photograph, for instance, or collapsing forward in a depressed posture (for further examples, see **Main, Kaplan, and Cassidy 1985**).¹⁰

We have now followed forty-four subjects within our Bay Area sample to nineteen years of age, when each was administered the AAI in conjunction with a variety of other assessments, including a self-visualization task designed by Main. Among the twelve adolescents disorganized with their mothers in infancy, not one was judged secure by a blind coder who had no familiarity with the sample. A majority of adolescents secure with the mother in infancy were found secure-autonomous in the Adult Attachment Interview, as were a minority of adolescents who had been judged avoidant or resistant/ambivalent. However, again, *not one* of the twelve previously disorganized infants was judged secure-autonomous at age nineteen, and this finding is particularly striking because a majority of our disorganized infants had alternately been coded as secure. In addition, only two of the forty-four adolescents were coded as Unresolved/disorganized: both had been disorganized with the mother during infancy. Finally, asked by surprise to visualize themselves while being videotaped (see **Main 1999**), several adolescents disorganized with mother during infancy again exhibited “disorganized” behaviors such as startle responses, upward eye-rolls, confusion, and asymmetrical mouth movements indicative of disgust.

Given the findings of the Bay Area and other studies described above, many follow-up investigations of early disorganized attachment have focused on the child's or adolescent's vulnerability to psychopathology. Lyons-Ruth and colleagues, for example, have found that disruptive and aggressive behavior in middle childhood is linked to early disorganization with the mother (see **Lyons-Ruth 1996**). Lyons-Ruth's finding has several replications (see **van Ijzendoorn, Schuengel, and Bakermans-Kranenburg 1999**). In addition, Liotti had proposed

10 As in the case of children placed in the insecure-avoidant category during infancy, we again observe an intriguing reversal from reactions observed in secure children: in contrast to previously secure children, responses to the task of making a “real” drawing of the family become disturbingly symbolic, while what is clearly only a simple representation of the family (a photograph) is treated as though it is disturbingly real.

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that disorganized infants might be more vulnerable than others to dissociative disorders when exposed to later trauma (see **Liotti 1999** for overview). This idea was corroborated in a sixteen-year follow-up study of the large high-risk Minnesota poverty sample, where scores for disorganized behavior with the mother in infancy were significantly predictive of dissociative behavior and experiences from middle childhood to seventeen years of age (**Carlson 1998**). However, *self-reported* dissociative experiences in adolescence were not predicted unless the individual had *both* been disorganized in infancy *and* had undergone substantial intervening trauma. (This study by the Minnesota group is reviewed in **Weinfeld et al. [1999]**). Relations to many other specific disorders have yet to be examined, although to date disorganized attachment has been found unrelated to depression (**van Ijzendoorn, Schuengel, and Bakermans-Kranenburg 1999**).

The Parents of Disorganized Infants: Slips in Discourse and Frightening Behavior

The U/d category of the Adult Attachment Interview¹¹ is assigned to speakers who exhibit *disorganization or disorientation in discourse or reasoning* while attempting to discuss potentially traumatic events. These “slippages,” which we call *lapses in monitoring*, can appear with respect to either *reasoning* or *discourse*,^{12,13} and have consistently been found to predict infant disorganized attachment (**van Ijzendoorn 1995**). This relation has been confirmed in at least ten additional samples, including four in which the AAI was administered to expectant parents *prior* to the birth of their first child (see **Hesse and Main 1999** for overview).

We now provide illustrations of the kinds of statements that lead to placement in the U/d adult attachment category. The focus here is on loss experiences, although lapses occurring during discussions of abuse or other trauma follow the same general coding principles. The AAI

11 Information regarding two-week institutes in the analysis of the AAI is available by writing to the authors at the Department of Psychology, University of California at Berkeley, Berkeley, CA 94720 (or by fax to 510-642-5293).
12 Reported lapses in the monitoring of behavior are also assigned to the U/d attachment category, but are very rare.
13 Lapses sufficient for placement in the unresolved category are ordinarily brief, and most often appear in conjunction with interviews that are otherwise readily codable as secure, dismissing, or preoccupied (some, as we have said, are alternatively coded as Cannot Classify).

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protocol instructs the interviewer to undertake a lengthy series of inquiries and probes regarding all important losses.¹⁴ Surprisingly, anomalous ideation surrounding loss experiences is not infrequently found in otherwise coherent and high-functioning individuals. Here as in other cases we suspect that these insistent probes may well elicit longstanding ideas not previously subjected to conscious examination via discussion.

Lapses in reasoning. Speakers are said to exhibit a lapse in *reasoning* when they make statements that are either incompatible with one another (as, for example, when a person is described as both dead and alive in the physical sense¹⁵), or are inconsonant with our usual understanding of space-time relations and causality. For example, one parent remarked: “In a way it was better when she died *because she could get on with being dead* and I could get on with raising my family.” This statement implies that death is an activity that can be “gotten on with.” Another parent had stopped giving gifts, because twice the recipients had died.

A particularly dramatic example of a lapse in reasoning in a high-functioning individual was provided by **Ainsworth and Eichberg (1991)**. Immediately upon being queried regarding loss, this mother responded “Yes, there was a little man ...” and then began to cry. The person lost was an elderly workman who had been employed briefly by her parents when she was eight years old. Jokingly, he had asked her to marry him when she grew up, and she had replied “No, you'd be dead.” Not long after this exchange, the man had died unexpectedly of a brain hemorrhage. This mother went on to tell the interviewer that it was she who had killed him—“with one sentence” (p. 175)—a remarkable statement that was left unmonitored. As expected, her infant's strange situation behavior was highly disorganized.

Note that while this loss would not in itself normally have been considered traumatic, the (childhood) ideation that remained associated with it (having killed someone with a thought) was very frightening. Relatedly, Ainsworth and Eichberg reported that in their sample of fifty mothers, those who had simply *experienced* a loss were no more

14 To avoid distress for participants, queries about abuse are brief, with few follow-up probes.

15 References to the deceased as being still alive in ametaphysical or religious sense are not considered Unresolved/disorganized. Note as well that for such speakers (“I like to believe that she is in heaven”) beliefs of this kind may be comforting rather than frightening.

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likely than others to have disorganized infants. However, *all eight* mothers whose lapses in reasoning or discourse identified them as U/d with respect to loss had infants judged disorganized.

Lapses in discourse. Marked lapses in *discourse* during the discussion of loss or abuse experiences also lead to placement in the U/d adult attachment category. For example, speakers are classified U/d when they exhibit an abrupt and distinct change in what is called “discourse register.” This can be seen, for example, in a move to extreme attention to detail:

We went to the hospital in, let's see, I think it was the grey Buick, and I sat in the back to the right of my mother, I was wearing jeans and polo shirt, well not jeans but, you know, khakis, and we turned first down West Street and then, there was kind of a lot of traffic, so we took ...

In other instances the speaker may shift abruptly into eulogistic (“funereal”) speech:

She was young, she was lovely, and she was torn from us by that most dreaded of diseases, tuberculosis. And then, I remember, time and time again, the sounds of the weeping, the smell of the flowers, the mother torn from where she lay weeping upon her daughter's coffin ...

Speech of the type just described suggested to us that in some cases the interviewer's questions regarding a potentially traumatic event may have sparked or induced a momentary but dramatic alteration in the speaker's mental state. Indeed, many of the more marked slippages, such as those just quoted, imply that the speaker may be experiencing high levels of absorption involving events that have as yet failed to undergo normal conscious processing. In other cases, such as the man killed "with one sentence," a secondary (ordinarily dissociated) ideational system incompatible with more predominantly held beliefs or memories may abruptly intrude into the speaker's thoughts (Hesse 1999b; Hesse and Main 1999).

It appears reasonable to assume, then, that *similar state-shifts could occur in such individuals in the home as well as in the interview setting*, triggered by spontaneous intrusions from alarming memories or ideation and/or by something in the environment idiosyncratically associated with those ideas or memories. Thus, we have proposed that U/d parents may at times become peculiarly frightened in response to aspects of the environment that are unconsciously associated with a

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traumatic event. Having entered such a state, the parent might exhibit anomalous forms of threatening, frightened, or overtly dissociated behavior, and the apparent inexplicability of such behaviors may, like overtly agonistic threats or direct maltreatment, be alarming to the infant (see Hesse and Main 1999).

This hypothesis of course requires empirical testing, and that need led to the development of a coding system for identifying anomalous forms of frightened, frightening, or dissociative parental behavior, hereafter termed *FR behavior* (see Hesse 1999a for coding system). Below is a brief list of some examples of the kinds of FR behavior which we and other researchers have observed in the offspring of Unresolved/disorganized parents, and/or in the parents of disorganized infants. It should be noted that our system focuses only upon *anomalous* forms of frightened and threatening behavior. Exhibitions of fear regarding, for example, the approach of a large dog, or threats of "normal" spanking are not considered likely to be disorganizing, but space limits prohibit discussion of this topic here (see Hesse and Main 1999).

Anomalous Forms of Threatening Parental Behavior

Some parents exhibit serious, as opposed to playful, movements resembling those of a hunt or pursuit sequence in interaction with their infants: predatory stalking, for example. In a study conducted at Leiden, one U/d mother was observed suddenly crawling silent and catlike towards her infant. Then, simulating "mauling" behavior, she turned the infant over with her fingers extended like claws. Other parents engaged in hissing, deep threatening growls, teeth-baring, and even one-sided lip-raising (in essence, one-sided canine exposure, a well-known primate threat gesture). Again, none these expressions appeared to be playful. Most seemed to arise out of nowhere, and then disappear.

Anomalous Forms of Frightened Parental Behavior

Our first informal descriptions of FR behaviors included one parent of a disorganized infant who responded with an immediate, apparently frightened intake of breath as the toddler began pushing a toy car across the floor, and then cried out, "Uh-oh! Gonna have an *accident!* Everybody's gonna get *killed!*!" We also noted a parent backing away from the infant during a separation episode of the strange situation, while stammering in an unusual and frightened voice: "D-don't follow

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me, d-don't." Another mother jerked her head away with a fear grimace and her eyes wide, when the infant reached out to pat her face in a calm and exploratory manner (see Hesse and Main 1999). Other parents

have seemed to try to escape the infant as if the infant were a pursuing and potentially dangerous animal. Each of these responses suggests the presence of fear *of the offspring* in traumatized parents. However, perhaps this is not as unlikely an outcome as might be imagined, especially because, as **Solomon and George (1999)** have found, some mothers describe their disorganized children as having supernatural powers and special connections with deceased persons.

Dissociated Behavior

The phenomena of dissociation have fascinated clinicians and academicians since the early writings of **Breuer and Freud (1893-1895)**. As most readers are aware, the extremes of these phenomena, such as dissociative identity disorder and fugue states, have frequently been associated with a history of trauma, and hence inherently with fear. One parental behavior directly suggestive of entrance into a dissociative state consists in the “freezing” of all movement, accompanied by half-closed, unblinking eyes. In such instances the parent has seemed completely unresponsive to, or apparently unaware of, the immediate external environment, including the movements and vocalizations of the infant.

Unusual intonations have also been observed (see **Hesse and Main 1999**); some parents greet their infants with a “haunted” tone quality (as when “Hi ... iiiii” is spoken while pulling in on the diaphragm, the result of simultaneous voicing and devoicing). Another unusual intonation was observed in a mother who had suffered abuse by her father; she greeted her disorganized male infant with a sudden midsentence drop to a deep “male” pitch. Like the devoiced “Hi ... iiiii,” this vocalization struck listeners as distinctly frightening, “disconnected” from the mother, and suggestive of “intrusion” from a second voice. Another mother of a D infant was observed whispering instructions to herself in a “haunted” voice just prior to speaking the same words in a normal conversational tone (**Abrams 2000**). Each one of these “haunted” vocalizations was chilling and/or frightening when played for listeners, and suggested “possession” to one. Such sounds may therefore also be frightening to infants, and we have noted in three separate instances that when the parent used devoiced

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(“haunted”) tones to address the infant, its behavior immediately became disorganized.

The relations between maternal Unresolved/disorganized (U/d) attachment status and frightened/frightening (FR) behavior has now been investigated in two large studies focusing upon mother-infant interaction in the home. The first, conducted at Leiden University by Schuengel, **van Ijzendoorn, and Bakermans-Kranenburg (1999)**, involved videotaping eighty-five mothers and infants across the course of two home visits. An association between U/d attachment and maternal FR behavior was found, but only when the mother's alternative or “best-fitting” AAI classification was insecure. This suggested the possibility of a protective factor operating to inhibit the expression of FR behavior in unresolved mothers with an underlying secure classification (see **Hesse 1999b** for review of two related studies supporting the proposition that an underlying secure classification may act as a protective factor in the face of unresolved trauma). In addition, these researchers found that FR behavior in the home was, as anticipated, significantly predictive of disorganized attachment in the strange situation.

In Austin, Texas, the AAI was administered to 113 expectant mothers several months before the infant was born (**Jacobvitz, Hazen, and Riggs 1997**). When the infants were eight months old, the mothers were videotaped in the home while feeding them, playing with them, and changing their clothing. In this study, unresolved (U/d) mothers were found far more likely to exhibit FR behaviors than mothers who were not unresolved, even when the underlying classification was secure (see **Lyons-Ruth and Jacobvitz 1999** for discussion).

Several other investigators have examined the relation between FR and infant disorganization. In a study of members of the Dogan ethnic group conducted in Mali, True and her colleagues found that a simplified assessment of FR behavior, as recorded in the field or hut setting, was impressively associated with disorganized attachment in the strange situation (**True, Pisani, and Oumar 2000**). A study of frightened/frightening behavior and confusing affect communications exhibited *within* the strange situation has also revealed relations to infant disorganization (see **Lyons-Ruth and Jacobvitz 1999**). Finally, in an investigation of seventy-five Bay Area dyads, **Abrams (2000)** reported a very strong association between

FR (especially dissociative) behavior and infant disorganization for both infant-mother and infant-father dyads.

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These studies led us to conclude that mental and emotional difficulties may later arise in offspring whose parents are in no way directly maltreating and may even in some cases ordinarily be sensitive to infant signals and communications (Hesse and Main 1999). Indeed, only an insubstantial relation has been found between infant D attachment status and traditional assessments of maternal sensitivity (van Ijzendoorn et al. 1999). Considered as a whole, then, impressive evidence is accumulating for the hypothesis that previously unrecognized forms of threatening, frightened, and dissociated parental behavior may mediate the relation between unresolved (adult) and disorganized (infant) attachment status in low-risk samples.

Summary and Conclusions

This presentation has emphasized the immediacy of the tie between maintenance of proximity to the attachment figure and infant primate survival. This fact leads inevitably to the conclusion that attachment must be closely tied to fear. Although Bowlby stressed the close relation between attachment and fear in his early writing, it appears that lately this point has been largely overlooked. Considered in conjunction with constitutional factors and/or later intervening trauma, the relation between disorganization and repeated experiences of fright without solution may account for some of the emerging findings linking early disorganized attachment status and psychopathology (Hesse and Main 1999). Until very recently, however, subtly frightening parental behavior had not been formally (i.e., systematically) observed. Ainsworth, for example, did not note the presence of anomalous FR behaviors in her original observations of infant-mother interactions in Kampala and Baltimore, although at times these behaviors must certainly have been present.

Ainsworth's original studies demonstrated how a sensitively responsive attachment figure is experienced as a source of comfort in times of fright or distress. Main has suggested in addition that when parents are insensitive but *not* directly frightening, the infant can develop "conditional strategies" for coping with the limitations or restrictions imposed by parental behavior. Within the strange situation in particular, the rejected infant appears to attempt to ignore signals of minor danger, successfully maintaining self-organization through persistent attention to inanimate objects. As if in mirror image, the infant

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whose mother is unpredictably responsive exaggerates reactions to even minor "dangers" (such as simple novelty), being almost exclusively preoccupied with (and thus restricting attention to) the attachment figure throughout the procedure (see also Main 1995).

In the case of each of the three traditional or organized attachment classifications, then, even the rejected or inconsistently treated infant has a behavioral and attentional strategy available for retaining organization when confronted with moderate levels of stress. This is not, unfortunately, true for the infant whose attachment figure has frequently been the source of its alarm. For these developing children, potentially stressful situations can become overwhelming. This, we have proposed, is the result of their having been repeatedly confronted with a biologically channeled paradox: the simultaneous needs to approach, and take flight from, the parent.¹⁶ Since the arousal of either one of these conflicting tendencies no doubt heightens the other, a positive feedback loop will almost inevitably be created, leading (until attention can somehow be refocused¹⁷) to disruptions in the organization of behavior.

The best replicated sequelae to disorganization in infancy during middle childhood include role-inverting behavior toward the parent (e.g., punitive and inappropriately caregiving/solicitous behavior), and fearful responses to presentation of "imagined" situations involving parent-child separation (e.g., catastrophic fantasies). In late adolescence, early disorganized attachment status has been linked to

disruptive/aggressive disorders, and to increased vulnerability to dissociation (Carlson 1998). Finally, although it is not possible to review these findings here, U/d adult attachment status is found more sharply associated than the organized forms of adult insecurity with criminality, psychological distress, and violence (see a meta-analytic overview conducted by van Ijzendoorn and Bakermans-Kranenburg 1996; see also Hesse 1999a for review and discussion).

Recently we have proposed that anxiety disorders may also be a sequel to early states of disorganization, especially in cases where the infant's strange situation behavior suggests an unfocused, defenseless

16 Such experiences may arouse propensities to attack as well (see Hesse and Main 1999).

17 To understand more fully the nature of disorganized/disoriented behavior, we will need to understand not only what activates it at any given moment, but also what brings it to termination. To our knowledge, this has yet to be examined, although Lyons-Ruth is currently examining disorganization and fright in the context of maternal "repair" (see Lyons-Ruth and Jacobvitz 1999).

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state of panic and fright. In this context a paper by Winnicott (1974) entitled "Fear of Breakdown" warrants consideration (see Hesse and Main 1999).¹⁸ Winnicott contends that "Fear of breakdown is *the fear of a breakdown that has already been experienced*. It is a fear of [an] original agony" (p. 104; italics Winnicott's). In light of our discussion thus far, it seems plausible that many individuals who fear *future* breakdown may have, in the preverbal period, repeatedly experienced states likenable to breakdown: i.e., during episodes of extreme disorganization. Thus, as Winnicott suggested (but on a more abstract level), an irrational fear of anticipated breakdown in the future could actually be the effect of repeated "breakdowns" in behavior, attention, and affect regulation suffered in the distant past.

This article has been intended to acquaint a clinically oriented readership with the constellations of fantasy, representation, and mental and emotional difficulties systematically associated with disorganized attachment. It may encourage some practicing clinicians to look for disorganized attachment in child or adult patients by means of direct laboratory or interview assessments of the kinds described above. Even when opportunity for such assessment is lacking, however, this introduction may assist clinicians occasionally puzzled by seemingly inexplicable long silences, catastrophic fantasies (including fear of breakdown), or "controlling" (punitive, or else inappropriately solicitous) behavior appearing in their patients. At present—particularly where a patient's parenting appears to have been adequate—these phenomena may seem unconnected with one another or associated primarily with aggression or efforts towards domination. While there is little doubt that these latter factors often play a role in the production of such fantasies or behaviors, the clinician may wish to consider in addition whether the patient might be experiencing fear *of*, or even fear *for*, the clinician or some other important figure. In these cases it would be useful to consider where possible whether one or both of the patient's parents had experienced significant trauma. Intriguingly, several clinicians have recently informed us that they have noted the phenomena we have described here in patients who are the offspring of Holocaust survivors. This suggests that, rather than arising *de novo*, the subjective distress manifest in a patient's fantasies, silences, and/or

18 We thank Diana Diamond and Sydney Blatt for drawing our attention to this paper.

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attempts to control the clinician may at times be rooted in early responses to the "real" experiences of their caregivers.

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