

**WHEN GOOD ENOUGH MOTHERING IS NOT GOOD ENOUGH: A STUDY OF  
MOTHERS' SECURE BASE SCRIPTS, ATYPICAL AND DISRUPTED CAREGIVING  
AND THE TRANSMISSION OF INFANT ATTACHMENT QUALITY**

**by**

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## **DEDICATION**

I dedicate this dissertation to my family of origin. To my parents, Nate and Bernice Plotkin and my brother Shelly who I wish were here to share this accomplishment and who I know would be very proud and to my brother Murray who led the way to the University of Michigan and for that and much more I am very grateful.

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## **Abstract**

The existing attachment literature highlights the important influence of maternal attachment representations on infant attachment quality. A novel type of attachment representation— attachment scripts— that represent mothers' secure base support and their associations to a range of mothers' atypical caregiving behaviors are examined. Mothers' secure base scripts assessed through the Attachment Script Assessment were hypothesized to be inversely correlated with mothers atypical and disrupted caregiving behaviors based on the AMBIANCE measure. Each measure was hypothesized to predict infant attachment quality. Mothers' behavior was also hypothesized to mediate the impact of mothers' secure base scripts on attachment quality. A secondary data analysis was performed using data from 52 mothers and their 12-18 month-olds. As expected maternal secure base support measured by the Attachment Script Assessment significantly predicted infant attachment quality across the 4 infant attachment groups. The AMBIANCE measure predicted infant attachment quality. Mothers' overall level of disrupted communication, affective communication errors, intrusive/negative behavior and role boundary confusion were all associated with infant ambivalent attachment. Mother's intrusive/negative behavior was associated with infant avoidant attachment. Contrary to what was expected, mothers' of disorganized infants exhibited less intrusive/negative behavior and role boundary confusion than mothers of secure, avoidant or ambivalent infants. No correlation was found between mother's secure base scripts and their disrupted caregiving behavior therefore the mediation model was not tested. Areas for further research and implications for social work practice and policy are discussed.

**Keywords:** *Attachment, secure base support, Attachment Script Assessment, AMBIANCE, affective communication, atypical and disrupted caregiving behavior*

## CHAPTER I

### Dissertation Overview and the History of Attachment Theory

#### Dissertation Overview

Traditionally, attachment theory has viewed maternal sensitive and responsive behavior as the vehicle for the transmission of attachment quality from one generation to the next. What has been missing is a clear understanding of the process by which this occurs. In this dissertation I propose and test a particular process. Specifically, I predict that a mother's sense or experience of her relationship with her own mother can be understood through the way she tells certain stories about relationships and that those experiences will be reflected in the way that she engages with her infant. I will be able to test the following elements of this predicted underlying process: maternal attachment representations, maternal behavior, and infant attachment quality. I will detail the novel synthesis of the available literature that forms the basis for this prediction in Chapter II.

More specifically, I will examine a particular type of maternal attachment representation; Maternal Secure Base Scripts—which represent a mother's secure base support—for patterns in their structure, completeness, consistency and accessibility. I will also examine a certain type of maternal behavior; atypical and disrupted maternal caregiving behavior. This is behavior that does not consistently establish a mother as a secure base or safe haven for her infant. Through this examination we may have the opportunity to establish links regarding the mechanisms and causal pathways for the intergenerational transmission of attachment quality that have not previously been evident with the more standard approaches to measuring attachment representations and maternal sensitivity.

The specific elements I will test are the relation between a mother's attachment representation of her secure base support through examining her Secure Base Scripts, her ability to regulate her infant's fear and distress when the infant's attachment system is in a heightened state of arousal—in other words when her infant is upset—through the examination of several atypical and maternal caregiving behaviors and infant attachment quality. To do so I will use state of the art tools including a new method for examining maternal atypical and disrupted caregiving behavior the Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE) (Bronfman, Madigan and Lyons-Ruth, 2011). I will also use a relatively novel narrative methodology for assessing a mother's attachment representations the Attachment Script Assessment (Waters & Rodrigues-Doolabh, 2001). This is the first study to examine the relation between a mother's secure base support using the Attachment Script Assessment and infant disorganized attachment as well as the first to look for associations between a mother's secure base scripts and maternal atypical behavior. This approach may increase our understanding of the cognitive representations that guide a mother's caregiving behavior with her infant as well as provide additional information about specific maternal behaviors and their relation to particular infant attachment patterns in the intergenerational transmission of attachment.

The discussion will begin with an introduction and historical review of the core concepts of attachment theory that includes the expansion of attachment research with the move to representation. This review will also include the shift in focus from organized attachment patterns otherwise referred to as attachment security (secure, insecure-avoidant, insecure ambivalent) to include disorganized attachment. The narrative assessment tool, the Attachment Script Assessment and a script-based formulation of attachment representations will be described. This formulation

will help frame this investigation which will also include measuring maternal atypical and disrupted caregiving behavior; when the infant's attachment system is activated.

The following paper is divided into four sections. In the first section I review attachment from an historical perspective in order to provide the theoretical background for this investigation's hypotheses. In the second section I present a novel framework for understanding the intergenerational transmission of attachment. Specifically, I will highlight the role of a mother's attachment representations of secure base support seen through her secure base scripts and the separate role of atypical and disrupted maternal caregiving behaviors and infant attachment quality. In the third section, I will describe the results of secondary data analyses used as an initial test of my predictions detailing limitations and future directions for research. Finally, in the fourth section I will discuss implications for social work practice and policy.

### **Brief History of Attachment Theory**

John Bowlby, a British psychoanalyst first introduced Attachment theory to the British Psychoanalytic Society in his seminal paper "The Nature of a Child's Tie to His Mother" (Bowlby, 1958). He coined the word *attachment* to explain an affectional tie or bond between a child and his mother or primary caregiver<sup>1</sup>. Bowlby detailed an "attachment behavioral system," that paralleled a "caregiving behavioral system" that predisposed a caregiver and her infant to seek and maintain proximity; thus establishing the caregiver as a secure base and a safe haven for protection of the infant and the survival of the species, particularly at times of threat (Ainsworth and Bell, 1970;

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<sup>1</sup> Through this manuscript the words "caregiver" and "mother" refer to the "secure base provider" and are used interchangeably as attachment figures are most often mothers but not always. Also, all caregivers will be referred to as she/her while all infants will be referred to as he/his regardless of the gender of the caregiver or the infant.

Bretherton, 1992; Cassidy & Shaver, 1999; Sonkin, 2005). Attachment was described as a "lasting psychological connectedness between human beings" (Bowlby, 1969, p. 194). At the core of his interest in normative vs. maladaptive development was Bowlby's view that the earliest experiences of children exert tremendous influence on development throughout life. He recognized that each troubled youth, with whom he had been working, had experienced a traumatic loss at a very young age and grew up without mothering. He wondered why the mother was so important for the child's well-being. The available explanations at the time came from learning and psychoanalytic theory; both drive reduction theories that associated satisfied hunger drives and mothering in positive ways. For Bowlby these theories were not convincing. "For example, were it true, an infant of a year of two should take readily to whomever feeds him, and this clearly is not the case" (Bowlby, 1980b p.650, Cassidy, 1999 p.3). This dilemma, along with his curiosity about the developmental significance of early losses, led Bowlby to consult other visionaries such as Harry Harlow and Conrad Lorenz who were studying the science of early separation in primates, evolutionary biology, ethology, cognitive science and control systems theory.

A groundbreaking aspect of Bowlby's theoretical approach was that it built upon previous theories by providing for the integration of both the *representational* and *behavioral* aspects of relationships and as such he put forth several important hypotheses. He proposed that an infant's attachment quality is the behavioral expression of the infant's expectations of his mother's caregiving behavior as a secure base and safe haven and that attachment patterns develop as the result of repeated interactions (actual experiences) with the mother which become the infant's beginning internal working model at the sensorimotor level. Another of Bowlby's hypotheses is that attachment quality—the differences in the way each infant experiences (and then uses) his mother as a secure base—is transmitted from one generation to the next. For example, Bowlby

believed that securely attached mothers support the development of secure attachment in their infants. He also thought that under manageable conditions sensitive caregiving was the behavioral mechanism through which this occurred, thus providing the infant with a foundation for affect regulation. In addition, he put forth the notion of “defensive exclusion” hypothesizing that infants develop defensive processes when the infant’s attachment system and the associated feelings are intense, chronically activated and not alleviated. He hypothesized that attachment quality remains stable across the lifespan and that attachment quality in infancy is linked to an individual’s relative capacity to form close and secure relationships in adulthood (Bowlby, 1985).

Bowlby’s partnership with Mary Ainsworth led to the first observational research that created the opportunity to examine and empirically support his hypotheses regarding the impact of early experience on development (Ainsworth, Blehar, Waters & Wall, 1978). Ainsworth (1969), Ainsworth, Bell and Stayton (1971) and Ainsworth, et al., (1978) provided the initial body of empirical evidence for a relation between maternal caregiving behavior and attachment quality. At that time, empirical research focused primarily on infant attachment due to the fact that a measure of adult attachment that would enable the testing of Bowlby’s notion that attachment was a lifelong phenomenon was not available. In 1985, Main, Kaplan and Cassidy developed a measure that created the opportunity for the examination of attachment beyond infancy. For the first time, the empirical examination of the stability of attachment across the lifespan, the relation between maternal attachment quality and infant attachment quality and the intergenerational transmission of attachment became possible. Since that time, research has provided increasing support for Bowlby’s theories. A variety of mechanisms that underlie the intergenerational transmission of attachment have been examined but there are still many gaps in the evidence. As a result a complete



understanding of the mechanisms and causal pathways contributing to the intergenerational transmission of attachment quality does not yet exist.

### **Core Concepts of Attachment Theory**

**Control Systems Theory.** As mentioned, the result of Bowlby's multifaceted investigations led to the formulation of Attachment theory; an ethological/behavioral-control-systems theory (Bowlby, 1969/1982). This revolutionary contribution to the understanding of human development offered a view of relationship development that replaced Freud's explanation regarding an infant's dependency on his mother that was seen as a sign of immaturity that needed to be out grown. Instead, Bowlby offered an alternative view of the infant as inherently competent and motivated to explore by using a primary attachment figure as a secure base (Bowlby, 1969; Ainsworth et al., 1978; Cassidy, 1999; Waters and Cummings, 2000; Waters and Waters, 2006).

Bowlby developed a theoretical framework that built upon his insights and understanding of the similarities between the behavior of human beings and other primates. Borrowing concepts from evolutionary biology and control systems theory he provided explanations for the complicated array of capacities that enable an infant to: monitor multifaceted internal states, communicate across a distance and address the variations in the relational and contextual experiences that shape proximity seeking towards and exploration away from his primary attachment figure (Waters, Crowell, Elliot, Corcoran & Treboux, 2002).

Specifically, Bowlby (1969/1982) proposed that patterns of behavior that have the predictable outcome of increasing proximity between an infant and his caregiver at times of threat are attributed to the complex activity of instinctually guided and environmentally influenced "control systems". He likened this to a guided missile system and described the "attachment control system" as a feedback system that is based in the human central nervous system and developed due

to natural selection and its survival promoting capacities. It has specific goals that are mediated by a range of feelings and interact with other behavioral control systems; the caregiving system, the fear system and the exploration system. Collectively their primary goal is the protection and experience of felt security for the infant (Bowlby, 1969; Main, 1995). Bowlby described both internally generated states (sickness, pain, hunger, fatigue) and environmentally/contextually generated states (being and feeling frightened, threatened or endangered) as activating the attachment system (Bowlby, 1969; Cassidy, 1999). When an infant becomes alarmed his attachment system becomes activated and the infant exhibits “proximity seeking behavior” such as crying, clinging or reaching, which activate the caregiving behavioral system. Ideally, the caregiver then responds in a sensitive, responsive and comforting manner, which establishes the primary caregiver as the source of contact, safety and protection (Ainsworth et al., 1978; Bowlby 1969/1982; 1973).

**Secure Base Phenomenon.** In 1950, Mary Ainsworth began working with John Bowlby at the Tavistock Clinic. Their collaboration drove early observational research that aimed to understand the bidirectional interactions of infants and their mothers and provided the foundational empirical evidence of attachment theory. Ainsworth (1963) introduced the concept of “secure base” signifying the ability of an infant to make exploratory excursions away from his mother, while at the same time monitoring her activities and periodically returning to her. The notion was that when an infant felt assured of his mother’s availability, he would more confidently explore his environment while staying within reasonable proximity to her. However, in an unfamiliar context, or if the infant was frightened, tired, hungry or ill, his attachment system would become activated, the infant would require proximity to his mother and exploration would cease; as the exploratory system would temporarily shut down. Ainsworth, et al., (1971) posited a balance between attachment and exploration.

Ainsworth renamed the “control system” concept the “secure base” phenomenon instructing that although attachment interactions are bidirectional, the caregiver’s behavior with regards the degree of her effectiveness at being a secure base has a decisive and determinant role in how effective the infant becomes at using his mother as a secure base. The maternal contribution includes both the support for exploration under normative circumstances as well as reciprocal, responsive behavior that comforts and calms the infant, terminates the attachment behavior and regulates arousal in threatening, stressful or other extraordinary circumstances (Ainsworth, et al., 1978; Bowlby 1969/1982; Schore, 2000, 2001). To both Ainsworth and Bowlby, the fundamental meaning of *being attached* was the preferential use of one’s caregiver as a secure base from which to explore and a safe haven to which to return. In addition, “the term *secure attachment* refers both to skillful secure base use over time and contexts in naturalistic settings and to be confident in a caregiver’s availability and responsiveness” (Waters & Cummings, 2001, p.165).

**Internal Working Model.** The development of the concept of Internal Working Model (IWM) was another aspect of Bowlby’s control system’s theory. The notion was that an infant develops a set of expectations about future interactions with his primary caregiver, based on prior interactive experiences with that caregiver. The infant builds up a cognitive representation or internalized map of his *relationship* with his primary caregiver. He also forms a representational model of “self” and “caregiver”. This internal representation or cognitive map of each member of the attachment system enables him to make choices to use certain actions as opposed to others.

“The achievement of any set-goal, then, requires that an animal is equipped so that it is able to perceive certain special parts of the environment and use that knowledge to build a map of the environment that, whether it be primitive or sophisticated, can

predict events relevant to any of its set-goals with a reasonable degree of reliability”  
(Bowlby, 1969 p.49).

Bowlby borrowed the term “working model” from the emerging field of cognitive psychology that he preferred over the term “map”. While “map” suggests fixed representations, “working model” suggests that cognitive representations are not fixed but instead can be acted upon through mental operations. In other words, a working model is represented in the mind and as such will enable the re-experience in the mind of prior actual experiences and as a result generate predictions from past knowledge (Bretherton and Munholland, 1999).

Bowlby hypothesized that by the time an infant is approximately one-year-old his secure base use, that developed as the result of the infant’s subtle expectations with regards to being soothed and calmed or otherwise attended to when distressed, has resulted in purposeful patterns of behavior. These are founded in the specific knowledge or “representations” from his past experience of his interactions with his caregiver. In other words, Bowlby theorized that a young child’s ability to use his mother as a “secure base” was the behavioral expression of an organized set of expectations or internal mental representations that he developed about his “self”, and his mother. These developed from their prior repeated reciprocal interactions and as such lead the infant to understand and experience his attachment relationship at the sensorimotor level. For Bowlby, this constituted the very beginning of the development of internal representations and would be the foundation of the very young child’s internal working model (IWM). He believed an IWM enables even a very young infant to recognize interaction patterns and then anticipate his caregiver’s behavior (Bowlby, 1969/1980/88).

Bowlby also posited that the degree to which an infant experiences sensitive and responsive care becomes the foundation from which the infant will ultimately develop a sense of whether or

not he is loveable and worthwhile, if the world is a safe place, and if others can or cannot be trusted. In addition, Bowlby (1980) conceptualized that internal working models of relationships would tend to be stable over time and transmitted across generations. He believed that the concept of an *attachment bond* seemed to apply across a range of relationships and across the life span “from the cradle to the grave” (Bowlby 1979 p. 129). The first several decades of attachment research focused on mother- infant relationships. These studies focused on understanding the relation between maternal behavior and infant attachment quality. It wasn’t until the development of the Adult Attachment Interview (AAI), (George, Kaplan & Main, 1985/1996) which enabled the examination of the Internal Working Model that more of Bowlby’s hypotheses could be empirically tested.

### **Empirical Evidence for Attachment Theory**

**Ainsworth’s Contributions.** Mary Ainsworth, (1963) performed the seminal research that supported many aspects of Bowlby’s attachment theory. Ainsworth conducted two naturalistic observational studies of mother-infant dyads. The first was conducted in Uganda in the 1950’s and the second in Baltimore in the 1960’s. Although vast differences existed in these two populations with regard to their economics and culture; the conclusions were the same; infants exhibited different patterns of attachment (proximity seeking and exploratory secure base behaviors) and these behavior patterns were linked to maternal responsiveness in day-to- day interactions in previous months (Ainsworth, 1963/1978). In other words, a securely attached infant uses one primary attachment figure as a secure base from which to explore and as a safe haven to which to return when experiencing negative emotions and develops overall confidence in his caregiver’s availability, responsiveness, and competence to serve as a secure base (Waters, Hamilton & Weinfield, 2000).

Empirical support for the conceptualization the “secure base” was one of Ainsworth’s unique contributions to attachment theory and came from her hypothesis that “young children require a secure dependence on parents before launching into unfamiliar situations” (Bretherton, 1992, p. 762; Bowlby, 1988). In the 1970’s, building upon her home observations, Ainsworth and her colleagues developed the “Ainsworth Strange Situation,” in order to explore secure base phenomenon by observing the attachment relationship between mothers and their one year olds in the laboratory setting (Ainsworth, et al., 1978). The development of this scientific methodology created the opportunity to examine an infant’s ability to use his primary caregiver as a secure base as well as to assess those beginning internal working models through systematic observation of the dyadic relationship in the laboratory. The procedure consists of a series of play situations interspersed with brief separations from and subsequent reunions with the caregiver. These include introducing slight stressors to the infant, such as the entering of an unknown person and the mother leaving her child alone in the unfamiliar room for a short time in order to activate the infant’s attachment system. The reactions of each infant were observed and coded. As Ainsworth anticipated, each young child played and explored more robustly with his mother present than when a stranger was present or when alone. In addition, Ainsworth also observed unexpected differences in the behavior patterns of the one-year-olds that became evident during the procedure. These behavior patterns were grouped into three categories and were correlated with both patterns of infant secure base behaviors and maternal responsiveness as observed in home observations. These observations resulted in three classifications of attachment that were identified as secure (B babies), avoidant (A babies), and ambivalent (C babies) (Ainsworth, et al., 1978). Main and Solomon (1986/1990) expanded Ainsworth’s conceptualization of attachment categories, identifying a fourth category, known as disorganized/disoriented attachment (D babies).

Securely attached one year olds (B) explored freely when their mother was present, were noticeably upset and openly protested and communicated their distress during the separations from their mother, were happy to see their mother upon reunion, sought proximity and affection, were calmed and comforted quickly by their mother and were able to resume exploration of the environment in their mother's presence—maintaining a balance between attachment and exploration (Ainsworth et.al., 1978). The effective use of their mother as a secure base characterized this group.

Two distinct patterns of insecure attachment emerged. Avoidant one year olds (A) evaded proximity to their mother in the reunion episodes, moving past her and averting their gaze with little to no greeting upon reunion. If picked up there was little or no tendency to cling or resist being put down. They appeared to disregard their mother during play, displayed little distress openly upon the departure of their mother and appeared content in their mother's absence. They tended to treat the stranger similarly to their mother although with less avoidance. They exhibited no overt emotion either when their mother left or returned and if there was any overt distress it dissipated with the entering of the stranger (Ainsworth et.al., 1978). Sroufe and Waters (1977) confirmed, through heart rate monitoring, that these one-year-olds were extremely anxious but were managing to control or repress overt expressions of upset, stress or anxiety.

Ambivalently attached one year olds (C) were likely to be highly distressed when their mothers left the room. They simultaneously exhibited both contact seeking and interaction avoiding behavior in the reunion episodes. These infant showed medium to strong proximity seeking when their mother returned, they were not easily soothed and once contact was made they seemed to have only moderate interest in maintaining it. Thus, looking like they are ambivalent about their mothers. The ambivalent one year old was also either angrier or more passive than secure (B) or avoidant (A)

infants in the Strange Situation. Angry ambivalent behavior was also exhibited in the presence of the stranger (Ainsworth et.al., 1978).

Ainsworth recognized that these three patterns of infant attachment were highly correlated with specific patterns of maternal behavior at home during the home observational phase of the study. Securely attached one year olds (B) exhibited effective strategies for using their caregiver as a secure base was linked to a history of sensitive and responsive care. While insecure-avoidant (A) and insecure-ambivalent (C) infants employed different and distinctive strategies in reaction to their expectations of their mothers' responsiveness (Ainsworth et.al., 1978). These attachment styles could be understood as adaptations for coping with different types of less than optimal maternal responsiveness and caregiving behavior. Children within each category exhibited similar behavior patterns in their secure base use.

**Maternal Sensitivity.** As previously mentioned, Bowlby (1969) identified a complementary system to the infant attachment system, which he called the "caregiving system". The primary function of the caregiving system is to protect the young and can be understood as a behavioral system that is characterized as "the parent's ability and willingness to respond to the child's attachment needs" (Broberg, 2000 p. 37). Ainsworth, (1963) performed the seminal research that supported many aspects of Bowlby's attachment theory. One critical hypothesis was that differences in the attachment quality of infants could be linked back to differences in caregiver sensitivity and contingent responsiveness (Bowlby, 1969; Ainsworth et al., 1978). In their Baltimore study, Ainsworth and colleagues (1978) regularly visited and observed 26 mother-infant dyads in their homes throughout each infant's first year. Detailed notes were taken on numerous aspects of maternal and infant behavior during their interactions. The home observations were compared with each infant's attachment behaviors during the Strange Situation. The scope of



maternal interactive behaviors that had the strongest relation to infant attachment quality were made up of four measurable dimensions; *sensitivity-insensitivity* to the infant's communication, with the optimal sensitive maternal behavior being defined as the caregiver's ability to see things from the baby's point of view, perceive the baby's signals, interpret them accurately, and respond appropriately, promptly and contingently; *acceptance-rejection* of the infant explained as the extent to which a mother is able to balance her negative and positive feelings towards her infant, as well as resolve and integrate her negative feelings; *cooperation-interference* is coded for the degree to which a mother respects her infant as a separate autonomous person as opposed to trying to shape and control his behavior; and *accessibility-ignoring* addressed maternal psychological availability and physical accessibility closely examining a mother's preoccupation with her own thoughts and actions such that she does not notice her infant or his signals (Ainsworth, et al., 1978 p. 142).

Highly significant correlations were found across a range of maternal behaviors that were rated on the maternal *sensitivity-insensitivity* scale—in the home environment across the first few months of life—and subsequent infant secure vs. insecure attachment as measured in the laboratory Strange Situation when infants were approximately one-year-old.

Simply put, sensitive mothers had securely attached infants and insensitive mothers had insecurely attached infants. The idea was that when a caregiver is sensitive and contingently responsive, the infant learns that arousal in the presence of his mother will not lead to stress beyond his coping capabilities. His caregiver will be there as his secure base to re-establish safety. Since that time, sensitivity has been widely examined in an effort to replicate the link between maternal sensitivity and infant attachment quality and understand the maternal antecedents to the intergenerational transmission of attachment quality. Unfortunately, subsequent results have not been as persuasive.

deWolff and van IJzendoorn (1997) performed a meta-analysis of parental antecedents of attachment quality (n=1099) in order to examine the association between maternal sensitivity and infant attachment quality as well as the strength of this relation with the specific goal of creating a clear and coherent picture with the results. Their results showed a combined effect size of  $r(1097) = .24$  which according to Cohen's (1988) conventional criteria indicates that there was a low-moderate correlation between maternal sensitivity and infant attachment quality and concluded that maternal sensitivity is an important contributor but not the exclusive prerequisite to attachment security (deWolff & van IJzendoorn, 1997).

Pederson, Gleason, Moran and Bento (1998) investigated maternal attachment representations, maternal sensitivity and infant attachment quality with a focus on the mediating role of maternal sensitivity between maternal attachment representations and infant attachment quality assessed in the Ainsworth Strange Situation when infants were 13 months old (N=60). Maternal sensitivity was found to account for only 17% of the relation between maternal representation and Strange Situation classifications.

In a meta-analysis of 10 available samples (N=389) van IJzendoorn (1995) examined the role of parental sensitivity as a mediator between a caregiver's attachment representations and the infant's attachment behavior. His results indicated that caregiver sensitivity explained 23% of the variance in relation to infant attachment quality (1995, p. 398). The results of the meta-analysis suggest that although the mother of a secure infant was more likely to behave in a sensitive and responsive manner with her infant than a mother of an insecure infant, most of the influence of maternal attachment representations on infant attachment quality occur as the result of mechanisms other than maternal sensitivity. This author concluded that a "transmission gap" exists in the study

of the causal pathways related to the intergenerational transmission of attachment (van IJzendoorn, 1995).

Taken together, these studies tell us that maternal sensitivity, as it was initially measured by Ainsworth et al., (1978) is extraordinarily difficult to replicate. Much of the confusion regarding caregiver sensitivity and attachment is likely attributed to great discrepancies in the way maternal sensitivity is understood, operationalized and coded by investigators resulting in the use of different definitions, methods of gathering data, and/or time frames in which behaviors were observed (Morton and Browne, 1998; deWolff & van IJzendoorn, 1997; van IJzendoorn, 1995).

Close examination of Ainsworth's constructs and coding scales would indicate that the aggregate of constructs that she has defined as *sensitivity* include maternal representations as well as maternal behaviors. *Sensitivity* is a very complicated multi-dimensional construct. As explained earlier, Bowlby's theory was the first to integrate both representation and behavior. This is operationalized in Ainsworth's definition of sensitivity- "a caregiver's ability to see things from the baby's point of view, perceive the baby's signals, interpret them accurately" (describes maternal representations or mental state understanding of her infant) *and* "respond appropriately, promptly and contingently" (describes maternal behavior)(Ainsworth, et al, 1978 p.142). Several approaches to disentangling the range of qualities and behaviors that Ainsworth and her colleagues (1978) identified as sensitivity have been undertaken. These approaches separately address either maternal representations or maternal behavior. Several approaches have focused on parsing out, understanding and testing various conceptualizations of maternal attachment representations (Aber, Slade, Berger, Bresgi, & Kaplan, 1985; Fonagy, Steele, Steele, Moran and Higgitt, 1991; Koren-Karie, Oppenheim, Dolev, Sher & Etzion-Carasso, 2002; Main, Kaplan and Cassidy, 1985/1996; Meins, Fernyhough, Fradley, & Tuckey, 2001; Waters & Rodrigues-Doolabh, 2001; Zeanah,

Benoit, Hirshberg, Barton and Regan, 1994). The approach of Waters and Rodrigues-Doolabh (2001) is promising and will be discussed more fully in Chapter II.

While another research direction focuses on maternal caregiving behavior, Main and Hesse (1990) as well as Lyons-Ruth and Block (1996) have studied mothers' capacity to regulate infant fear and distress, particularly when the attachment system is activated. This latter approach creates the opportunity to revisit one of Bowlby's foundational concepts—presented earlier in this paper. The notion of the caregiver as a safe haven for protection and through whose behavior the infant learns that arousal will not lead to stress beyond his ability to cope (Bowlby, 1969). This more recent approach changes the focus from maternal sensitivity and contingent responsiveness as the primary mechanism responsible for the transmission of attachment quality and refocuses on Bowlby's original discussion of the role of maternal caregiving behavior as it is related to infant fear and regulation, examining caregiving behavior that may not be successful at protecting, soothing or regulating the infant and may actually be the cause of the fear, distress and/or, further dysregulation (Main and Hesse, 1990; Lyons-Ruth, Bronfman & Parsons, 1999), which is believed to lead to less than secure attachment quality. This approach will also be discussed in detail in Chapter II of this paper.

**Main and Solomon's Contributions.** Main and Solomon (1986, 1990) identified an additional attachment category that they called disorganized/disoriented attachment in infants who were unclassifiable into the established A, B, C, patterns of attachment as described by Ainsworth and colleagues (1978). These authors identified an infant as disorganized/disoriented who demonstrated at times a lack of coherent strategy for engaging in attachment behavior, i.e., using his caregiver as a secure base, during the strange situation. They explain that episodes of disorganized behavior are typically very brief and often occur amidst the other more organized behavior strategies. The "D"

one year old employs disorganized attachment strategies; contradictory and unintegrated behaviors toward his caregiver when he needs comfort. His behavior may appear to be extremely ambivalent during his reunion with his mother, approaching her and then when near her rotating completely away turning his back on her. Contradictory approach-avoidance behaviors toward the caregiver when the infant is under stress is thought to be an indicator of an infant's inability to organize a coherent strategy for eliciting comfort from his caregiver. Disorganized attachment behaviors occur intermittently in combination with secure, insecure-avoidant and insecure-ambivalent attachment strategies. The infant may show various types of disorganized/disoriented attachment behavior in one or more of the following seven categories during the strange situation in the presence of his caregiver (Hennighausen & Lyons-Ruth, 2007; Main & Solomon, 1986, 1990). The seven types of behavior or categories are as follows: 1) simultaneous display of contradictory behavior- tightly clinging with head and eyes averted, anger or distress; 2) rapid sequential display of contradictory behavior-extreme distress/attachment behavior followed by or disorientation or strong avoidance of caregiver; 3) stilling or freezing or slow-motion movements and expressions-holding completely still and looking dazed; 4) undirected, misdirected, incomplete, and interrupted movements and expressions-seeking proximity to caregiver and then turning away before contact is made, following stranger out of the room when caregiver returns; 5) direct indices of confusion, apprehension, disorganization or disorientation-unexplained tumble to the ground by a good walker upon proximity to caregiver; 6) asymmetrical movements, anomalous postures, stereotypes, mistimed movements- inexplicable lying prone for several seconds, sudden odd and jerky movements; 7) direct indices of fear or apprehension of caregiver- moving away from caregiver, hands over mouth upon return of caregiver, clinging to stranger and head turned away from caregiver, fearful facial expressions. This range of behaviors suggests that the infant is not able to effectively use his

mother as a secure base. van IJzendoorn, Schuengel and Bakermans-Kranenburg (1999) established the reliability, discriminant validity and predictive validity of disorganized attachment in infancy with their meta-analysis using 6000 parent-infant dyads.

### **The Move to Representation/Mental Models**

As previously mentioned, Bowlby proposed the concept of the internal working model (IWM) which in infancy refers to the infant's expectations of his caregiver's responses that become organized into internal mental representations of attachment at the sensorimotor level. The creation of the Ainsworth Strange Situation made it possible to confirm those beginning internal working models by recognizing their behavioral expression in the different patterns of infant secure base use. Bowlby's theory posits that internal working models predict attachment related behaviors and are responsible for how people interact in relationships across the lifespan—"from the cradle to the grave" (Bowlby, 1979 p. 129). Bowlby believed that internal representations or IWM stay stable over time and that in adulthood a mother's attachment representations or maternal IWM was passed on to her infant. However, because secure base experiences in infancy leave only sensorimotor traces and adult internal working models require formal mental representations (Waters & Waters, 2006), it was not until the development of the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985/1996), which investigated attachment representations in adulthood, i.e., a caregiver's conceptualization of her early relationship with her parents— retrospectively— that those hypotheses were able to be tested (Main, Kaplan & Cassidy, 1985; Main & Goldwyn, 1985/1995; Waters, et.al., 2000).

**Adult Attachment Interview (AAI).** An article published by Main, Kaplan and Cassidy (1985) marked "the move to representation" and proved to be revolutionary for the study of attachment theory. The article introduced the Adult Attachment Interview (AAI) and

defined an attachment working model “as a set of conscious and/or unconscious rules for the organization of information relevant to attachment and for limiting or obtaining access to that information” (Main, Kaplan & Cassidy, 1985, pp. 66-67). The AAI is a semi-structured interview that is believed to access the organization of an adult’s attachment representations by asking each individual a variety of questions about his/her relationships with their parent(s). Interview questions cover many attachment relevant dimensions such as positive and negative attitudes regarding relationships, separation experiences, early memories, etc. The AAI conversation is thought to access attachment representations that developed from early experiences with one’s parents which are then given voice through the quality of the adult subject’s capacity to tell a narrative story about her relationships that is believable and coherent. Main, et al., (1985) emphasized that both the content and structure of the verbal language is relevant for identifying adult attachment classifications.

Main’s framework built upon Bowlby’s original idea that the ability of an infant to use his mother as a secure base is seen through attachment patterns that in infancy are the behavioral expression of an organized set of expectations or internal representations of the self and the caregiving relationship. Main hypothesized that for adults the patterns of attachment were also the result of those “individual differences in the mental representations of the self in relation to attachment” (1985, p 67), that in adulthood influence non-verbal behavior patterns as well as verbal language patterns and structures of the mind (Main, et al., 1985). Simply put, she believed that the three attachment patterns (secure, ambivalent and avoidant) that Ainsworth and colleagues (1978) identified in the Strange Situation during infancy would be paralleled by the organization of adult attachment representations expressed through behavior and discourse generated many years past the initial assessment of attachment during infancy. Taken together, these seminal ideas opened the

door for the exploration of Bowlby's hypotheses beyond infancy, that attachment is stable across the lifespan as well as intergenerationally transmitted (Main, Kaplan & Cassidy, 1985).

The Main, Kaplan and Cassidy (1985) coding system for the AAI resulted in three adult attachment classifications that correspond to the Ainsworth et al., (1978) Strange Situation classifications for infants, i.e., secure, avoidant and ambivalent. The adult classifications were characterized as secure-autonomous, insecure-dismissing and insecure-preoccupied. The infant attachment patterns paralleled the caregiver pattern of discourse. If an infant was classified as secure, he had a caregiver who valued attachment relationships, who described them in an open and balanced non-defensive manner. That caregiver's relationships were not idealized and that caregiver was classified as *secure-autonomous*. If an infant was classified as avoidant he likely had a primary attachment figure that tended to be defensive, minimize, devalue, deny and distance themselves from the emotional or personal impact of attachment relationships. That caregiver was classified as *insecure-dismissing*. The infant who was classified as ambivalent had a caregiver who was preoccupied and overinvolved with dependency issues with her own caregiver(s). That attachment figure tended to be angry and ambivalent about her attachment relationships and was classified as *insecure-preoccupied*. Each caregiver may also be classified as unresolved in addition to a major classification. The infant who was classified as disorganized/disoriented most likely had a caregiver classified as *unresolved*. That caregiver tended to be frightening to the infant at times. This classification status is believed to be related to reports of attachment trauma such as, early loss and/or abuse and reflects elements that are unusual to see together in an interview, for example highly idealizing one caregiver while at the same time being actively full of rage at the other. In addition, a single score that reflects the coherence of the narrative (connectedness and believability) is given by the coder (Waters & Waters, 2006). Main et al., (1985) reported the important finding



that the quality of an infant's attachment security at one year is strongly predicted by his mother's coherence score in her AAI attachment narrative. This finding held irrespective of whether or not maternal history had been positive or negative. A mother who exhibits a high level of coherence, i.e., a strong ability to make sense of and understand her past, has a strong probability that her one-year-old will be classified as having a secure attachment in the strange situation (Hesse & Main, 2000). Conversely, if maternal coherence is quite low an insecure or disorganized attachment was predicted.

van IJzendoorn (1995) in a meta-analysis of 18 available samples ( $N=854$ ) examined the predictive validity of parents' AAI classifications assessed immediately after childbirth and the infants attachment categories as observed in the Strange Situation when each infant was approximately one-year-old. This meta-analysis performed ten years after the AAI's development found the predictive power of the AAI to be a "replicated fact" (p. 387). A combined effect size of 1.06 was found for the secure versus insecure classification when examining the AAI's ability to predict infant attachment quality. This is considered very large according to Cohen (1988). The correspondence for the secure versus insecure split was 74% ( $k = .49$ ,  $N=548$ ). In addition, van IJzendoorn examined correlations between each attachment category; autonomous-secure, dismissive-avoidant, preoccupied-ambivalent, and unresolved-disorganized; the correspondence for the four-way classifications was 63% ( $k = .42$ ). He concluded that specific AAI classifications could predict infants' attachment classifications even when four categories were used. However, the maternal preoccupied attachment group was the least predictive group. These results support Bowlby's hypothesis that attachment quality is transmitted from generation to generation, although the exact mechanisms of transmission were not identified.

The AAI has had a profound influence on the study of attachment. It has enabled the testing of several of Bowlby's hypotheses regarding the stability of attachment over the lifespan and across generations. Several studies using the Strange Situation in infancy and then following-up with the AAI twenty years later have confirmed that attachment in infancy is consistent with attachment representation in adulthood (Waters, Hamilton and Weinfield, 2000; Waters, Merrick, Treboux, Crowell & Albersheim, 2000).

Due to the creation of the AAI, Waters and colleagues (2000), were able to recontact sixty of a cohort who had originally participated in a study these authors had conducted using the Ainsworth Strange Situation, twenty years earlier, when the participants were each 12 months of age. Fifty agreed to participate (21 males, 29 females) in the AAI conversation. The results of this follow-up study indicated that 72% ( $\kappa = .44$ ) had the same attachment classification in early adulthood as in infancy. As predicted by attachment theory, those subjects with insecure attachments who previously had been securely attached at one year of age had suffered a significant trauma such as the loss of a parent or ongoing physical or sexual abuse. The results of this study support Bowlby's hypothesis that individual differences in attachment security tend to be stable across the lifespan and yet remain open to change related to experience.

Although the AAI presents the researcher with extensive and rich clinical information it comes with its challenges. The AAI is difficult to administer and is time consuming, complicated and expensive to code. Consequently, it requires a significant commitment from researchers to embrace its use particularly with regards to transcribing and coding the interview transcripts which are most often 20 pages or more. As a result the use of the AAI is only practical for well-funded research. According to Waters and Waters (2006),

“More importantly, there is considerable distance between the AAI narrative and underlying attachment representations. The interview provides a sample of verbal behavior from which we make inferences about the “goodness” of underlying mental representations. But the content and organization of the underlying representations is not explicitly mapped. As a result, links to behavior remain correlational and the architecture of the underlying representations, mechanisms of acquisition and access, how they influence affect, cognition, and behavior, and the mechanisms underlying stability and change remain speculative. Simply put the AAI works far better than we can currently explain. While it remains useful as a broadband measure of the coherence of attachment representations, it is important to begin examining specific modes of attachment representation, their links to AAI narratives, and their impact on affect, cognition, and behavior” (p. 186).

## CHAPTER II

### **The Association between a Mother's Secure Base Support and her Ability to Soothe and Regulate Her Infant When He is Distressed: An Emerging New Theory**

*Maternal Secure Base Support.* Given the surprising lack of empirical evidence explaining the mechanisms and causal pathways involved in the transmission of attachment quality there was a need to rethink the components of the transmission process. Waters and Cummings (2000) and H.S. Waters and Rodrigues-Doolabh (2001) aimed to explain the composition of underlying attachment representations or internal working models. H.S. Waters and Rodrigues-Doolabh (2001) developed a new, valid, more easily administered and scored method of assessing adult attachment. These authors use narrative stories to reveal specific aspects of the cognitive structure of attachment representations. This approach directly assesses the internal working model of an adult's "secure base phenomenon" as explained by Bowlby (1969, 1988) and Ainsworth (1963) a core concept of attachment theory.

Bretherton (1987) was one of the first to articulate that infants seem to "know" what to expect in a sequence of interactions regarding attachment and exploration in a similar way that one knows what to expect from sets of other familiar interactions that make-up for example, a "going to the restaurant" script. He suggested that attachment working models could be described in terms of cognitive schemas, event representations or scripts. Building upon this notion Waters and Rodrigues-Doolabh (2001) hypothesized that the history of an individual's secure base support is represented in implicit memory as a secure base script. They posited that if secure base support has been consistent, the script will be organized, complete, well consolidated, and readily accessible in appropriate situations when the caregiving system is activated. Alternatively, if secure base support

has been inconsistent, incomplete, or unsuccessful, the script will be less organized, less well configured and likely less accessible and retrievable. According to Waters and Waters (2006), “a secure base script represents the temporal-causal structure of repeated experiences” (p.189). There are eight key elements to a complete secure base script: 1) an infant and mother are constructively occupied; 2) they are interrupted by an event; 3) there is a bid for help; 4) the bid for help is detected and help is offered; 5) the offer of help is accepted; 6) the help is effective in overcoming the difficulty; 7) the help also includes effective comforting and affect regulation and 8) the pair return to (or initiate new) constructive interaction.

Waters and Rodrigues-Doolabh (2001) created the Attachment Script Assessment in which individual adults are asked to produce verbal narrative stories about mother-child and adult-adult interactions from prompt-word outlines, each consisting of a story title and 12-14 word prompts designed to elicit secure base scripts. The specific sets of word prompts and story titles were designed to tap into implicit memory by offering *associative cues* that unconsciously activate the mother’s own attachment system. Each mother produces four attachment related stories. The narrative stories are transcribed and rated with regard to the presence of the elements and how much the narrative is organized around a secure base script. A key feature of each narrative script is the infant’s capacity to resume exploration. A narrative story with the most complete and an organized script has all 8 elements.

Results of the Waters and Rodrigues-Doolabh (2001) initial validation study for this measure with adult women determined that individual differences in the presence of the secure base script reflected a single generalized script. Each mother produced four attachment narratives and two neutral narratives. Script scores among different attachment narratives were highly correlated, but unrelated to script scores from the neutral, non-attachment narratives. Moreover, the script

knowledge was validated against the AAI coherence score ( $r=.50-60$ ). As previously stated, coherence refers to the individual's ability to tell a story about their early experiences that is organized and believable. The AAI coherence score was the AAI scale score most highly correlated with infant attachment quality.

Continued examination of the Attachment Script Assessment found script knowledge and organization to be stable across a period of one year (Vaughn, et al., 2006) and correlated with maternal sensitivity and infant strange situation classifications (secure, ambivalent and avoidant) (Tini, Corcoran, Rodrigues-Doolabh and Waters, 2003). The Script Assessment was also found to be correlated with infant attachment behavior in naturalistic settings when measured by the Attachment Q-Sort (Bost, et al., 2006; Verissimo & Salvaterra, 2006) and with both biological (Bost, et al., 2006) and adoptive families (Verissimo & Salvaterra, 2006). Taken together, these studies support the hypothesis that mothers who have well organized complete scripts have infants with secure attachments i.e., infants who treat them as a secure base from which to explore (Bowlby, 1969; Ainsworth, Bell & Stayton, 1971; Ainsworth et al., 1978). Tini, Corcoran, Rodrigues-Doolabh and Waters (2003) also found the predictive value of the Attachment Script Assessment to infant attachment quality 74% ( $k = 54$ ) to be comparable to the AAI, which adds support to the hypothesis that a mother's history of secure base support as seen through her secure base scripts is an essential element of the intergenerational transmission of attachment quality.

These authors believe that the secure base script representation is of critical importance in the transmission of attachment security from caregiver to infant. They propose that it is the secure base script that serves to guide a caregiver's behavior towards her infant and when the script is organized, detailed and accessible an infant develops a secure attachment. When the script is less organized, less detailed, or less consistently accessible an infant's attachment quality is insecure. To

date, the relation between a mother's secure base scripts and an infant's disorganized attachment quality has not been explored. It seems reasonable to hypothesize that a mother's secure base support would guide her behavior with her infant and that the mother's behavior would in turn affect the development of her infant's attachment quality. What remains unanswered is; how does the attachment script guide maternal behavior and how does maternal behavior influence the transmission of attachment quality?

In spite of the growing body of evidence associating attachment representation generally, or secure-base support specifically, we still do not know what it is that each mother is *doing* in her interactions with her infant that is the key to understanding the mechanisms of transmission. We still cannot definitively answer Bowlby's original question – Why is the mother so important?

***Maternal Atypical and Disrupted Caregiving Behavior.*** As previously stated, it is clear that maternal sensitivity has some influence in the transmission of attachment quality, yet empirical approaches designed to illuminate its function repeatedly fail to tell us how attachment quality is transmitted across generations (de Wolff & van IJzendoorn, 1997; van IJzendoorn, 1995).

Investigators have embarked on a range of approaches to further identify factors that impact the transmission of attachment quality. The research of George and Solomon (1996) support Bowlby's theory that the attachment behavioral system of the infant that is complimented by a reciprocal caregiving system in the mother. These authors identified caregiving attachment representations that parallel both the AAI categories and the Strange Situation classifications for mothers of secure, avoidant and ambivalently attached infants. This association was not apparent for disorganized attachment (Main et al., 1985; Solomon, George & Dejong, 1995), which may indicate a different path to disorganization.

These findings support Bowlby's theory that the infant attachment system evolved to support survival through increasing the likelihood of protection of the infant in response to perceived threat or stress through infant proximity seeking and maintaining behaviors as well as through those reciprocal behaviors in the caregiver. As Bowlby (1969) has proposed, the infant of a caregiver who is sensitive and contingently responsive, learns that arousal in the presence of his mother will not lead to stress beyond his coping capabilities. Unfortunately, not all infants experience their caregiver as a safe haven, a secure base or a source of regulation of their distress (Ainsworth et. al., 1978; Lyons-Ruth, Bronfman, & Parsons, 1999). It then follows that a caregiver's capacity to regulate her infant's distress and fear is critical for the infant's feeling of security and ultimately secure attachment quality (Lyons-Ruth & Spielman, 2004).

A newer approach based on the work of Main and Hesse (1990) and built upon by Lyons-Ruth, et al., (1999) which examines a mother's overall ability to regulate her infant's distress and negative affect during times of increased arousal and posits that this capacity will have a critical influence on attachment quality. This approach examines a range of specific atypical and disrupted caregiving behaviors that a mother might employ when her infant's attachment system is activated. It focuses on maternal behavior that either does not regulate infant behavior or leads to increased dysregulation without any mechanism for resolution for the infant (Bronfman, et al., 2011; Grienberger, Kelly & Slade, 2005). Recently researchers have been examining links between maternal attachment representations, maternal behavior and disorganized attachment in order to better understand how attachment is intergenerationally transmitted (Solomon & George, 1996; Grienberger et al., 2005; Lyons-Ruth et al., 1999). Main and Hesse (1990) suggest that most infants develop *organized* attachment relationships which occur when infants experience *consistency* in the patterns and quality of their caregivers' responsiveness to their bids for help. The



idea is that secure, insecure-avoidant or insecure-ambivalent infants develop organized strategies or patterns for coping with stress even if the maternal responsiveness is less than optimal. There is little research exploring this theory, yet many researchers seem to share this perspective. Recently many investigators have focused on disorganized mother-infant relationships. They hypothesize that examining disrupted maternal caregiving behavior particularly in the context of the Strange Situation will provide better opportunities to understand the transmission of attachment quality (Lyons-Ruth et al., 1999). The specific direction this research has taken is the result of concerns that disorganized attachment is associated with poor developmental and mental health outcomes (Carlson, 1998; Lyons-Ruth, Alpern & Repacholi, 1993; Solomon, et al., 1995). Seventy-seven percent of high-risk mother-infant dyads and 15% - 20% of low-risk mother-infant dyads have infants with disorganized attachments suggesting a developmental pathway to disorganization even when maltreatment is not a factor (van IJzendoorn, Schuengel & Bakermans-Kranenburg, 1999). Still this approach has found mixed results.

In their seminal work on the etiology of infant disorganized attachment Main and Hesse (1990) offer a conceptual model that attributes the association between maternal caregiving behavior and the development of disorganized attachment to the unresolvable dilemma; the deep confusion and fear that the infant feels when the attachment figure from whom he needs to seek comfort – his secure base – is the same person who he is experiencing as frightening and threatening. Under these circumstances, the infant cannot use his mother to help him maintain behavioral and psychological organization and he is left with no viable strategy to cope with his fear and distress and as such, displays the anomalous behaviors that are characteristic of infants with disorganized attachment quality (Main & Solomon, 1986). These authors believe that the infant with a secure, avoidant or ambivalent attachment to his primary caregiver expects that the

source of his alarm is in some way from his external environment. The offer that he can elicit protection from his caretaker as well as maintain behavioral and attentional organization as his distress is resolved (Hesse & Main, 2000). Although this may hold true for securely attached infants, what remains unknown is the internal experience of avoidant and ambivalent infants and how that experience differs from that of both secure and disorganized infants.

Main and Hesse (1992) developed the first coding system to empirically examine maternal frightened, threatening and dissociative behavior (FR) which they theorized to be the result of the caregivers' failure to psychologically integrate previous experiences of trauma and/or losses of significant attachment figures in their lives. These authors theorize that the fear that is evoked for these caregivers while interacting with their infants triggers the frightened or frightening caregiver behavior that in turn produces deep confusion, fear and disorientation for the infant and undermines the development of organized attachment strategies in the infant (Madigan, Moran & Pederson, 2006). Based on this conceptualization their coding system identifies six categories of FR behavior:

- 1) Anomalous, frightening/threatening behavior;
- 2) Sexualized behavior;
- 3) Disorganized/disoriented behavior;
- 4) Deferential, timid, and submissive behavior;
- 5) Dissociative behavior and
- 6) Frightened behavior.

Studies using this coding system yielded varied results. van IJzendoorn, Bakermans-Kranenburg and Blom (1998), found no significant relation between mothers FR behavior and infant disorganized attachment. Furthermore they found most mothers in the study engaged in some FR behavior, regardless of their infants' attachment category. Buettner, Hieber and Grossman (1997; Madigan et al, 2007 p.95) in a study of 50 mother-infant dyads also found no association between FR behavior and disorganized attachment.

Schuengel, Bakermans-Kranenburg, and van IJzendoorn (1999) provided the first empirical support for the Main and Hesse (1990) hypothesis using the FR coding system. They performed home observations with a sample of 85 middle-class mothers and their 10-11 month old infants. Mothers with infants categorized as disorganized displayed significantly more FR behavior than mothers with infants who had secure, avoidant or ambivalent attachments. Similar results were found cross-culturally in both home and clinic observations (True, Pisani, & Oumar, 2001) as well as in a middle class sample of fathers and mothers (Abrams, Rifkin, & Hesse 2006). However, only mothers' dissociative behavior was found to be a predictor of disorganized attachment (Schuengel et al, 1999).

Lyons-Ruth and Block (1996) and Lyons-Ruth, et al., (1999), built upon the Main and Hesse (1990) hypotheses with their notion of "failure to repair." These authors proposed that a caregiver's own attachment history is likely connected to this failure suggesting that if as an infant, a caregiver did not experience comforting during times of extreme distress and suffering, then it is likely that these feelings in the infant will evoke in the caregiver unresolved and overwhelming fear. They posit that these frightening feelings then block the caregiver from recognizing her infant's anguish and prevent her from being able provide soothing and calming to her infant. As a result, the infant experiences the activation of his attachment system with neither the recognition of his attachment needs, nor the opportunity to be soothed and settled. He has no effective way to influence his caregiver at these times of extreme distress (Bowlby, 1985; Grienberger, et al., 2005).

In their research program, Lyons-Ruth and her colleagues (Lyons-Ruth et al., 1999) developed an instrument intended to code atypical and disrupted maternal caregiving behavior during the Strange Situation: the Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE; Bronfman, Parsons, & Lyons-Ruth, 1999; Bronfman, Madigan &

Lyons-Ruth, 2009/2011). In the view of these authors; “without reasonably effective caregiver modulation of arousal, the infant is unable to organize a consistent strategy for using the parent as a source of comfort when under stress” (Bronfman, Madigan and Lyons-Ruth, 2011, p. 6). As such their coding system enhanced the Main and Hesse (1990) system. In addition to the examining the frightened, frightening, and dissociated behavior, Lyons-Ruth et al., (1999) also include profound disruptions in caregiver – infant affective communication; caregiver behaviors that indicate physical or emotional withdrawal; role or boundary confusion and intrusiveness-negativity. These authors also examine the overall level of disruption in caregiver- infant interactions. They propose that these extreme forms of misattunement can also be pathways to fear for an infant who has no strategies to have an effect on his caregiver during times of extreme distress.

The AMBIANCE measure was developed with consideration of three inter-related ideas (Lyons-Ruth et al., 1999). Adding to the original “frightened/ frightening” hypothesis defined by Main and Hesse, the AMBIANCE measure includes the notion of a “failure of repair.” This hypothesis suggest that a caregiver’s attention to her infant’s distress must be predictable and responsive “enough” so the infant can develop at least a minimally effective strategy for eliciting care. In addition, the notion of “competing strategies” suggests that a caregiver who experiences “a continuing state of fear” (Main & Hesse, 1990) when her infant’s attachment needs are aroused will both experience and display conflicting attachment tendencies toward her infant. “Caregivers feel compelled to simultaneously reject and heighten the infant’s attachment related affects and behaviors” (Grienenberger, et al., 2005 p. 301).

The Lyons-Ruth, Bronfman and Parsons (1999) original validation study applied the AMBIANCE measure to a sample of 65 high-risk caregivers and their 18-month-olds. Maternal behavior was coded during the Ainsworth Strange Situation as Lyons- Ruth et al., (1999) saw the

Strange Situation as an optimal environment to examine atypical maternal caregiving behavior when the infant's attachment system was activated. Assessing maternal behavior during the Strange Situation provides an opportunity to view a mother as she regulates, fails to regulate or is further dysregulating of her infant's distress and negative affect. Their results indicated that mothers of disorganized infants displayed more atypical behavior overall and specifically increased rates of disrupted affective communication, more fearful/disoriented behavior, and more intrusive/negativity. The strongest relationship was found between infant disorganization and the Overall Level of Disrupted Communication Scale, i.e., sending contradictory signals, failing to initiate responsive behavior to infant cues and/or inappropriate responding to infant signals. Significant correlations were also found between the AMBIANCE total score and a 9-point scale that measured the level of infant disorganized attachment behavior (Lyons- Ruth et al., 1999). These authors found their findings replicated and expanded in studies with both high and low-risk samples (Goldberg, Benoit, Blokland, & Madigan, 2003; Grienberger, et al., 2005; Madigan, et al., 2006).

Goldberg, et al., (2003) examined mother-infant dyads from a low-risk community sample (n=197). The association between disrupted maternal behavior and disorganized infant attachment in the Strange Situation when infants were approximately one year of age using the AMBIANCE coding system was investigated. Mothers of disorganized infants exhibited higher levels of disrupted communication than mothers of infants with organized attachment patterns (secure, ambivalent, avoidant). Also, mothers with unresolved states of mind as assessed through the AAI, showed higher levels of disrupted communication, withdrawal behaviors and fearful and disoriented behavior than mothers who were not unresolved. These authors found that disrupted maternal behavior did not explain a significant portion of the relation between unresolved states of

mind and infant disorganized attachment. They attributed this result to not having enough variation in attachment quality in the populations that they examined.

Madigan, et al., (2006) studied high-risk mother-infant dyads (n=82). The association between unresolved maternal attachment status, disrupted maternal interaction during play, and disorganized infant attachment was explored using the AMBIANCE coding system. Disrupted maternal behavior specifically fearful/disoriented behavior was significantly associated with disorganized attachment. Furthermore, caregivers who were unresolved were more likely than not-unresolved caregivers to exhibit disrupted behaviors their infants and disrupted behavior was found to mediate the association between unresolved status and disorganized attachment relationships.

Grienenberger, et al., (2005) investigated first time high-risk mothers and their 10-14 month-old infants (n= 45) using the Parent Development Interview (PDI) to measure parental reflective function (RF), the AMBIANCE coding system and the Strange Situation. They found that mothers of insecure infants (avoidant, ambivalent, disorganized) had significantly higher AMBIANCE scores than mothers of secure infants and the level of disruption in mother-infant affective communication was inversely correlated with the level of maternal RF with a strong effect size of ( $d= 1.01$ )(Grienenberger et al., 2005 p.308). It is important to recognize that this study differs from previous studies that focused on the organized (secure, ambivalent, avoidant) vs. disorganized split. These authors found a caregiver's inability to modulate her infant's arousal, specifically disruption in mother-infant affective communication to be significantly associated with infants in all three insecurely attached groups avoidant, ambivalent and disorganized. This finding opens the door to examining the specific maternal caregiving behaviors that are separately associated with each of the four infant attachment categories.

The opportunity to integrate the representational approach of Waters and Rodrigues-Doolabh (2001) with the behavioral approach of Lyons-Ruth et al., (1999) is clear. Waters and Waters (2006) propose a script-based transmission of attachment quality suggesting that maternal attachment quality translates into infant attachment quality. According to their theory, caregivers build script-like representations of secure base experiences. “Individuals who have had consistent and coherent secure base support in infancy and childhood will have knowledge of this secure base script and ready access to it in all their secure base interactions” (p.188). These authors posit that a secure base script representing each mother’s internal working model or attachment representation of her secure base support guides her caregiving behavior with her infant, particularly when the infant is in a heightened state of distress. In other words, when a mother’s caregiving system is activated her own internalized secure base script is activated and guides her caregiving behavior enabling her relative level of success at regulating her infant’s distress based on her history of secure base support. Implicit in this conceptualization is that mothers behave differently with their infants relative to their script structure, completeness, consistency and accessibility.

This theory parallels the Lyons-Ruth and Block (1996) and Lyons-Ruth, et al., (1999) notion that a caregiver’s own attachment history is related to the “failure to repair” when the infant is distressed. They propose that if as an infant, a caregiver did not experience comforting during times of extreme fear and suffering it is likely that the infant will evoke unresolved and overwhelming feelings of fear in his caregiver. Those extreme feeling will block the caregiver from recognizing her infant’s distress. They will also prevent her from being able to soothe and calm her infant. The infant will experience the regular activation of his attachment system and like his mother, will not experience his caregiver as providing comfort, soothing and settling.

Both theories recognize the essential need for an infant to experience soothing, settling and resolution/repair of his distress. Waters and Waters (2006) suggest that the lack of this essential secure base experience as an infant— for a mother— creates an inability for her to build a full secure base script which underlies the reason that she cannot interact with her infant in a comforting manner, particularly when her caregiving system is activated. These authors also suggest that the infant engages with his mother on a behavioral level. Lyons-Ruth et al., (1999) suggest several specific atypical caregiving behaviors that they believe may be responsible for insecure attachment, particularly disorganized attachment.

Thus, it seems plausible that when a mother's attachment script is complete, consistent and readily accessible that it guides her caregiving behavior to include secure base support for her infant. That is, to include comfort, soothing, resolution, repair, and a return to exploration. The script would serve as a guide that helps contain and regulate the mother's feelings and behavior so that she can help her infant manage his. However, if the structure of a mother's attachment script is incomplete, inconsistent or not readily accessible at a time when her caregiving system is activated then the script will be less effective as both a guide and at helping a mother manage her own intense feelings and behavior—as if there are holes through which negative feelings leak. It is likely that the differences in the structure, completeness, consistency and accessibility of mothers' scripts differentially guide their behaviors with their infants and that the different ways that mothers behave are associated with the development of differences in attachment quality.

I propose to examine the relation between a mother's secure base scripts and her disrupted caregiving behaviors with her infant during times of infant distress. By doing so we may learn about the relation of specific attachment scripts associated with infant attachment patterns. We also may learn about specific maternal behaviors that are associated with infant attachment patterns.



Finally we may learn if a mother's attachment representation of her secure base support guides her ability to soothe and regulate her infant and how that process influences infant attachment quality.

## CHAPTER III

### **A Study of Mothers' Secure Base Scripts, Their Atypical and Disrupted Caregiving Behavior and Infant Attachment Quality**

How is it that a mother transmits a sense of security or insecurity to her infant? Much of the existing literature highlights the links between the AAI, maternal sensitivity and infant attachment security (van IJzendoorn, 1995) or the AAI, atypical maternal behaviors and infant disorganized attachment (Madigan et al., 2006). Missing from the literature is an examination of the underlying structure of attachment representations along with a range of associated atypical caregiving behaviors and the four infant attachment classifications. It is likely that one of the critical factors in the development of infant attachment quality is a mother's caregiving behavior when an infant's attachment needs are heightened. Particularly, a caregiver's ability to soothe, calm, and regulate her distressed infant; her inability to do so; or her being a further dysregulating force for her infant. This study will explore the notion that a mother's experience of her secure base support is associated with her ability to regulate her infant's fear and distress.

The proposed study is unique in that it will add to our current knowledge base by examining the relation between a novel type of maternal attachment representation— maternal secure base scripts and infant attachment quality, including disorganized attachment. In addition, the AMBIANCE measure will be used to examine the separate relationship between the following maternal atypical caregiving behaviors: the overall level of disrupted caregiving behaviors; disruptions in affective communication; frightening/disoriented behavior; withdrawal behaviors; intrusive/negative behaviors and role boundary confusion and the four infant attachment classifications. This approach may offer new information about the structure, consistency and accessibility of maternal secure base scripts and the role scripts play in influencing a mother's

caregiving behavior in times of infant distress. This approach may also provide further information regarding the intergenerational transmission of attachment quality. A simplified process model of the theory is shown in in figure 1.

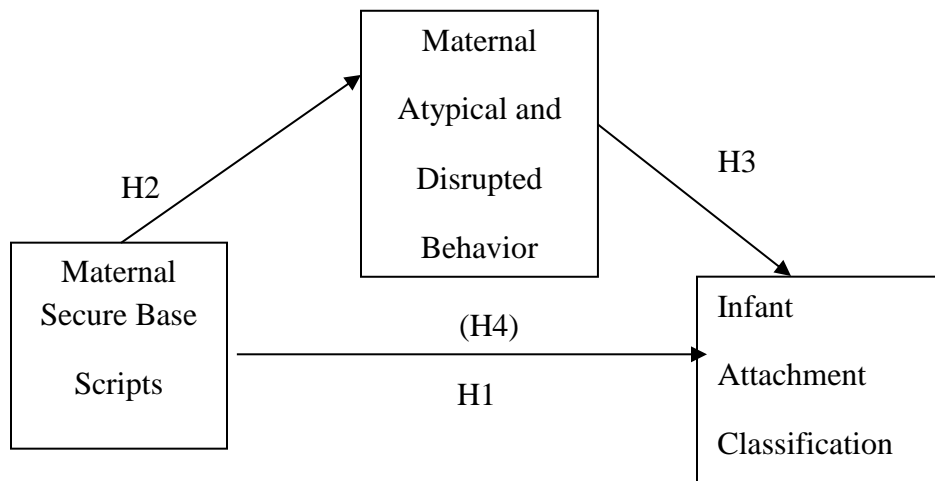


Figure 1 Simplified Process Model.

## Study Hypotheses

Therefore, I hypothesize the following:

**H1:** There will be a relation between mothers' Secure Base Script scores and Infant Attachment Classification as measured in the Strange Situation.

**H1a:** Mothers of secure infants will have higher secure base script scores than mothers of avoidant, ambivalent, and disorganized infants.

**H2:** There will be a relation between mothers' AMBIANCE overall level of disrupted communication total scores and mothers' secure base script scores. Specifically, mothers' overall level of disrupted communication score will be inversely correlated with maternal secure base script scores.

**H2a:** There will be a relation between mothers' AMBIANCE affective

communication errors subscale scores and mothers' secure base script scores. Specifically, Mothers' affective communication scores will be inversely correlated with maternal secure base script scores.

**H3:** There will be a relation between mothers' overall level of disrupted communication scores and infant attachment quality.

**H3a:** Mothers of insecure infants (avoidant, ambivalent, disorganized) will have higher AMBIANCE overall level of disrupted communication total scores than mothers of secure infants as classified in the strange situation.

**H3b:** Mothers of organized infants (secure, avoidant, ambivalent) will have lower AMBIANCE overall level of disrupted communication total scores than mothers of disorganized infants as classified in the strange situation.

**H3c:** Mothers of insecure infants (avoidant, ambivalent, disorganized) will have higher AMBIANCE affective communication errors subscale scores than mothers of secure infants as classified in the strange situation.

**H3d:** Mothers of organized infants (secure, avoidant, ambivalent) will have lower AMBIANCE affective communication errors subscale scores than mothers of disorganized infants as classified in the strange situation.

**H4:** Maternal behavior as measured by the AMBIANCE will mediate the impact of maternal secure base scripts as measured by the secure base script score upon infant attachment in the Strange Situation.

## **I. Methods**

### **Sampling Design and Participants**

Of the 60 dyads that were recruited for the original study four did not complete the study

and three could not be classified in the strange situation leaving 53 mother-infant dyads. In addition, in reexamination of the infants in the strange situation for the current study, one infant was found to have pervasive developmental disorder (PPD) and was excluded leaving a final sample of 52 mother-infant pairs. The sample came from the area surrounding a nearby research extensive university.

Mothers were mostly white (92%)<sup>2</sup>, had been currently married to their first husband (90%)<sup>3</sup>, had completed at least some college (93%)<sup>4</sup>, had 1.9 children ( $SD = 1.1$ , range 1-6)<sup>5</sup>. Mothers ranged in age from 22 to 43 ( $M_{age} = 30.5$ ,  $SD = 4.6$ ), and the target infants ranged in age from 12 to 18 months ( $M_{age} = 15.0$  months  $SD = 2.1$ ). Length of marriage of those mothers who had been currently married an average of 6 years ( $SD = 3.3$ , range 3 months to 15 years & 4 months). Sixty-nine percent of the women did not work outside the home; 20% had a family or friend care for their child; and 10% utilized daycare.

The fifty-two infants in this study were classified as secure, avoidant, ambivalent or disorganized using the strange situation procedures for coding (Ainsworth et al., 1978; Main & Solomon, 1990). Twenty-two or 42.3% of the infants were classified as secure (B), and 30 infants were found to be insecure (10 or 19.2% insecure-avoidant (A), 8 or 15.4 % insecure-ambivalent (C), and 12 or 23.1% insecure-disorganized (D).

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<sup>2</sup>Mothers who were not white were equally divided among Asian American (3%), Hispanic (2%) and “other” (3%).

<sup>3</sup> The remaining 10% of women were remarried (7%), separated (2%), or “other not specified” (2%). Percentages add to more than 100% due to rounding error.

<sup>4</sup>35% of the mothers held a graduate degree; 33% held a bachelor’s degree, 25% had some college; and 7% had only a High School diploma.

<sup>5</sup>44% of mothers had one child, 34% had two children and 22% had more than two children.

## **Procedures**

There are two parts to this study: Narrative story production by each mother and an observational assessment of the mother-infant dyad. The Attachment Script Assessment was administered to each mother at her home. Shortly after the narrative was completed each mother brought her infant to the lab and the dyad participated in the Ainsworth Strange Situation procedure.

**Narrative Story Production.** In the original data collection in order to assess each mother's accessibility and knowledge of her internalized secure base support i.e., her "secure base script," mothers were asked to produce six narrative stories from sets of prompt-word outlines that framed different story scenarios: four attachment scenarios (The Doctor's Office, Baby's Morning, The Accident, Jane and Bob's Camping Trip) and two neutral scenarios (Trip to Park, An Afternoon Shopping). The neutral story lines are included to provide some variety in story topics and are not scored. The attachment topics include two stories about mother-infant interaction and two about adult-adult interaction. Each prompt-word outline consists of a title prompt and twelve words that propose a story line and enough content to result in a story of approximately one-half to a full page length if written. Each story takes less than three minutes to produce. Each mother was asked to produce an oral narrative using the columns of words to frame a story, going from left to right. The prompt words are given as a guide. After reviewing each outline, the participant indicated that they were ready. Then a tape recorder was turned on and the generated passage recorded. Individual sessions range from 20-30 minutes. For this study the four attachment narratives were examined. See Appendix A for the four prompt-word outlines.

**The Ainsworth Strange Situation Procedure.** Developed over thirty-five years ago, the Ainsworth Strange Situation (Ainsworth, et al., 1978) has become one of the most validated and

widely used measures in developmental psychology. Mothers participate in this observational assessment procedure with their infants. The semi-structured laboratory procedure involves eight three-minute separation and reunion episodes. This includes the infant, the mother, and a friendly but unfamiliar female stranger. Mothers were given a description of the assessment procedure before the visit to the lab. Each mother also had an opportunity to discuss the procedure with the experimenters before the procedure began. The episodes are presented from least to most stressful and stopped before the 3-minute mark if the infant cries excessively. They are the following: 1) Mother, infant and friendly stranger enter the room; 2) stranger leaves the room and mother is given directions to let the infant explore and play alone; 3) A stranger enters the room, talks to the mother, and approaches the child; 4) the mother leaves the room; 5) The mother comes back and reunites with the child and the stranger leaves; 6) the mother leaves and the child is left alone; 7) The stranger then comes back and attempts to calm the child and 8) The mother returns for a second reunion and the stranger leaves. When the mother is out of the room she joins the experimenters and watches through the one-way mirror. After the episode when the infant is left alone, the visitor returns before the mother finally returns in order to ascertain if the distress is a reaction to being alone or the second separation as well as to see if separation is more upsetting for the infant than is a stranger's presence. The procedure was videotaped. The present study coded infant attachment classifications from the videotapes using the coding procedures of Ainsworth et al, (1978) and Main and Solomon, (1990). This investigation also coded maternal behavior during the Strange Situation from the videotapes using the Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE; Bronfman, Madigan & Lyons-Ruth, 2011). See Appendix B for Strange Situation Procedure.

## Measures

**Attachment Script Assessment Scoring.** The narratives were audiotaped, transcribed and grouped by story topic. Each story was scored by two independent coders who were blind to the other stories produced by the specific participant as well as to all other aspects of the study. Stories were coded for secure base script content and given an identification number. The attachment-related stories were coded using the seven point scale of secure base scriptedness developed by Waters and Rodrigues-Doolabh, (2001). The neutral stories were not examined in this study.

The measure of secure base support/scriptedness is based on a definition of what can be identified as a “secure” script” in each of the four attachment scenarios. Centered around Bowlby’s and Ainsworth’s definition of a “secure base” the secure script describes a sequence of events in which the caregiver (1)an infant and mother are constructively occupied, (2) the child encounters an obstacle or threat and becomes distressed, (3) there is a bid for help, (4) the bid for help is detected and the caregiver goes to the child, (5) the offer of help is accepted, (6) the help is effective in overcoming the difficulty, (7) the help includes effective comforting and affect regulation, (8) the child (perhaps with assistance from the caregiver) returns to constructive play (or comfortably makes a transition to another activity).

Narratives are scored on the 7 to 1 scriptedness scale. The highest ranked narratives contain extensive secure base content and a solid interpersonal framework. Stories receiving lower scores would have continually less secure base content and stories with extremely low scores would have unusual and atypical content, be event-focused stories that are inconsistent with a secure base script. Coders are presented with a description of how the secure base script is instantiated for that story line for each scenario. Appendix C presents brief descriptions of each scale point. More detailed script definitions are presented in Appendix D. The present study will incorporate the



original script assessment data from the Rafferty (2004) study. Rafferty (2004) and Rafferty, Corcoran and Waters (2012) established the convergent/discriminant validity of the Secure Base Script. Each maternal script score was created by averaging the four narrative scores. As per the original validation study (Tini, Corcoran, Rodrigues-Doolabh, & Waters, 2003) the rate of success of using attachment script scores to predict infant classifications was examined by using 4.0 and above as evidence of a secure base script and less than 4.0 as evidence of no secure base script.

**Infant Attachment Classification.** The Strange Situation infant attachment quality classifications were coded using both the Ainsworth et al., 1978 and the Main and Solomon (1985) coding systems. Ainsworth and colleagues' coding system examines four behavioral categories: proximity and contact seeking, contact maintaining behavior, resistant behavior, and avoidant behavior. The first two categories concentrate on positive behavior, whereas the second two concentrate on negative behavior. Based on these behavioral categories, a set of criteria has been established for judging a child as secure (Group B), insecure-avoidant (Group A), insecure-ambivalent (Group C). The original data for this study coded blindly by coder who was expert using the Ainsworth et al., (1978) system for coding secure, avoidant and ambivalent classifications. Coders viewed the videotapes of the Strange Situation, note the child's behavior, particularly during the reunion segments, and then give each child an overall classification based upon the criteria for the different groups. The current investigation another coding system with criteria for judging infants as disorganized (Group D) was also used to examine infant behavior. For this investigation, the videotapes were re-coded by Judith Solomon using the Main and Solomon, (1990) coding system. For a more detailed explanation of the coding see Appendices E and F.

**Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE).**

Mothers' behavior during the Strange Situation is coded using the Atypical Maternal Behavior

Instrument for Assessment and Classification (AMBIANCE) measure (Bronfman, Madigan, & Lyons-Ruth, 2011). Specifically, for this study coding was done on four episodes from videotaped strange situation laboratory procedure, 2, 3, 5 and 8. In episode 2 the observer exits the room and the mother and child adjust to their surroundings. During episode 3 the stranger enters, which activates the attachment system. In episode 5 the mother returns and stranger leaves the room and finally during episode 8 the mother returns to the room. Maternal behavior was coded on a continuous basis along five dimensions: affective communication errors (i.e. contradictory signaling to child and inappropriate responding to child cues), role boundary confusion (i.e. role reversal, treating child as sexual or spousal partner), frightening/disoriented behavior (i.e. appears confused or frightened by child, appears generally disorganized or disoriented), intrusiveness/negative behavior (i.e. physically intrusive or frightening, verbally intrusive or frightening, inappropriately attributes negative feelings or motivation to child, exerts control with objects), withdrawal (avoidant, creates physical distance from child, uses words to distance self from child or contradicts cues suggesting proximity seeking), and an overall level of disrupted communication score which is informed by these five dimensions plus an overall clinical impression. Several scores given for each protocol; a tally of the total number of atypical behaviors that are observed, an overall level of disrupted communication score based on a 7 point scale with 1 being high normal (the least atypical) to 7- disrupted communication with few or no ameliorating behaviors (the most atypical) and a parental classification, a bivariate classification of disrupted or not disrupted affective communication. The coder of the AMBIANCE measure in the present study was Elisa Bronfman, PhD, one of the principal authors of the scale. For a more detailed explanation and the complete coding manual see Appendix G.

## II. Results

### Hypothesis 1

It was hypothesized that there is a relation between mothers' attachment representations of secure base support as measured by the Attachment Script Assessment and infant attachment quality as classified in the Strange Situation. Based on the review of theoretical and empirical findings discussed above, it was expected that mothers of secure infants will have higher secure base script scores than mothers of insecure (ambivalent, avoidant, disorganized) infants. To test this hypothesis, a one-way analysis of variance (ANOVA) was conducted. Means and standard deviations of the maternal script scores by infant attachment classification can be seen in Table 1. Infant attachment classification was significantly related to the maternal secure base script scores. A more careful analysis using pairwise comparisons indicated that the mean script score of mothers of secure infants differed from the mean script score of mothers of each of the insecure groups. In addition, the mean script scores of the mothers of ambivalent infants differed from those of the mothers of the avoidant group at trend level.

Table 1. Maternal Secure Base Support/Script by Infant Attachment Classification Groups

Infant Attachment	Mean	Std. Deviation	N	F(3,48)
Secure (B)	5.08	.88	22	11.71
Avoidant (A)	3.21	1.15	10	
Ambivalent (C)	4.00	.72	8	
Disorganized (D)	3.79	.84	12	
Total	4.26	1.16	52	

*Note:*  $p < .001$

*Pairwise comparisons:* Secure vs. Avoidant  $p < .001$ ; Secure vs. Ambivalent  $p < .006$ ; Secure vs. Disorganized  $p < .001$ ; Ambivalent vs. Avoidant  $p < .08$

To assess agreement with respect to the distinction between secure versus insecure attachment between mothers' script scores and infant attachment quality, a dichotomized version of

each measure were submitted to a tabular and the degree of agreement between the two classification systems was assessed using Cohen's kappa (See Table 2).

Table 2. Maternal Secure Base Support/Scripts by Secure by Insecure Infant Attachment

		Infant Attachment		Total	
		Secure	Insecure		
Maternal Script Scores	4.0 – 7.0	Secure	19	11	30
	3.99 – 1.0	Insecure	3	19	22
Total			22	30	52

Note:  $\kappa = .47, p < .001$

Maternal secure base support was measured by the Attachment Script Assessment (ASA). Script scores of 1.00-3.99 indicate insecure maternal attachment; Script Scores of 4.00-7.00 indicate secure maternal attachment. Infant attachment was measured by utilizing the Strange Situation coding systems.

In addition, the frequency distribution of script scores across the four classifications i.e., secure, ambivalent, avoidant, disorganized was examined and can be seen in Table 3.

Table 3. Frequency Distribution Maternal Scripts by Infant Attachment Classification Groups

		Infant Attachment				Total	
		Secure	Avoidant	Ambivalent	Disorganized		
Maternal Script Scores	5.5 - 7.00	Secure	7	1	0	0	8
	4.00 - 5.4		12	1	4	5	22
	3.00 - 3.99	Insecure	3	2	4	5	14
	1.00 - 2.99		0	6	0	2	8
Total			22	10	8	12	52

Note: Maternal secure base support was measured by the Attachment Script Assessment. Script scores of 1.00-3.99 indicate insecure maternal attachment; Script Scores of 4.00-7.00 indicate secure maternal attachment. Infant attachment was measured by utilizing the Strange Situation coding systems.

There were a total of 38 hits (73%) and 14 misses (26%). As expected, most mothers who show evidence of having an attachment representation of a secure base script have an infant with secure attachment quality, while most mothers who show no evidence of having a secure base script have infants with insecure attachment quality. Of the mothers who had script scores in the high

secure range (5.5 to 7), all but one had secure children (88%, N=8). There were no ambivalent or disorganized infants of mothers with high secure base script scores. Thus it appears that mothers with high script scores have an extremely high likelihood of having a secure child. At the opposite end of the script distribution, are mothers who had particularly low scores within the no script range (2.9 to 1). All had insecure infants (N=8), (6 = avoidant, 2 = disorganized). There were no secure or ambivalent infants of mothers who exhibited no evidence of having a secure base script.

### **Hypothesis 2**

It was hypothesized that mothers' script scores would be inversely correlated with the AMBIANCE measure of maternal overall level of disrupted communication total score, as well as maternal affective communication errors subscale score. The predicted inverse correlation between maternal script scores and the AMBIANCE overall level of disrupted communication scores<sup>6</sup> and the predicted inverse correlation between maternal script scores and the AMBIANCE affective communication errors<sup>7</sup> were not found.

### **Hypothesis 3**

The third hypothesis considered both the secure versus insecure split as well as the organized (secure, avoidant, and ambivalent) versus disorganized split. It was hypothesized that mothers of insecure (avoidant, ambivalent and disorganized) infants will have higher AMBIANCE overall level of disrupted communication total scores than mothers of secure infants. In addition, it was hypothesized that mothers of organized infants would have lower AMBIANCE overall levels of disrupted communication total scores than mothers of disorganized infants. To test each of these

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<sup>6</sup> ( $r = .013, p = .924$ )

<sup>7</sup> ( $r = .060, p = .675$ )

hypotheses a one-way analysis of variance (ANOVA) was conducted. Infant attachment classification was found to be related to mothers' overall level of disrupted communication at trend level. A Planned Contrast was performed. The results were found not to be statistically significant.<sup>8</sup> More careful examination using pairwise comparisons found a different pattern of effects than what was expected. Mothers of infants with ambivalent attachment quality had significantly higher mean scores of overall level of disrupted communication than the mothers of the secure group; however, they also had significantly higher mean scores than the disorganized group (see Table 4).

Table 4. AMBIANCE Overall Level of Disrupted Communication by Infant Attachment Classification Groups

Infant Attachment	Mean	Std. Deviation	N	F(3,48)
Secure (B)	3.50	1.92	22	2.26
Avoidant (A)	3.80	1.93	10	
Ambivalent (C)	5.00	1.52	8	
Disorganized (D)	2.92	1.56	12	
Total	3.65	1.86	52	

Note:  $p = .093$

Pairwise comparisons: Ambivalent vs. Secure  $p < .05$ ; Ambivalent vs. Disorganized  $p < .02$

Again a planned contrast was performed in order to examine the overall level of disrupted communication across the organized versus disorganized split. A marginally significant result was found. However, of note is that this finding is the *opposite* of what was expected as in this sample the overall level of disrupted communication of the mothers of disorganized infants was found to trend towards being significantly *lower* than the mothers of the three organized groups (Table 5).

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<sup>8</sup> ( $F [1, 48] = 0.64, p = .43$ )

Table 5. AMBIANCE Overall Level of Disrupted Communication by Organized/ Disorganized Infant Attachment

Infant Attachment	Mean	N	F(1,48)
Organized	4.10	22	3.85
Disorganized	2.92	30	
Total	3.51	52	

Note:  $p = .056$

Hypothesis 3 also expected there would be a relation between mothers' affective communication errors as assessed with the AMBIANCE measure and infant attachment classification as coded in the Strange Situation. Specifically, mothers of avoidant, ambivalent and disorganized infants were expected to have higher affective communication error scores than mothers of secure infants. Again, both the secure versus insecure split and the organized (secure, avoidant, ambivalent) versus disorganized split were examined. A one-way analysis of variance (ANOVA) was conducted, the results of which can be seen in Table 6. Infant attachment classification was statistically significantly related to the maternal affective communication errors as measured with the AMBIANCE scale. A more careful examination using pairwise comparisons revealed that there are three statistically significant differences in mothers' affective communication errors across the four infant attachment groups. Specifically the affective communication error scores of mothers of ambivalent infants had a higher mean than mothers of infants within each of the other attachment classifications; (secure, avoidant, disorganized).

Table 6. AMBIANCE Affective Communication Errors by Infant Attachment Classification Groups

Infant Attachment	Mean	Std. Deviation	N	F(3,48)
Secure (B)	2.45	2.04	22	4.46
Avoidant (A)	2.50	1.90	10	
Ambivalent (C)	5.13	1.36	8	
Disorganized (D)	2.58	1.78	12	
Total	2.90	2.05	52	

Note:  $p < .01$

Pairwise comparisons: Ambivalent vs. Secure  $p < .001$ ; Ambivalent vs. Avoidant  $p < .01$ ; Ambivalent vs. Disorganized  $p < .01$

A planned contrast was performed. The results showed a trend towards significance and can be seen in Table 7.

Table 7. AMBIANCE Affective Communication Errors by Secure/Insecure Infant Attachment

Infant Attachment	Mean	N	F (1,48)
Secure	2.45	22	3.23
Insecure	3.40	30	
Total	2.93	52	

Note:  $p < .08$

A Planned Contrast examining the affective communication error scores of mothers of the infants with *organized* attachment vs. mothers of infants with *disorganized* attachment was not found to be significant.<sup>9</sup>

#### Hypothesis 4

The fourth hypothesis considered the proposed mediation model that maternal atypical and disrupted caregiving behavior mediates the impact of maternal representations of secure base support on infant attachment quality. A regression analysis would have been performed had maternal secure base script scores and maternal atypical caregiving behavior been found to be significantly correlated. These variables were not correlated. Therefore, in this sample, mothers' atypical and disrupted caregiving behaviors could not be tested as a mediator of the relationship between the proposed independent and dependent variables. Consequently, a regression analysis was not performed.

#### Supplemental Analyses

Supplemental Analyses were performed to more fully understand the findings regarding the relation between maternal behaviors and infant attachment quality. It was hypothesized that

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<sup>9</sup> ( $F [1, 48] = 1.52, p = .22$ )



mothers of securely attached infants would exhibit fewer atypical and disrupted caregiving behaviors in than mothers of avoidant, ambivalent and disorganized infants in each of these additional four categories of the AMBIANCE measure (Fearful/Disoriented Behavior, Intrusive/Negative Behavior, Withdrawal Behavior, Role Boundary Confusion) and that specific maternal caregiving behaviors would be associated with different insecure attachment strategies. The following analyses are all supplemental to Hypothesis 3.

### **Supplemental Analysis 1**

It was expected there would be a relation between mothers' fearful/disoriented behavior as assessed with the AMBIANCE measure and infant attachment classification as coded in the Strange Situation. Specifically, it was expected that mothers of disorganized infants would have the highest fearful/disoriented behavior scores. To test this hypothesis a one-way analysis of variance (ANOVA) was conducted. A relation between mothers' fearful /disrupted behavior and infant attachment quality was not found.<sup>10</sup>

### **Supplemental Analysis 2**

It was expected there would be a relation between mothers' intrusive/negative behavior as assessed with the AMBIANCE measure and infant attachment classification as coded in the Strange Situation. Specifically, mothers of avoidant, ambivalent and disorganized infants were expected to have higher intrusive/negative behavior scores than mothers of secure infants. A one-way analysis of variance (ANOVA) was conducted, the results of which can be seen in Table 8. Infant attachment classification was significantly related to maternal intrusive/negative behavior as measured with the AMBIANCE scale. A Planned Contrast was performed. The results were not

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<sup>10</sup> ( $F [3, 48] = .173, p = .914$ )

found to be statistically significant.<sup>11</sup> More careful examination using pairwise comparisons revealed three statistically significant differences in mothers' negative/intrusive behavior scores across the four infant attachment groups. Although the effects were the opposite of what was expected. Specifically, as seen in Table 8, the intrusive/negative behavior scores of mothers of secure infants versus mothers of disorganized infants show a trend towards a significant difference in the opposite of the expected direction with mothers of disorganized infants having the lowest mean scores for exhibiting intrusive/negative behaviors with their infants. The intrusive/negative behavior mean scores of mothers of ambivalent infants are significantly higher than those of mothers of disorganized infants. In addition, mothers of avoidant infants also have significantly higher intrusive/negative behavior scores than mothers of disorganized infants.

Table 8. AMBIANCE Intrusive/Negative Behaviors by Infant Attachment Classification Groups

Infant Attachment	Mean	Std. Deviation	N	F(3,48)
Secure (B)	2.32	1.52	22	3.137
Avoidant (A)	2.90	2.03	10	
Ambivalent (C)	3.25	1.75	8	
Disorganized (D)	1.33	.651	12	
Total	2.35	1.62	52	

Note:  $p < .05$

Pairwise comparisons: Secure vs. Disorganized,  $p < .08$ ; Ambivalent vs. Disorganized  $p < .01$ ; Avoidant vs. Disorganized  $p < .02$

### Supplemental Analysis 3

It was expected there would be a relation between mothers' withdrawal behavior as assessed with the AMBIANCE measure and infant attachment classification as coded in the Strange Situation. Specifically, mothers of avoidant, ambivalent and disorganized infants were expected to have higher withdrawal behavior scores than mothers of secure infants. To test each of these

<sup>11</sup> ( $F [3,48] = .173, p = .684$ )

hypotheses a one-way analysis of variance (ANOVA) was conducted. A relation between mothers' withdrawal behaviors and infant attachment quality was not found.<sup>12</sup> A Planned Contrast was performed. A relation between mothers' withdrawal behavior and attachment quality was not found<sup>13</sup>.

#### **Supplemental Analysis 4**

It was expected there would be a relation between mothers' role boundary confusion as assessed with the AMBIANCE measure and infant attachment classification as coded in the Strange Situation. Specifically, mothers of avoidant, ambivalent and disorganized infants were expected to exhibit more role boundary confusion than mothers of secure infants. A one-way analysis of variance (ANOVA) was conducted, the results of which can be seen in Table 9. Infant attachment classification was not found to be significantly related to maternal role boundary confusion. A Planned Contrast was performed. The results were not found to be statistically significant<sup>14</sup>. More careful examination using pairwise comparisons revealed that there are two differences trending towards significance and one statistically significant difference in mothers' role boundary confusion across the four attachment groups. Each is different than expected. Specifically, as seen in Table 9, the role boundary confusion of mothers of ambivalent infants versus mothers of secure infants as well as that of mothers of ambivalent infants versus mothers of avoidant infants is trending towards significance. The role boundary confusion of mothers of ambivalent infants is significantly higher than that of mothers of disorganized infants.

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<sup>12</sup> ( $F [3, 48] = .850, p = .473$ )

<sup>13</sup> ( $F [3, 48] = .850, p = .699$ )

<sup>14</sup> ( $F [3, 48] = 2.097, p = .766$ ).

Table 9. AMBIANCE Role Boundary Confusion by Infant Attachment Classification Groups

Infant Attachment	Mean	Std. Deviation	N	F(3,48)
Secure (B)	1.95	1.21	22	2.097
Avoidant (A)	1.80	.92	10	
Ambivalent (C)	2.88	1.96	8	
Disorganized (D)	1.50	.80	12	
Total	1.96	1.27	52	

Pairwise comparisons: Ambivalent vs. Secure  $p < .08$ ; Ambivalent vs. Avoidant,  $p < .08$ ;  
 Ambivalent vs. Disorganized  $p < .02$

### III. Discussion

#### Summary of Key Findings

##### Hypothesis 1

I predicted that mothers of secure infants will have higher secure base script scores than mothers of avoidant, ambivalent, and disorganized infants. I also predicted that mothers whose script scores were in the secure range would have secure infants and that mothers whose script scores fell below the secure range would have insecure infants; avoidant, ambivalent or disorganized. I found strong support for these hypotheses. The secure base script scores of mothers' of secure infants were significantly higher than the script scores of the mothers of each insecure group; avoidant, ambivalent, and disorganized. In addition, the script scores of mothers of ambivalent infants trended towards being significantly higher than the scores of the mothers of the avoidant group. The implication for this important finding as it tells us that there are differences in mothers' attachment representations and that they are likely discernible with the script assessment. Further research has the potential to identify mothers' attachment classifications through their scripts. In addition, script scores predicted infant attachment quality. Unpacking the differences through a closer examination of the frequency distribution shows several interesting findings. Of the infants with mothers having script scores in the highest of the secure range, all but one infant

(who had an avoidant attachment) were secure. There were no ambivalent or disorganized infants of mothers with *very high* (5.5-7) secure base script scores. These narratives were coherent, i.e., organized, believable and complete with most if not all of the elements of a full secure base script present. At the opposite end of the script distribution are mothers who have scores within the “low no script” range (1-2.9). Thus, mothers whose narratives had patterns that were not coherent i.e., that were event related, disjointed with odd or atypical content, with a story line directed away from the relationship and showing no evidence of an attachment script, have an extremely high likelihood of having an infant classified as avoidant. There were no infants classified as secure or ambivalent of mothers in this category. Two infants were categorized as disorganized.

Although a “hit” rate of 73% is considered highly significant, it does not explain the 27% “miss” rate. As the Attachment Script Assessment is a relatively new measure, it would be important to explore alternative approaches to scoring as it is possible that further examination would offer a way to establish better discriminant validity. For example, unlike the extremely high and low scores, the scores in the middle range within this measure fail to represent substantive differences between the attachment representations of mothers of secure, ambivalent, and disorganized infants. A closer examination showed some very interesting findings. Given the very small cell sizes in this sample a statistical analysis was not feasible. A visual inspection of the scores was undertaken instead. See Table 10 below.

Table 10. 4 Script Scores by Attachment Classification Groups

<b>4 Script Scores for Mothers of Secure Infants (B)</b>			
5.25	5.25	4	5
5.5	6.5	6	6.75
6.5	5	5.75	**xxx
6	5	4.75	5.25
7	7	6.75	7
6.5	7	4.25	7
4.5	5	3.5	3.75
4	2.75	3.25	5.5
3.75	4.75	2.25	4.5
5.5	5	5.75	6.25
4.5	3.25	6.75	4.5
6.25	5.25	5	4.5
5.25	4	4.75	5.25
5.5	4	5.25	6.75
2	3.5	5.5	1.5
5.75	5.75	4.5	4.75
5.75	5.75	4.5	6.25
4.75	6	5.75	6
6.25	5.5	4	5
3.25	5.75	4.25	5
4.5	5	5.25	6.5
3.5	3.25	5	5.25

<b>4 Script Scores for Mothers of Avoidant Infants (A)</b>			
3.75	1	2	3.75
2	2.5	2.5	**xxx
2	2	3.5	3.5
6	7	4	6.75
2.5	3	2.25	3.25
4.5	6.25	2.75	3.75
1.25	3	4.25	5
2.5	2.25	2.75	2.5
1.5	2	2	3
4.25	3	1.5	5

<b>4 Script Scores for Mothers of Ambivalent Infants (C)</b>			
5.75	4	3	4.25
2.75	3.25	3	3.5
3	4	4	4.75
6.75	3.75	3.25	4
4	3	3	5.75
2.75	3.25	**xxx	**xxx
2.25	2.5	6.5	5
3.5	6.5	5.5	5.5

<b>4 Script Scores for Mothers of Disorganized Infants (D)</b>			
3.5	2.75	3.25	**xxx
5	5	3.75	4.5
5.25	5	2.75	5
4	2.5	4.25	2
5.25	2.75	2.25	4.25
4.25	3.5	3.5	5
3.75	5	6.5	5
2	2.5	3.25	1.75
2.75	4	3.75	2.75
5.25	5	3.5	5.5
4	4.75	1.5	1.25
4.75	1.5	3.75	5.5

Of interest are the four separate narrative script scores of each mother within each group according to the four infant attachment classifications. As previously mentioned each script score used in this study is the average script score of the four attachment narratives that each mother produced. This approach may be obscuring a much more nuanced approach to identifying mothers attachment quality. A closer visual inspection of the scores across each mother's four narrative stories of the "high secure" group revealed that there is very little variability in the range of the scores. As explained, when a mother produced four narrative stories that contained most if not all of the eight components of the script, then all her scores were coded in the high secure range (5.5 to

7.0) and her infant was found to be secure. All of her four scores fell consistently in the “high secure” range. In contrast, when a mother produced four narratives that had no script, were odd, disjointed and arelational, her four scores were consistently in the ‘low no script’ (1.0 to 2.9) range and she most always had an avoidant child.

Further inspection of the four script scores of mothers in the middle range (4.0 to 5.4) between the high secure and low insecure mothers revealed an intriguing finding. If an infant was classified as secure and his mother’s script scores were between 4 and 5.4, it was likely that each of her narrative stories contained a *consistent* amount of script knowledge and that the range of her four narrative scores had little variability. In other words, it appears that having four scripts with a *consistent* amount of secure base support—even with only a few elements of a full secure base script—relatively little scriptedness—scoring in the low secure range may be “good enough” to have an infant with a secure attachment.

Alternatively, a visual examination of the four script scores of the mothers of ambivalent infants revealed a different pattern. In this group, almost all of the mothers produced one narrative of the four that scored in the “high”- high secure range (5.5 to 7.0), while at least one of the other three scores was much lower with one narrative of the three falling in the no script range, with the spread between the two scores ranging from 2.75 to 4.25 points. This finding provides a foundation for further study as it suggests that the experience of the infant classified as ambivalently attached might be related to some confusion about what to expect, because (according to mother’s narratives) sometimes mom’s responsiveness is unusually attuned and she gets it “so right,” yet at other times she does not get it right at all. This is in keeping with the theory that ambivalent infants’ attachment systems get activated and they seem to stay activated with little ability to settle (George & Solomon, 1996). Hope springs eternal!



Another pattern emerges with visual examination of the four script scores of the mothers of avoidant infants whose narratives are most often scored in the low no script range. (1.0 to 2.9) and have additional scores that are still in the no script range (under 3.9). The narratives of the mothers of these infants for the most part are odd, disjointed and arelational. They most often have no scores in the “secure” range. The lack of scriptedness of a mother of an avoidant infant is reflected in his avoidant attachment pattern. A strong implication from the finding is that the way that mothers produce a series of narratives may both identify mothers’ attachment category as well as predict infant attachment in a very nuanced way. This finding strongly supports that there are differences in the secure base representations of mothers of infants with different attachment categories. A limitation of this study and this instrument as it had been traditionally coded is that we are unable to identify what is different about each representation. This limits the usefulness of the tool. Examining the 4 scores across mothers’ narratives by infant attachment quality may enable the development of a scoring system that will lead to the identification of a mother’s attachment category that will be easy to use for future research and practice. Additional research will be needed to validate such a system. Exploring additional approaches for scoring the Attachment Script Assessment is an important area for future research. As a clear limitation of this study is the current scoring system’s inability to discriminate between the attachment representations of mothers of infants with secure, ambivalent and disorganized attachments whose script scores fall in the middle range of the scoring system (3.0- 5.4).

An additional question regarding this data is related to the unusual distribution of the secure versus the insecure babies. Typically, a 60- 40% split between secure and insecure infants is expected in a community sample. However, in this sample there were 22 secure infants and 30 insecure infants. As a result questions are raised regarding why this sample is different than

expected. One might question the validity of the coding, but in this sample the coding of infant attachment quality was done by coders who are themselves the gold standard against which others are validated. It is possible that inadvertently in the recruitment process for the study materials were worded in such a way as to potentially skew the sample. Given that this is a secondary data analysis it would be important to examine the original flyers and advertisements to identify something that might have been overlooked for future research.

### **Hypothesis 2 and 2a**

I predicted there would be an inverse correlation between mothers' script scores and mothers' overall level of disrupted behavior as well as mother's affective communication error scores. I found no support for either of these predictions. There are no previous studies that examined the association between the script assessment and the AMBIANCE measures. I made this prediction based on the Waters and Rodrigues (2001) study that found a close association between the Attachment Script Assessment and the AAI coherence scores. In addition, previous investigations found mothers identified as secure with the AAI had low AMBIANCE scores and were highly unlikely to exhibit disrupted behaviors with their infants (Grienberger et al., 2005; Slade et al., 2005). Given the strong relation between the script scores and attachment classification, as well as the AMBIANCE measure and attachment classification, it would seem a curious finding that the predicted negative correlations were not observed. Previous studies that found an inverse correlation between attachment representations and maternal caregiving behavior indicated that mothers of disorganized infants exhibited the highest rate of disrupted behavior among the insecure groups and described a continuum of disrupted behavior that was highest for the mothers of disorganized infants and lowest for those of secure infants (Grienberger et al., 2005; Slade et al., 2005). However, in my sample this was not true. I found that the mothers of

disorganized infants exhibited significantly less atypical behavior than the mothers of the ambivalent and avoidant infants and for some behaviors less than secure mothers as well. Perhaps this result is related to differences between the sample I used and the samples used to develop and test the AMBIANCE coding system. My sample is a fairly homogenous community sample of reasonably young, mostly married, middle-class, mother-infant dyads, while the AMBIANCE validation study sample was a high-risk sample clinical sample.

It is also possible that this finding was the result of errors in coding of either the disorganized infants or the AMBIANCE coding, although this is unlikely as each coder for this study's measures is the gold standard by which all coding is currently validated. It is also possible that the Attachment Script Assessment's inability to discriminate between the attachment representations of mothers of infants with secure, ambivalent and disorganized attachments whose script scores fell in the middle range of the scoring system contributed to the lack of correlation with maternal disrupted caregiving behaviors.

### **Hypotheses 3, 3a, 3b, 3c and Supplemental Analyses**

There were a number of predictions made for hypothesis 3. Each pertains to a specific maternal atypical caregiving behavior and its relation to infant attachment quality. My initial predications pertained to mother's overall level of disrupted communication and mothers' affective communication errors in their interactions with their infants. The additional maternal behaviors measured by the AMBIANCE scale were then examined in order to parse apart the role of specific maternal behaviors and their relation to infant attachment quality in order to gain a clearer understanding of the findings and their implications. The additional maternal behaviors examined in supplemental analyses are: frightened/disoriented behavior; intrusive/negative behavior; withdrawal and role/boundary confusion.

### **Hypothesis 3 Mothers' Overall Level of Disrupted Communication**

I predicted that mothers of avoidant, ambivalent, or disorganized infants would display higher overall levels of disrupted communication in their interactions with their infants than mothers of secure infants. I found support for my prediction that mothers of ambivalent infants exhibited more disrupted communication in their interactions with their infants than mothers of secure infants. I found no support for my prediction that mothers of avoidant and disorganized infants would display higher overall levels of disrupted communication in their interactions with their infants than mothers of secure infants. A contradictory and unexpected finding was that mothers of ambivalent infants also displayed more disrupted communication in their interactions with their infants than mothers of disorganized infants.

### **Hypothesis 3a – Overall Level of Disrupted Communication: Organized vs. Disorganized**

I predicted that mothers of organized infants (secure, avoidant, ambivalent) would display lower overall levels of disrupted communication with their infants than mothers of disorganized infants. I found no support for this prediction. The overall level of disrupted communication exhibited by the mothers in their interactions with their disorganized infants trended toward being *lower* than that of mothers of infants in the organized group. This was the opposite of my prediction as well as contradictory to the previous literature. It is likely that this result of my sample a mostly middle class, homogenous low-risk sample that is different from the high-risk clinical samples examined in previous studies.

### **Hypothesis 3b – Mothers' Affective Communication Errors**

I predicted that mothers of avoidant, ambivalent and disorganized infants would display significantly more affective communication errors in their interactions with their infants than mothers of secure infants. I found support for my prediction that mothers of ambivalent infants

exhibited more affective communication errors in their interactions with their infants than the mothers of secure infants. I found no support for the prediction that mothers of avoidant and disorganized infants would display more affective communication errors with their infants than mothers of secure infants. Unexpected and contrary to my predictions, mothers of ambivalent infants also exhibited more affective communication errors in their interactions with their infants than mothers of avoidant infants and mothers of disorganized infants.

### **Hypothesis 3c – Mothers’ Affective Communication Errors; Organized vs. Disorganized**

I predicted that mothers of infants with organized attachments would exhibit fewer affective communication errors than mothers of disorganized infants. I found no support for my prediction. Again, this is likely the result of the difference in my sample from previous samples.

### **Supplemental Analysis 1 – Fearful/Disoriented Behavior**

I predicted that mothers of disorganized infants would have higher levels of fearful/disoriented behavior scores than mothers of secure, avoidant, or ambivalent infants. I found no support for this prediction.

### **Supplemental Analysis 2 – Intrusive/Negative Behavior**

I predicted that mothers of avoidant, ambivalent and disorganized infants would exhibit more intrusive/negative behavior in their interactions with their infants than mothers of secure infants. I found no support for this prediction and in fact one of the findings is the opposite of my prediction. A trend was found with the mothers’ of secure infants exhibiting more intrusive/negative behavior in their interactions with their infants than mothers of disorganized infants. Also unexpected and contradictory to my prediction is that mothers of ambivalent infants exhibit more intrusive/negative behavior in their interactions with their infants than mothers of

disorganized infants. Similarly, mothers of avoidant infants also exhibit significantly more intrusive/negative interactions with their infants than mothers of disorganized infants.

### **Supplemental Analysis 3 – Withdrawal Behavior**

I predicted that mothers of avoidant, ambivalent and disorganized infants would exhibit more withdrawal behavior with their infants than mothers of secure infants. I found no support for this prediction.

### **Supplemental Analysis 4 – Role Boundary Confusion**

I predicted that mothers of avoidant, ambivalent and disorganized infants would exhibit more role boundary confusion in their interactions with their infants than mothers of secure infants. I found some support for this prediction as the role boundary confusion exhibited by mothers of ambivalent infants in their interactions with their infants trended towards being more than that of mothers of secure infants exhibited. I found no support for the prediction that the role boundary confusion of mothers of avoidant and disorganized infants is greater than that of the mothers of secure infants. Also, unexpectedly and different than my predictions I found that the role boundary confusion of mothers of ambivalent infants trended towards being greater than the role boundary confusion of mothers of avoidant infants. The role boundary confusion exhibited by mothers of ambivalent infants in their interactions with their infants was significantly higher than that exhibited by mothers of disorganized infants.

### **Hypotheses 3 – Further Discussion**

What does this say about the mothers in this sample regarding their ability to soothe and regulate their infants when they are distressed— and their infant’s attachment quality? To begin, this study’s sample of disorganized infants do not have mothers who exhibit higher levels of atypical or disrupted behavior than mothers of infants in the other three attachment groups. In fact,

these mothers of disorganized infants exhibited significantly less atypical behavior than the mothers of the ambivalent infants with regards to every type of caregiving behavior examined. They also exhibited less negative/intrusive behavior than both the mothers of avoidant infants and mothers of secure infants. In addition, the mothers of disorganized infants exhibited less role boundary confusion than avoidant and secure mothers. Like van IJzendoorn, Bakermans-Kranenburg and Blom (1998) this examination found that all mothers engage in some frightening/disoriented behavior while no significant differences were found in the behavior of mothers between the attachment groups. This same is true of mothers' withdrawal behaviors. Regarding this group of disorganized infants and their mothers this investigation raises questions about the effect on the developmental pathway of an infant when a mother exhibits so little atypical behavior. This is a puzzle and the finding contradicts much of the current literature. As suggested previously, it is likely that the behavior exhibited by the mothers participating in this study, constituting a non-clinical community sample, was very different from the behavior of the clinical samples most often examined with the AMBIANCE measure. Still, this result raises important questions that might be answered through future investigations. It is possible that the pathway to disorganization for non-high-risk infant-mother dyads differs from that of high-risk clinical dyads. Clearly more investigations are needed to compare these two groups. Another possibility is that the pathway to disorganization for infants in high-risk and non-high-risk dyads is the same, but obscured by the level of disrupted behavior and dysregulation found in higher-risk disorganized dyads.

Perhaps disorganization is related in some way to the absence or lack of a certain amount of attuned maternal behaviors. Something missing in the literature is some clear evidence regarding what constitutes typical or even optimal levels of disrupted behaviors necessary for secure attachment to occur? How little of a disrupted behavior is too little for an infant to begin to develop

healthy coping capacities (Tronick, 2007). Tronick (2007) speaks of the importance of rupture and repair in the dyad in order for an infant to develop confidence in his ability to manage feelings and cope. Further investigation of secure and disorganized infants and their mothers from similar and diverse samples ought to aim to answer these questions.

Next, the mothers' of ambivalent infants in this study exhibited more atypical and disrupted caregiving behaviors with their infants than mothers of disorganized infants across several types of behavior. These include mother's overall level of disrupted communication, affective communication errors, intrusive/negative behaviors and role boundary confusion. These mothers also exhibited more overall disrupted communication, affective communication errors, and role boundary confusion than mothers of secure infants as well as more affective communication errors and role boundary confusion than mothers of avoidant infants exhibited in their interactions with their infants.

Identifying this range of atypical and disrupted maternal behaviors associated with ambivalently attached infants provides a window into the infant's experience. Perhaps these findings can be understood – *at least in part*– as the following; infants with ambivalent attachment patterns have mothers who provide contradictory cues and who do not soothe them when they are distressed. Therefore, the ambivalent behavior pattern of these infants can be understood as a reflection of the infants' expectations of profound maternal inconsistency in responsiveness (Lyons-Ruth et al., 1999). What is striking is the large repertoire of disrupted maternal behaviors associated with mothers of ambivalently attached infants. Yet- these infants do not give up trying on attempting to get their attachment needs met by their mothers- why might that be?

In addition, with regards to hypothesis 3 mothers of avoidant infants exhibited more intrusive/negative behaviors with their infants than mothers of disorganized infants. This is an



interesting finding. These findings may be seen as the following; infants with avoidant attachment patterns have mothers who are intrusive and negative thus missing cues—who do not soothe them when they are distressed. Therefore, the avoidant behavior pattern of these infants can be understood as a reflection of the infants' expectations of being disrupted, intruded upon and not responded to when needed. It is as if the infant is communicating the following, “I will take care of myself as being in relation with you (mom) is unsettling, dysregulating and feels out of control. I will manage myself and that way I will have control- I will dodge encounters with you and I will be less dysregulated.” This is an interesting finding as it may be the beginning of developing an understanding of an important maternal behavior that is associated with avoidant attachment in infants. This idea is in keeping with previous research that identifies a “chase and dodge” pattern between some mothers and their very young infants (Beebe, 2003).

The differences in the attachment patterns found between ambivalent infants and avoidant infants raises important questions: Why is it that the ambivalent infant still tries to engage with his mother and the avoidant infant does not? This study tells us that mothers of ambivalent infants get it wrong in a lot more ways than mothers of avoidant infants- so why do ambivalent infants keep trying to get their attachment needs met by their mothers? Perhaps the answer will be found in what is learned about mothers through the attachment script assessment. The information garnered through the script assessment that mothers of ambivalent infants- at least in their minds- get it very right every once in a while with their infant might be the reason that ambivalent infants keep trying in the relationship, while avoidant infants turn away from using their mother as a secure base. More fully examining these pathways is an important area for continued research.

The findings of the present study with respect to the mothers of both ambivalent and avoidant infants, support Bowlby's (1980) theory of the development of insecure attachment. He

suggested insecure attachments are the result of “defensive exclusion” of attachment that occurs when an infant’s attachment system and the associated feelings are intense and chronically activated but not assuaged by his caregiver. Bowlby viewed this as an ‘assault to the attachment system” with the overwhelmed infant as subject to behavioral, cognitive and affective breakdown (Solomon & George, 1999). Affective breakdown then results in insecure attachments (avoidant, ambivalent and disorganized).

A further examination of the related empirical literature reveals a dearth of findings that support or can be compared to those of the present study. However, it is important to note that similar studies each had their own idiosyncratic challenges. Grienberger et al., (2005) reported strong associations between high overall level of disrupted communication scores and infant attachment quality for both the ambivalent and disorganized groups. These authors found that the AMBIANCE measure did not discriminate between ambivalent and disorganized infants. This was not a problem in this study. As previously mentioned, the Slade et al. (2005) study (n=45) included only four ambivalent infants, while the Lyons-Ruth et al., (1999) study (n=65) did not include any infants classified as ambivalent.

As previously mentioned, the increase in studies examining the relation between maternal disrupted behavior and disorganized attachment has occurred as a result of the strong desire to develop better interventions quickly. Investigations with this focus are excluding mother-infant pairs with avoidant or ambivalent infants (Carlson, 1998; Lyons-Ruth, Alpern & Repacholi, 1993; Solomon, George & Dejong, 1995).

This study suggests possible new uses for the AMBIANCE scale for future research. Specifically, using the AMBIANCE measure to investigate causal pathways related to mothers and infants across all attachment classifications may provide important new information about the

mechanisms involved in the intergenerational transmission of attachment quality. Personal conversation with the authors of the AMBIANCE measure (Bronfman & Lyons- Ruth, personal communication, June 2013) indicates that other investigators may have similar findings; however, none of these results have been published to date.

#### **Hypothesis 4**

I predicted that maternal atypical and disrupted caregiving behavior would mediate the impact of mothers' secure base scripts on infant attachment quality. To test this prediction a regression analysis would have been performed. However, maternal secure base script scores were not found to be significantly correlated with either maternal overall level of disrupted communication or maternal affective communication errors as predicted. Therefore, a regression analysis was not performed.

Several researchers have been hopeful that examining the impact of maternal disrupted caregiving behaviors on infant attachment would be more fruitful than studies of maternal sensitive and responsive caregiving. Goldberg, Benoit, Blokland and Madigan (2003) found a strong association between maternal atypical caregiving behaviors, maternal attachment representations and infant attachment quality; however, when maternal atypical behavior was tested as a mediator through regression analysis, no additional percentage of the variance was explained.

As previously mentioned a limitation of the study may be the result of the current coding system of Attachment Script Assessment. A disadvantage of this measure is its inability to discriminate between the attachment representations of mothers of infants with secure, ambivalent and disorganized attachments who script scores fell in the middle range of the scoring system. It is possible that this lack of discriminant validity is the reason that this scale did not correlate with

maternal disrupted caregiving behavior. Exploring additional approaches for scoring would be an important area of future research.

The results of this study may also have been limited by the instrument used to measure maternal disrupted caregiving behavior. The AMBIANCE measure was originally designed to identify maternal disrupted caregiving behaviors that are associated with disorganized attachment in infancy in high-risk clinical populations. The disorganized infants in this study were from a low-risk community sample and according to this instrument; their mothers exhibited very little atypical and disrupted caregiving behavior. At the same time, the instrument was able to strongly identify a relationship between mothers' caregiving behavior and the ambivalently attached infants in this low-risk sample. Both of these findings are curious and are areas for future exploration particularly in order to gain a better understanding of the mechanisms and casual pathways of the intergenerational transmission of attachment across all attachment classifications.

## CHAPTER IV

### Implications for Social Work Practice and Social Work Policy

#### Implications for Social Work Practice

Social workers have historically been leaders in providing theoretically and empirically innovative models of intervention to address family relationship problems including the mother-infant relationship and the sequelae of child maltreatment. As early as the 1970s, social worker, Selma Fraiberg pioneered an extraordinary intervention approach to strengthen the well-being and development of young children which is currently widely used for children aged birth to five years old and their caregivers. Building on Bowlby's (1969) seminal work on attachment Fraiberg posited that the development of infants and young children occurs within a relational context that the primary relationship of interest is the mother-infant dyad. Fraiberg's insight and pioneering work resulted in the development of a multifaceted dyadic intervention called Child-Parent Psychotherapy (CPP) as well as the creation of the field of Infant Mental Health (IMH) practice.

Fraiberg recognized the importance of the dyad when attempting to identify and heal inadequate or disrupted attachment relationships (Fraiberg, Shapiro & Adelson, 1975; Weatherston, 2000). Within the scope of the Fraiberg paradigm, and for the first time, high risk mother-infant dyads were seen together and their relationships were assessed for early identification of risk as well as for treatment to reduce the likelihood of continued relationship disturbance and serious developmental failure. This dyadic intervention approach, in consort with the contributions of John Bowlby (1969) and Mary Ainsworth and her colleagues (1978), are the driving influences for this study as well as current intervention research and clinical practice that aim to better understand the attachment relationship between mothers and their very young children and effectively intervene.

These areas of knowledge continue to evolve as more is learned about the impact of early relational impairments on the development of very young children. Some progress has been made in understanding the epidemiology of impairments in early mother-infant relationships in the last two decades. Still considerable barriers continue to plague clinicians and intervention researchers relative to ascertaining the scope of the antecedents leading to impaired attachment relationships as well as the effectiveness of therapeutic approaches for intervention.

This study was designed to contribute to the body of knowledge for assessing and intervening with caregiver-infant dyads. It is most always the goal of dyadic treatment for a mother to become a more sensitive and responsive caregiver through the development of a better understanding of her past, herself and the needs, desires and behavior of her young child. Ultimately she will be better able to soothe and regulate her child, as she will be better able to keep herself from becoming dysregulated in response to her child's attachment needs. The hope is that through effective intervention she will become a better secure base for her infant and he will in turn become a more competent secure base user; the young child will not need to employ defensive maneuvers that lead to less than secure attachments (avoidant, ambivalent, disorganized).

What is missing from social work practice is the ability to accurately assess the attachment quality of mothers with a method that is reliable, not costly or time consuming, and is easy to administer and score. The ability to assess a mother's effectiveness at being a secure base would have great utility for social work intervention research, and social work practice with parents and young families. Social work practitioners work with 80 % of the high-risk families receiving services. The ability for them to be able to assess a mother's or father's attachment quality is essential for treatment planning, the development of effective interventions and the implementation and evaluation of their effectiveness.

The attachment script assessment has the potential to be that critical tool. Because this study found a strong link between the script assessment and the four attachment categories, it makes sense to continue to explore additional methods of scoring and identification of specific attachment representations of mother's scripts in order to be able to identify their attachment quality. The script assessment could also be used as a pre and post-test of the effectiveness of intervening. It would be expected that if a mother was able to improve her capacity to act as a secure base and safe haven for her child that the patterns in her narrative stories would change. Future research might identify what might constitute improvement. Perhaps mothers' scripts would either contain more elements of the script and/or they may have more consistent elements across each of the four narrative stories post-intervention. If the Attachment Script Assessment can be refined and used for that purpose, it will be useful, not just for attachment-based dyadic interventions for mothers and their young children, but for all interventions that aim to improve relationships. This is would be true for much of social work practice, whether indirectly in dyadic work with parents and their young children, with adolescents and individual adults or in programs such as the Circle of Security (COS; Marvin, Cooper, Hoffman & Powell, 2002), or other programs that focus on parent education or developmental guidance.

The results of this study regarding the AMBIANCE measure also have implications for social work practice. Maternal atypical and disrupted behaviors are often identified as risk factors to the social and emotional well-being of a very young child. Some of the dyadic intervention approaches that target these behaviors for change are Child-Parent Psychotherapy, Video Interaction Guidance and Minding the Baby (McDonough, 2000b; Slade, 2002; Van Horn and Lieberman, 2006). Understanding more about the relation between particular behaviors that are related to the development of specific infant attachment quality could strengthen dyadic work and

particularly the social work practitioners' ability to measure progress and change in an objective way. The strong relation between the range of mothers' atypical and disrupted caregiving behaviors and ambivalent infant attachment (particularly in the sample in this study) raises the issue of the potential for ambivalently attached infants to be at higher risk for relational impairments and developmental problems than was previously thought. This is a critical area for further study.

The finding of the associations between the range of behaviors exhibited by the mothers of ambivalent infants, the relation between avoidant attachment and mothers' intrusive negative behaviors and the peculiar but interesting lack of disrupted behaviors exhibited by mothers of infants with the range of insecure attachment may increase our understanding of specific maternal behaviors that are involved in the transmission of attachment. The finding that mothers of disorganized infants in this sample exhibited less intrusive/negative behavior and role boundary confusion than mothers of secure infants is a curious finding and may lead to a different understanding of the path to disorganization.

In sum, the findings of this study are preliminary and could contribute to increasing practitioners' ability to provide more comprehensive assessment and intervention for early relational impairments in the mother-infant dyadic relationship, as well as to contribute to overall evaluations of program effectiveness. The ultimate goal of many early intervention approaches is to change the attachment representations of mothers and the attachment classification of their very young children. The findings in this study may open new doors to further this goal as well as to better equip social work practitioners to provide the best possible evidence-based interventions and to be able to objectively evaluate the effectiveness of their work.

This type of success is explained beautifully through the voice of a mother for whom Jeree Pawl (1995) was the dyadic therapist. The mother said, "You can be raised over, no matter how old



you are. You...taught me how to love. You taught me how to speak – speak softly – with a big voice. You taught me how to care, and those were things that weren't inside of me” (p.5). The results of this study may open a new pathway to be able to confirm what it is that really changed “inside” this beautifully articulate mother quoted above.

### **Implications for Social Work Policy**

Research that helps create a better understanding of the intergenerational transmission of attachment quality, as well as that leads to the development of measurement tools that will help assess change both within the individual, the dyad, and program effectiveness overall have vast implications for social work policy. When very young children do not experience positive nurturing caregiving, they lose critical social, emotional, and intellectual skills, including the ability to trust, empathize, regulate their emotions and behaviors, explore, play and develop cognitive capacities. (Shonkoff, 2010; Shonkoff and Phillips, 2000). The lasting impact of these developmental disruptions is not limited to the individual child. When early relational impairments are not addressed the impact on the mental and physical well-being of infants and very young children is enormous and has life-long consequences for the child, his family, school, community, and society. Policies that uniquely recognize and respect the important role of parents and others who are in charge of the care of young children are critical for each child's long-term success. Infant Mental Health policy which includes specialized screening, assessment and a range of prevention and intervention approaches such as dyadic treatment, family support, developmentally informed judicial and child welfare decision making, early care and education curricula and paid family leave policies that have a strong social-emotional component are essential for healthy the development of 0-5 year olds.

The further development and refinement of research tools such as the Attachment Script Assessment and the AMBIANCE measure that evaluate the relationship quality between mothers and their infants can potentially be administrated pre- and post- intervention to demonstrate program effectiveness. The ability to demonstrate changes in the early dyadic relationships of mothers and infants and to show developmental, social and emotional gains for children, their parents, stability in their families, and even broader context such as schools, or their child welfare involvement is critical to promote shifts in policy that reflect up-to-date science that confirms long accepted clinical wisdom. This evidence will in turn encourage the development of policies that support intervention that has been shown to have complex benefits; one of which has been fiscal advantage.

According to Nagel (2009) the economic analyses of three separate early intervention programs focusing on mothers and infants suggest that after 27 years, adults who participated in the programs as children showed significantly less utilization of the welfare system as well as reductions in the incidence and severity of criminal activity. The same sample also had higher high school graduation rates, employment rates, and increased earnings. The control group had five times the level of involvement in criminal activity. Follow-up studies examining three separate infant mental health programs estimate the net benefit to the community per family who participated in the programs to be between \$13,000 and \$100,000 over the course of an individual's lifetime. Clearly, policies that embrace the importance of focusing resources to support the development of infants and very young children in the context of their earliest relationship make sense for the development of the infant, his family, community and society.

Working with mothers-infant dyads is very important work and there are mountains of research that are clear that supporting the development of healthy relationships between mothers

and their very young children will prevent developmental problems in children, help families exit the child welfare system, or cope with serious trauma. Although an obvious good investment, the impediments are great in developing a sound public policy and even greater for its implementation. In our current political environment, it is too easy for policy makers to ignore this need on their watch, as the proof of success will happen on someone else's. The baby receiving services with his adolescent mother will become the adolescent who does not have a baby and finishes high school (but not for 15 years). Policy supporting funding for the training of social workers, infant mental health specialists and other interdisciplinary professionals is essential in order to continue to build capacity to support families through strong and effective prevention and intervention programs. Research is available that demonstrates that interdisciplinary professionals trained to understand attachment, brain development and child development make better decisions about children's lives and those children have better outcomes. Research that adds to this fund of knowledge will strengthen the social work profession and in turn young and developing families. Sound public policy needs to be informed by this research and implemented (Lederman & Osofsky, 2004).

## **Conclusion**

Since John Bowlby (1958) began to theorize about development in a relational context, mothers' attachment representations and caregiving behavior were thought to work together to impact infant psychological development. As such, researchers and practitioners have continually created more innovative tools and approaches to find answers to explain the important and nuanced mechanisms in order to more fully understand the intergenerational transmission of attachment.

This investigation provides additional support for the notion that a mother's attachment representation of her secure base support is represented in her mind as a Secure Base Script. Designed to measure the completeness, consistency and accessibility of mothers' internalized

secure base scripts, this study demonstrated the Attachment Script Assessment utility in predicting infant attachment quality across all four attachment categories. These findings point to the value of further investigation regarding the Attachment Script Assessment's potential usefulness to increase our understanding of the transmission process as well as an assessment and evaluation tool. The findings of this study with regards to mothers' caregiving behavior as measured by the AMBIANCE measure were interesting and have raised more questions than were answered.

Both maternal attachment representations as measured by the Attachment Script Assessment and maternal atypical caregiving behaviors as measured by the AMBIANCE measure will continue to be important contributors to our ability to parse apart the contributing factors to the development of infant attachment quality. This preliminary investigation has demonstrated the importance of continued pursuit of this line of research as the field of attachment research continues to work towards a more complete explanation of the underlying mechanisms and causal pathways contributing to development.

## APPENDICES

### Appendix A

#### Mother-Child Attachment Narrative Word Prompt Outlines

##### *Baby's Morning*

Mother	Hug	Teddy Bear
Baby	Smile	Lost
Play	Story	Found
Blanket	Pretend	Nap

##### *The Doctor's Office*

Tommy	Hurry	Mother
Bike	Doctor	Toy
Hurt	Cry	Stop
Mother	Shot	Hold

#### Adult-Adult Attachment Narrative Word Prompts

##### *Jane and Bob's Camping Trip*

Jane	Tent	Campfire
Bob	Wind	Shadow
Bags	Collapse	Sounds
Hurry	Upset	Hug

##### *The Accident*

Sue	Wait	Home
Road	Mike	Dinner
Accident	Tears	Bed
Hospital	Doctor	Hug

## **Appendix B**

# **The Ainsworth Strange Situation Procedure**

## **E. Waters August, 2002**

Since its development over 30 years ago (Ainsworth, Blehar, Waters, & Wall, 1978), the Ainsworth Attachment Assessment (S/S) procedure has become one of the most widely used and well validated measures in developmental psychology. The procedure mimics daily experiences in which an infant explores a room with novel toys and is briefly separated and then reunited with one of its primary caregivers.

The S/S consists of eight 1-3 minute episodes presented in a standard order for all subjects, with those expected to be least stressful occurring first. After a brief introductory episode, the baby is observed with his mother in the unfamiliar, but not otherwise threatening, environment of the experimental room, to see how readily (s)he would move farther away from her to explore a novel assembly of toys. While the mother is still present, a visitor enters, sits quietly for one minute and then makes a very gradual approach to the baby. After the infant and visitor play for one minute, the mother says “bye-bye” and leaves for up to three minutes. During her absence, she joins the experimenters and observes the infant through a one-way window. After three minutes (less if the infant cries) the mother returns and the visitor slips out. The mother is instructed to comfort the infant and encourage renewed exploration and play. Then follows a second separation; this time the baby is left alone in the unfamiliar environment. The visitor returns (as some check on whether any increased distress was a response to being alone rather than to have been separated a second time) and then the mother returns.

Although early work on parent-child relationships focussed on separation behavior as an index of relationship characteristics, work with the S/S has demonstrated that the infant’s behavior in the reunion episodes is the only valid indicator of its ability to use the caregiver as a secure base from which to explore in non-laboratory settings.

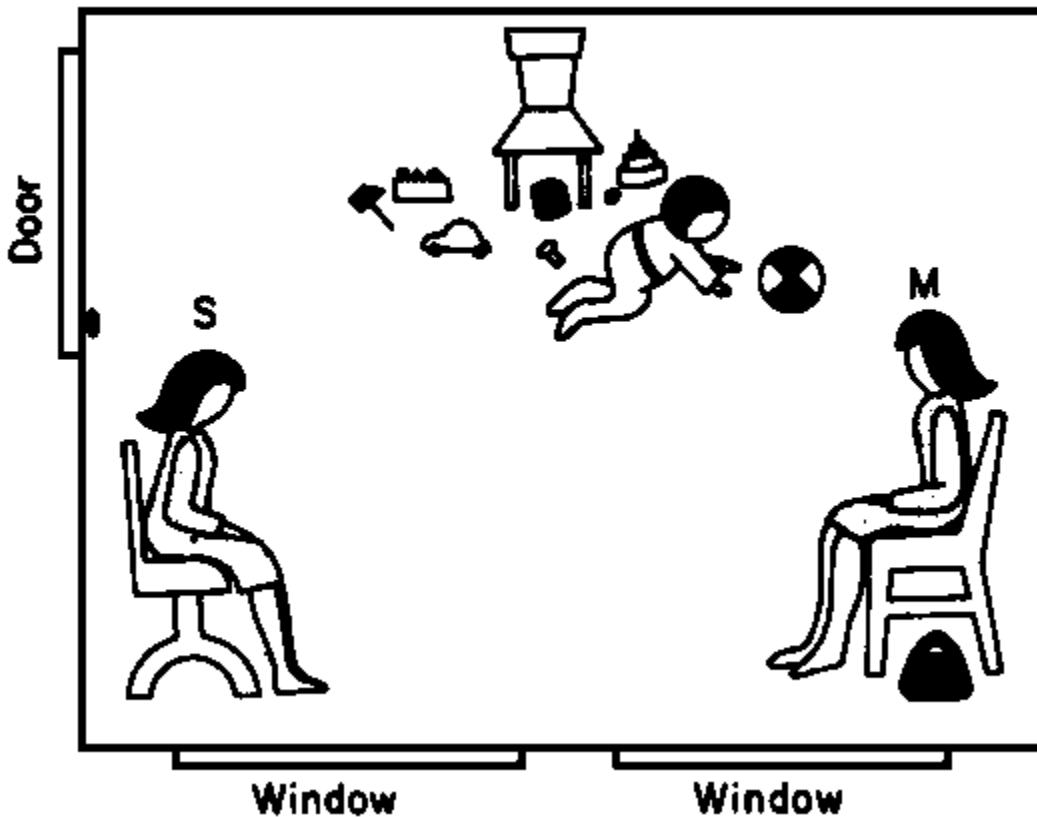
The procedure has been used in over 300 studies without a single mention in published reports or conference presentations of even short-term negative effects. Thus the procedure is today considered to pose no risk to either the infant or the parent.

### **The Physical Situation**

The S/S is conducted in a 12’x12’ carpeted room with a camera port and one-way windows for continuous observation.

At one end of the experimental room is a child’s chair heaped with and surrounded by toys. Near the other end of the room is a chair for the mother and on the opposite side is a chair for the visitor. The baby was put down facing the toys, and left free to move where (s) he wishes. Predetermined signals for starting each episode of the procedure are given by knocks on the wall (one knock for each phase of a given episode; two knocks to initiate new episodes). If necessary, the experimenter

can enter the room to provide needed instructions.



### Personnel

The usual number of personnel is typically two observers (O1 and O2), a visitor(V), and an experimenter (E). It is E's task to time the episodes and to give cues to the mother and visitor that determined their entrances and exits. Whenever possible a fifth person receives the mother and baby upon their arrival, reviews the instructions, and introduces them to the experimental room.

### Toys

The toys used are durable, child safe, and attractive. They included basic toys such as a large red ball, toy telephone, baby doll, grasping toys, etc. (most were manufactured by Creative Playthings). Although it was likely that some of the toys were duplications of toys a baby had at home, the total array of toys is invariably novel enough to activate exploration.

### Procedure

Parents are provided with a brief explanation of the procedure on the telephone when they are recruited. They also receive a written outline of the episodes (duration, goals, who is in or out of the room, etc.) when they arrive to participate in the study. The same information is included on the consent form.

Parents are informed that episodes are scheduled to last 3 minutes each but that separation episodes

are curtailed if a baby cried for a full minute (or cried so hard that it was clear he would do so; or parent asks to return to the infant). Extended crying is not an advantage to the experimenters; it precludes calming within the three minute duration of the subsequent episode and makes scoring difficult.

Parents are also informed verbally and in the consent form that they can end the procedure at any time without having to give an explanation.

### **Episodes of the S/S**

The episodes of the S/S are outlined in the following general instructions to the personnel the observers, visitor, and experimenter. A summary of the episodes is given in Table 1.

*Episode 1: Mother, Baby, and Experimenter. (1 minute).* This is a very brief, introductory episode. M and B are introduced to the experimental room. M is shown where to put the baby down and where she is to sit after having put him down. Meanwhile the O notes the B's response to the new situation from the safety of M's arms. E leaves after briefly reminding the parent of the instructions.

*Episode 2: Mother and Baby. (3 minutes).* M puts B down midway between S's and M's chairs, facing the toys. She then goes to her chair and reads (or pretends to read) a magazine. It is expected that B will explore the room and manipulate the objects in it, especially the toys. M has been instructed not to initiate an intervention, although if B initiates interaction, she is to respond in whatever way she considers appropriate.

For 2 minutes M directs B's attention neither to the toys nor to other objects in the room. If, after 2 minutes, B has not begun to explore the toys, a signal is given to M (a knock on the wall) for her to take him/her to the toys and to try to stimulate interest in them. One minute is allowed for this stimulated exploration. Meanwhile E times the episode, beginning when M puts B down. He signals M when 2 minutes are up if in his judgment, B needs stimulation. When 3 minutes are nearly up, he cues S to go to the experimental room.

The focus of the observation is on the amount and nature of B's exploration of the S/S locomotor, manipulatory, and visual and on the amount and nature of his orientation to M.

*Episode 3: Visitor, Mother, and Baby. (3 minutes).* V (who has never met B before) enters and says to M: "Hello! I'm the visitor" She immediately seats herself in V's chair and remains silent for 1 minute. She may watch B, but should not stare. At the end of 1 minute, E knocks on the wall to signal S to begin a conversation with M. M, meanwhile, has been instructed not to begin talking until S initiates interaction with B. At the end of another minute, V is signaled to initiate interaction with B. At the end of 3 minutes, E knocks to signal the end of the episode. At this signal M leaves the room unobtrusively, leaving her handbag behind on her chair and choosing a moment to leave when B seems occupied either with V or with the toys.

The focus of the observation is on how much and what kind of attention B pays to V, in comparison with the attention he pays to M or to exploration, and on how B accepts V's advances.



*Episode 4: Visitor and Baby. (3 minutes or less).* E begins to time the episode as soon as M leaves the room. M, meanwhile, comes to the observation room. As soon as M has gone, V begins to reduce interaction with B, so that B has a chance to notice that M has gone, if indeed he had not already noticed. If B resumes exploring, V retreats to her chair and sits quietly as M did previously, although she is to respond to any advances B may make.

We are primarily interested in the amount of exploring B will undertake in contrast with the amount he did when he was alone with M. If, however, B cries, V will intervene, trying to distract B with a toy; if this fails to calm him/her, V will attempt to comfort B by picking him/her up and or by talking. If V is successful in comforting B, she then puts him/her down and again attempts to engage interest in the toys.

Three minutes are allowed for this episode, although it may be curtailed if the infant cries continuously and is unresponsive to V's efforts to distract or comfort (or mother asks to return -as described above). Just before 3 minutes are up (or sooner if the episode is to be curtailed), E cues M to return to the experimental room.

We are interested in the amount and nature of B's exploration in contrast with earlier episodes. We are also interested in B's response to M's departure crying, search behavior, and any acute distress. B's response to the visitor is also of importance, including his response to being picked up and put down, and any clinging that he does.

*Episode 5: Mother and Baby. (3 minutes).* M approaches the closed door and calls the infant's name loudly enough that B can hear her voice. This assures that the infant notices her return. She pauses a moment, opens the door, and pauses again, to allow B to mobilize a greeting or approach. M is instructed to make the baby comfortable, finally settling him/her on the floor, and offering toys. Meanwhile V leaves unobtrusively. After 3 minutes, M is signaled to leave a second time. She picks a moment (if possible) when B seems cheerfully occupied with the toys, gets up, puts her handbag on her chair, and goes to the door. At the door she pauses and says "bye-bye" to B and leaves the room, closing the door securely behind her. In this episode we are interested in observing B's response to M after her absence and their interaction after her return.

*Episode 6: Baby Alone. (3 minutes or less).* E begins timing when M leaves. Three minutes are allowed for B to explore the room while he is alone, if the infant cries continuously for one minute (or the mother asks to return) the episode is curtailed by having V return to comfort the infant. Curtailing an episode in this way does not adversely affect scoring.

We are interested both in B's exploratory play (if any) when he is left alone in an unfamiliar situation and in his reaction to his mother's departure crying, search behavior, grumbling vocalizations, tension movements, and so on.

*Episode 7: Visitor and Baby. (3 minutes or less).* Just before the end of the 3 minutes (or upon a decision to curtail Episode 6), E cues V to return, V approaches the closed door and speaks outside, loudly enough that B can hear her voice. She pauses a moment, opens the door, and pauses again, to allow B to mobilize a response if (s)he is going to do so, E begins timing Episode 7 as soon as V

enters.

If B is crying, V will first attempt to soothe him/her, picking him up if he will permit it. When and if the infant calms, V will put him/her down and offer toys or play. If the infant gets interested in the toys and begins to play, V gradually retreats to her chair. If B is not distressed at the time V enters, she invites him/her to come to her. If B does not come, she approaches B and attempts to initiate play. If the infant becomes interested in the toys and begins to play with them himself, V will gradually retreat to her chair. In either case, if B signals for interaction or contact with V, she will respond. In general she is to gear her behavior to B's behavior.

In this episode we are interested primarily in B's response to S how readily he is soothed by her, whether he seeks or accepts contact, whether he will interact with her in play and in how this response compares with B's response to M in the reunion episodes. Also we are interested to see whether the pull of the toys is strong enough that B permits S to become nonparticipant.

*Episode 8: Mother and Baby. (3 Minutes).* Just before the end of 3 minutes (or upon curtailing Episode 7), E cues M to return. M opens the door and pauses a moment before greeting B, giving an opportunity to respond spontaneously. She then talks to the baby and finally picks him/her up. Meanwhile S leaves.

The focus in this episode is the infant's initial response to the mother's return and the quality of play afterward.

### **The Visitor and Her Behavior**

The Visitor's role is to make the procedure less stressful than it would be if the infant were simply brought into the room and left alone twice. She is expected to refrain from undue intervention in order to permit the baby to play, search for his mother, or even display distress spontaneously. On the other hand, she is instructed in Episode 3 to approach the baby and to attract his attention away from the mother and to the toys, and in the separation episodes to distract or comfort the baby if he is distressed.

### **The Mother and Her Behavior**

Each mother was instructed in advance about the purpose and procedures of the S/S and about the role she was to play. This instruction takes place on the telephone. The mother is also given a printed set of instructions before the procedure begins. The instructions are again discussed, if she felt uncertain of them, and she is provided with a small card that summarizes the episodes and the cues for which she is to be alert. Adequate advance briefing is considered important, so that the mother does not feel anxious or uncertain about her role in the situation.

The instructions are intended to control the mother's behavior, especially in the pre-separation episodes, in which it was desired to see what the baby would do spontaneously and without undue intervention from his mother. Little effort is made to control maternal behavior in the reunion episodes. We recognize that maternal behavior in such situations is much affected by individual

differences in infant behavior, that it would be difficult to provide for such contingencies in the instructions, and that in any event mothers would tend to behave in their own characteristic ways in reunion.

## Appendix C

### Brief description of Scale Points for Narrative Coding

Score	Description
7	These are the very best examples of secure base content in the narrative. There is a rich interplay between the two principle characters. There is a great deal of attention to the psychological state of the other, and the “secure base” is very responsive to that psychological state. Important to the secure base script is the resolution of the problem/distress with a return to normalcy.
6	These narratives fall short of the richness of secure base content that is evidenced in stories ranked “7”. Nonetheless, these stories do contain a reasonable amount of secure base content.
5	These narratives have a medium amount of secure base content, but not as much elaboration as those that are ranked “7” or “6”.
4	These narratives have some secure base content, but not very much. Thus, they are weak on secure base content, but there is no unusual or atypical content contained in the story either.
3	These narratives seem mostly event-related stories, in which what is happening is presented, with very little commentary on the give and take between with the characters, or on the psychological content of the story.
2	These are event-related as well, but so brief as to seem disjointed. Also included in this category are narratives that contain some unusual or atypical content that is inconsistent with a secure base script. The intrusion of this content however is not as consistent or pervasive as the narratives that are scored “1.”
1	These narratives are theme-based variations that come across as quite peculiar interpretations of the implied story line. Not only is the secure base script not recognized, but a quite different script is in its place. The narratives can be quite detailed, with content generated consistent with the peculiar interpretation of the story line. These are not that common. Narratives that have significant unusual or atypical content, but fall short of a complete theme-based variation also receive a “1.”

## **Appendix D**

### **Narrative Assessment of Adult Attachment Representations: The Scoring of**

#### **Secure Base Script Content**

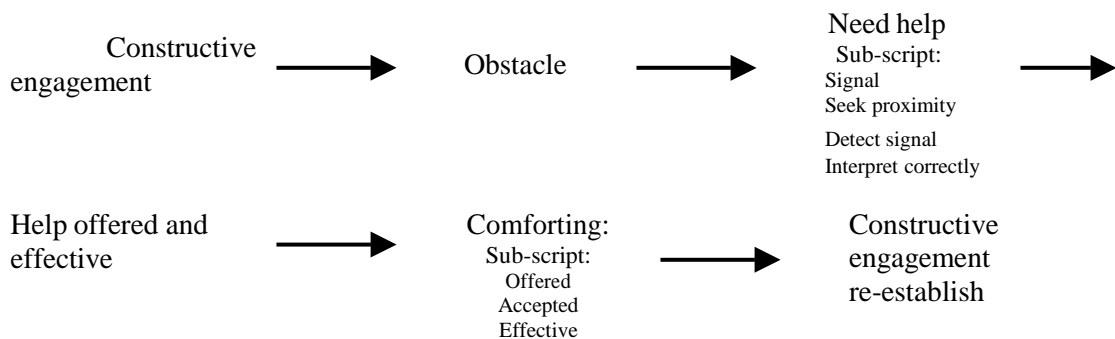
Harriet Salatas Waters and Lisa M. Rodrigues

State University of New York at Stony Brook

## 1. Definition of a Secure Base Script

Bowlby and Ainsworth describe the infant (child)-mother relationship in terms of a balance between proximity seeking and exploration. This balance can be summarized in terms of a prototypic secure base script. This script describes a sequence of events in which the caregiver (1) supports the child's exploration, (2) remains available and responsive and serves as a resource as necessary; (3) the child encounters an obstacle or threat and becomes distressed; (4) either the child retreats to the caregiver or the caregiver goes to the child; (5) the difficulty is resolved or removed; (6) proximity and/or contact with the caregiver effectively comforts the child; (7) the child (possibly with the caregiver's assistance) returns to constructive play (or ends play comfortably and makes a transition to another activity). Bowlby hypothesized that familiarity with and access to this script plays an important organizing role in the attachment-exploration balance during infancy and early childhood and is the foundation for attachment "working models" that emerge later.

## Content of A Generalized (Dyadic) Secure Base Script



## **II. Secure Base Script Content (Adult attachment narratives)**

Four attachment prompt word outlines were developed to guide story production about attachment relevant scenarios (Baby's Morning, The Doctor's Office, Jane and Bob's Camping Trip, The Accident). Two are mother/child scenarios (Baby's Morning, The Doctor's Office) and two are adult/adult scenarios (Jane and Bob's Camping Trip, The Accident). We broadly define a prototypic secure script as one in which the secure base (mom/partner) helps the individual (character in story) deal with some distress and helps to get things back to normal. In more positive scenarios, the goal of the secure base is to facilitate exploration, promoting positive experiences. Stories organized around a secure base script will have:

- 1) the secure base helping to select and implement strategies for getting things back to normal and defusing the emotional distress, when that is possible, or avoiding distress altogether by facilitating transitions to other activities (for a baby or child) and providing explanatory frameworks to help understand the situation (for young child)*
- 2) the secure base reconfiguring the person's representation to focus on more positive aspects, thereby diffusing the negative emotion. This often involves pointing out the "bright" side of a situation, e.g., we'll certainly talk about this trip for years to come.*
- 3) an interpersonal focus, that is, a sensitivity to and awareness of the other person's psychological/emotional state. The content of secure base narratives focuses on the interaction between the two individuals rather than simply describing the sequence of events in the story. The secure base responds to requests, cues from child/partner, modifying their own behavior as a consequence. There is give-and-take, with each partner making their own unique contribution to the situation, activity, but working together "as a team." There is also emotional give-and-take with an expressed emotion in one leading to an emotional response in the other.*

## **III. Scriptedness Scoring System**

Highest ranked stories are those with extensive secure base content and a strong interpersonal framework. Stories lower in rankings would have less and less of the secure base content. At some point low ranked stories would begin to contain "odd" content, i.e., content inconsistent with a secure base script. There would also begin to be breaks in the coherence of story events, with emotional content just there, with no follow-up or reaction from the secure base character. The worst stories essentially eliminate the partner in the secure base pairing (child or adult partner) as

an active participant in the story, even going so far as to redirect the focus of the story onto the self (e.g., *Baby's Morning* focuses solely on mother's experiences). In order to capture the full range of secure base scriptedness in the stories, a seven point scale was developed (described below).

7. These are the very best examples of secure base content in the narrative. There is a rich interplay between the two principle characters. There is a great deal of attention to the psychological state of the other, and the "secure base" is very responsive to that psychological state. Important to the secure base script is the resolution of the problem/distress with a return to normalcy.
6. These narratives fall short of the richness of secure base content that is evidenced in stories ranked "7". Nonetheless, these stories do contain a reasonable amount of secure base content.
5. These narratives have a medium amount of secure base content, but not as much elaboration as those that are ranked "7" or "6".
4. These narratives have some secure base content, but not very much. Thus, they are weak on secure base content, but there is no odd content contained in the story either.
3. These narratives seem mostly event-related stories, in which what is happening is presented, with very little commentary on the give and take between with the characters, or on the psychological content of the story.
2. These are event-related as well, but so brief as to seem disjointed. Also included in this category are longer narratives that contain some odd content that is inconsistent with a secure base script. The intrusion of this content however is not as consistent or pervasive as the narratives that are scored "1."
1. These narratives are theme-based variations that come across as quite peculiar interpretations of the implied story line. Not only is the secure base script not recognized, but a quite different script is in its place. The narratives can be quite detailed, with content generated consistent with the odd interpretation of the story line. These are not that common.

Narratives that have significant "odd" content, but fall short of a complete theme-based variation also receive a "1."

The following pages contain descriptions of how the secure base script is instantiated for each attachment scenario along with sample narratives that span the range from good secure base content to the absence of such content to sample narratives that recast the story line (and avoid addressing the implied attachment scenario).



## **A. Baby's Morning**

**mother**

**hug**

**teddy bear lost**

**baby**

**smile**

**found**

**play**

**story**

**nap**

**blanket**

**pretend**

In this attachment story, secure base content first appears in the interaction between the mother and baby as the baby's cries awaken the mother. Good secure base content would include interactions in which the mother and baby respond to each other's cues, e.g., a smile in one leads to a smile in the other. Attentiveness to the baby's psychological state would also be part of the script content, e.g., noting how much the baby enjoyed playing a particular game, or hearing a particular story. As the story moves forward there is an opportunity for the mother character to handle a small crisis, i.e., where is the teddy bear? Stories are scored for secure base content that include awareness of the need to find the teddy bear, recognizing that the child's transition to nap time would be adversely affected, and an active effort to engage the baby in the search, making it a joint activity. Story variations in which the teddy bear is part of a pretend story are fine, and can be scored for secure base content in the same way as the earlier story interactions. Finally secure base content is also scored in the transition to sleep at the end of the story, noting to what degree the mother attends to smoothing the way to sleep, e.g., rocking the baby to sleep, or saying "Good night, I'll see you in a little while", etc.

## Examples of Secure Base Content from Baby's Morning

*1) the secure base helping to select and implement strategies for getting things back to normal and defusing the emotional distress, when that is possible, or avoiding distress altogether by facilitating transitions to other activities (for a baby or child) and providing explanatory frameworks to help understand the situation (for young child)*

e.g., "Well, let's think really hard. If I were a teddy bear where would I be?" (memory

retrieval strategy used by mom to help child find lost Teddy Bear)

e.g., "Mom gently laid the baby in the crib and told her that it was time for a nap, and that she would see her in just a little while when she woke up. And mom kissed the baby on the cheek and quietly walked out the room and said "Good night, baby." (transition to nap time)

*2) the secure base reconfiguring the person's representation to focus on more positive aspects, thereby diffusing the negative emotion. This often involves pointing out the "bright" side of a situation, e.g., we'll certainly talk about this trip for years to come.*

(not really relevant to this story, baby is too small for directing comments to help shape how the baby thinks about a situation, plus there is no serious crisis/distress in this story)

*3) an interpersonal focus, that is, a sensitivity to and awareness of the other person's psychological/emotional state. The content of secure base narratives focuses on the interaction between the two individuals rather than simply describing the sequence of events in the story. The secure base responds to requests, cues from child/partner, modifying their own behavior as a consequence. There is give-and-take, with each partner making their own unique contribution to the situation, activity, but working together "as a team." There is also emotional give-and-take with an expressed emotion in one leading to an emotional response in the other.*

e.g., "Baby wanted to play hide and go seek so mother went and got a blanket from the baby's room." (responding to request)

e.g. "The little baby Sarah wanted to give her mom a hug also. So she reached up and gave her mom a really big hug. And this made her mom smile even more." (emotional give-and-take)

e.g., "And the mom would just smile at her and the baby would coo and laugh at the mom. She liked to laugh at the faces mom made." (emotional give-and-take)

e.g., "Mother knew that baby would not nap without her teddy bear." (aware of psychological state

of other) e.g., "And pretend that the teddy bear is hiding. The baby is looking for the teddy bear,

and it pops out from behind mom. And the baby is very happy because he's found the teddy bear.

The play for a little bit longer. The baby seems to be getting tired and mom puts the baby down for

a nap.” (awareness of baby’s psychological state).

### **Baby’s Morning - Scale score 7**

The brand new mother woke up to her little baby’s cry. And she went running into the baby’s room to see what was wrong. And actually, the baby was crying with happiness cause she was playing in her crib and she was playing with the brand new toy that her father had given her.

The blanket that was generally around the baby was tied over the toy, and the baby was actually pretending that this doll was her little baby. So she was hugging it, and her mom just smiled, cause she thought this was so cute. The little baby, Sarah, wanted to give her mom a hug also.

So she reached up and gave her mom a really big hug. And this made her mom smile even more.

So then she wanted to hear a story. And the story was ‘Goldilocks and the three bears.’ And Sarah started laughing because her mom would pretend to be each of the bears. So she would say, “Oh, I’m Papa Bear,” in this low and deep voice, “and whose been sleeping in my bed.”

And Sarah thought this was the funniest thing cause her mom had this really deep Papa Bear voice and then she’d have the little Baby Bear voice., “Oh, someone’s been sleeping in my bed, and she’s still there.” So the little Sarah was very happy with her mom’s story. And she played for most of the day while her mom watched her and played with her. And she had her favorite gift from her big brother was a teddy bear that was lost and she couldn’t find it anywhere. She looked up and down the stairs and she looked in her room, and she looked in her brother’s room, but she couldn’t find it anywhere. But her mom said, “Well, let’s think really hard. If I was a teddy bear where would I be?” And they thought, and they thought and they thought. “I know, I know, it would be in my bed.” So Sarah went running up the steps, toddling up the steps, and there they found the teddy bear, laying in her bed where she had left him. So she was so tired that her mom said, “Why don’t we both lay down for a little nap?” And Sarah and her mom took a nap for the rest of the afternoon.

*In this story we see coordinated interactions with both mother and child responding to the signals of the other. Mom runs to the baby when she hears a cry. When mom enters and smiles the baby reaches to hug mom, and mom just smile even more. Mom then tells a favorite story that makes the baby laugh with glee, mom knows exactly what pleases the baby. When the teddy bear is lost, mom enlists the baby so they can both think very hard about where it could be. Mom provides a strategy for dealing with the distressful situation. The story ends with mom noticing that the baby is tired and they go off to bed.*

### **Baby's Morning - Scale score 6**

One morning mother and baby woke up and had breakfast together. Mother then needed to clean up some things in the kitchen, so baby went into the family room which was attached to the kitchen and mother had spread out a blanket and some toys on the floor for the baby to play on. As the baby was playing mother straightened up the kitchen. Since the baby was so good while mother cleaned up the kitchen she was feeling happy that she could get her work done and also that the baby could keep himself occupied. After mother's work was done she went over and hugged the baby. She picked him and smiled and said, "Let's read a story." Mother and baby went over to the couch and looked at a book together. Mother and baby then pretended as they played with some cars. They played on the floor and pretended to make sounds of the cars as they drove up and down the highway, which was actually the floor. Baby then began to play with a teddy bear and as baby played with the teddy bear, mother had more chores to attend to. Baby was playing and playing and all of a sudden mother heard her baby crying. The teddy bear was lost. Baby was also getting tired and cranky and that's why he was crying also. So then mother put baby in for a nap. As the baby was napping, mother straightened up and found the teddy bear, so when baby woke up it was a happy afternoon for both of them.

In this story, mom shows sensitivity toward the child's needs, from setting up a play area for the baby while she does some chores, to coming over to read a story and play a pretend game about cars, to reacting quickly when the baby cries out because the teddy is lost. Mom realizes that the baby is tired and puts him down for a nap, but also finds the teddy so the baby will be happy when he wakens. This is a "6" because there is somewhat less detail about the exchanges between mom and child, less during the wake up time, for example.

### **Baby's Morning - Scale Score 5**

One morning the mom and her baby were playing on the blanket in their den. Mom took out lots of toys for the baby to play with. She took out lots of rattles and crinkley toys and lots of things for her to stimulate her baby. They even did flash cards, little black and white flash cards, which the

baby really likes. Then they took out a toy that plays music and the baby was clapping. Mom was trying to trying to teach her baby how to sit up and how to roll over. They were having a great time. The mom kept hugging her baby and giving her baby kisses and she got really excited when her baby gave her a really big smile. She read the baby some books and then they would pretend to make soup with the little play plastic bowl and spoon set. The baby would pretend to blow on the spoon and feed it to her mommy. Then the baby liked to play with her teddy bears. She got really upset because she couldn't find her teddy bear. Mom looked all over for it and finally found it behind the couch. The baby was really happy. They kept playing. They played with blocks and stacking rings and finally then the baby was worn out and mom was ready for a nap too, so they both took a nap.

Throughout the story there are back-and-forth exchanges and mom is sensitive to what the baby enjoys. So mom starts out by bringing out all kinds of toys that the baby enjoys. The baby responds to mom with smiles and they jointly engage in a pretend game of eating soup. Mom looks for the teddy bear when the baby is upset that it is lost, and they both go to sleep when the baby is tired out. Once again, there is evidence of mother-child coordination and mother sensitivity throughout the story, but the story does not have the rich exchanges of a 7 or a 6

#### **Baby's Morning - Scale Score 4**

Mother gets up in the morning and she's working around the house. She hears noises coming from the baby's room so she goes in because she thinks the baby has woken up. There he is in his crib playing with his little baby toy in the crib. When he sees him mom he gives her a big smile and she greets him warmly. She picks him up and gives him a big hug and then she takes him out of his room and puts him down. They are playing on the floor of the den. She's playing peek-a-boo with him. Then she goes and gets him some breakfast and he starts to get a little sleepy later after they are playing around together. He's almost ready for his nap already. So she reads him a story and gets ready to put him to bed. She finds his teddy bear for him and she tucks him in under his little blanket and he takes a nap.

As with other "4" stories, this story receives a "4" because there is very little personalized interaction. But there is some evidence that the mother is noting the child's state. She goes to the baby's room because the noises that she hears signals that the baby is awake. Later on the mother notes that the child is "almost" ready for his nap, so she reads a story first before she gets him ready for his nap.

### **Baby's Morning - Scale Score 3**

Mother and the baby wake up and they decided they're gonna spend the morning playing. They have breakfast together, and then they play Peek-a-boo with a blanket and the baby laughs and smiles. And then the mom plays a game with the baby, and hugs her. And they read a story together. Then the mother pretends to be different animals and makes different animal sounds, which makes the baby smile. And when it's nap time, the baby's getting tired, the mother gets the baby's teddy bear, and looks for the pacifier which they can't find. And after they find the lost pacifier, the baby settles down and takes a nap

*This story presents a matter-of-fact presentation of the events of Baby's Morning. The rich give-and-take of a secure base script is absent. This story is event-focused, so receives a "3." Pretty much follows the word prompts and little more. There is no odd content or disjointed presentation to merit a lower score.*

### **Baby's Morning - Scale Score 2**

The mother and the baby spent the morning together on the blanket playing and telling stories. They smile and hug and the mother tells the baby about a story where the child in the story's teddy bear is lost. And the child cannot find the teddy bear and she is upset and she takes a nap and when she wakes up she finds the teddy bear next to her.

*This story is very brief and thus appears somewhat disjointed. There is also some odd content. The child is upset, but there is no effort to deal with the upset, the baby just takes a nap.*

### **Baby's Morning - Scale Score 2**

The mother woke up and she said, "Good morning baby. I want to play with you today. I'll wrap you in the blanket, and give you a hug. Oh you make you smile, I'm so happy. Let me tell you a

story. It's a story about a mommy pretending to be a teddy bear." The mommy's pretending to be the teddy bear. She lost her baby teddy bear, but then she found out that the baby teddy bear was only taking a nap. So she found the baby and they were very happy

This story receives a "2" in part because it is brief but also because this is a one-way dialogue. The baby is not a participant at all. The baby doesn't even wake up to start the interaction; it's the mom who awakes. And then the mom starts with what she wants to do today. Stories that focus on the mother's needs are scored as inconsistent with the secure base script.

### **Baby's Morning - Scale Score 1**

I'd like to explain what my morning is like. Since I'm a working mother, it's kind of difficult for me to get the baby ready in the morning. A lot of times he wants to play, so it really takes up a lot of time in doing my routine. But what I usually do is I try to wrap him up in the blanket, and give him a big hug and then off we go to the babysitters. I try to smile a lot as I'm dropping him off, and as he's getting older now, we're trying to make up stories about where I'm going, and I try to explain to him where I go to work, and what I do. And a lot of times I have to pretend that I'm not leaving. And we have to distract him a little bit, so that I can get out of the house. And the other day, it was so traumatic because I had dropped off his teddy bear with him, and then when she, the babysitter, gave him back to me, we couldn't find the teddy bear. So we thought it was lost but maybe some of the other kids had taken him home. Luckily we were able to find him. So once the teddy bear was found, everything was good, and I was told that now that he's able to take his nap better, because without the teddy bear, during the day he wouldn't sleep, so his nap time was kind of messed up. So this is how baby's morning goes with me.

*In this story the subject focuses on herself and tells the story in the 1<sup>st</sup> person. The theme throughout this story is how the baby's morning affects the mother. There is no attention to the needs of the baby. Both the initial sentence and the final sentence of the story is about what the mother's morning is like, how the baby's morning "goes with me." Not only is there no evidence of a secure base script, there is a self-oriented perspective that seems to preclude the script. This story is definitely a "1."*

## **B. The Doctor's Office**

<b>Tommy</b>	<b>hurry</b>	<b>mother</b>
<b>bike</b>	<b>doctor</b>	<b>toy</b>
<b>hurt</b>	<b>cry</b>	<b>stop</b>
<b>mother</b>	<b>shot</b>	<b>hold</b>

In this attachment story, the crisis situation begins with the child falling off his bike and being hurt. This is the first opportunity for mom to take action as a secure base, and/or for the child to effectively seek out his secure base. Secure base content focuses on mom's recognition, not only of the need to get Tommy to the doctor, but of the need to calm Tommy down and reassure him that everything will be all right, and that if he needs a shot it will only hurt for a moment. The story then moves to the actual doctor's office, and the need to calm Tommy down as he faces the shot and/or stitches. Secure base content is scored for mother's efforts at providing an explanation of what is happening, how much it will hurt, etc. Recognizing that some comforting is needed as the doctor proceeds, e.g., holding Tommy's hand, or even stopping the doctor a moment to give Tommy a hug is also scored as secure base content. Once the trauma of the doctor's office is over, the mother's continued efforts at getting things back to normal involve praising the child for his good behavior at the doctor's office and offering to reward that behavior by buying Tommy a toy. When the toy is used for this purpose, and/or to provide Tommy with something to do while his knee heals, and Tommy gets to choose something he likes (i.e., his needs, preferences count for something) the story is scored for secure base content. Using the toy to stop Tommy from crying, or as something which is given at the doctor's office as a matter of



form does not count as secure base content.

### Examples of Secure Base Content from The Doctor's Office

*1) the secure base helping to select and implement strategies for getting things back to normal and defusing the emotional distress, when that is possible, or avoiding distress altogether by facilitating transitions to other activities (for a baby or child) and providing explanatory frameworks to help understand the situation (for young child)*

e.g., "Tommy started to cry again, but the mother was able to hold him and he stopped crying.

The doctor needed also to stitch up his chin so Tommy started to cry again. And his mother said,

"Doctor can you just stop for one minute? Let me hold him and I'll be able to calm him down."

(strategy for defusing emotional distress)

e.g., (Doctor says) "We'll have to give you a stitch. But only a few stitches. But everything will be

okay. And his mother reassured him, "It might hurt for a minute Tommy, but its going to be

okay." Tommy was still very upset, held his mother's hand real tight with his mom standing right

next to him." (mother provides comfort, both in the way of explanation and physical closeness)

e.g., (in this story, Tommy had been hurt because when he went into the street a biker ran into him)

"You know Tommy, you have to understand, when you're playing in the front yard, you have to

stop at the curb. And if you wanted to cross the street you have to hold somebody's hand, and the

person should be an adult." (mother provides explanation and strategy for avoiding another fall)

*2) the secure base reconfiguring the person's representation to focus on more positive aspects, thereby diffusing the negative emotion. This often involves pointing out the "bright" side of a situation.*

e.g., "And his mom says to him that because he was such a good boy that she will take him to the

store and buy him something. But it's not gonna be another bicycle because we had enough

trauma on that today. And Tommy was very happy because now he feels that now he was a big

boy cause he went to the doctor, and he got his bandage all taken care of and now he's going to

be rewarded for being so good while he was there." (mother focuses on the fact that Tommy

was so good at the doctor's office)

e.g., "Tommy was proud of himself and his mother said "Tommy, you did a wonderful job. You did real good, mom was very proud. You didn't cry too much, and see, now your leg is gonna heal up real nice and be all better." (mother focuses on positive outcome, leg looks better, as well as how good Tommy was)

*3) an interpersonal focus, that is, a sensitivity to and awareness of the other person's psychological/emotional state. The content of secure base narratives focuses on the interaction between the two individuals rather than simply describing the sequence of events in the story. The secure base responds to requests, cues from child/partner, modifying their own behavior as a consequence. There is give-and-take, with each partner making their own unique contribution to the situation, activity, but working together "as a team." There is also emotional give-and-take with an expressed emotion in one leading to an emotional response in the other.*

e.g., "So, Tommy was such a big boy, though, that he made his mother proud, and said, "Okay, I'll be really good mom I promise." And his mother was so happy with him that she said, "Okay, we'll go to the toy shop and we'll be able to pick up a toy that you might like as a reward for being so good." (emotional give-and-take)

### **The Doctor's Office - Scale score 7**

Tommy was about 5-years-old and learned to ride his bike about two months before. His mother finally decided to let him ride around the block by himself. Tommy was really excited for this big day and his mom was waiting on the front stoop for him to come home. When Tommy came home he was crying and was obviously hurt. She rushed down to go see him and he said that a dog had bit him on the leg. He was crying and crying and she didn't even know how he got the bite home because he was crying so much. The bite didn't look bad, but his mother still felt that he should go to the doctor. When they got to the doctor, the doctor was probably worse than the bite itself and Tommy wouldn't stop crying and she couldn't get him to calm down. The doctor then told the worst part, that he had to get a tetanus shot. Tommy kept crying and crying and his mother kept trying to reason with him that everything was going to be okay and that this was going to be over, although inside she was worried that he might be afraid of dogs for a long time to come. She tried to explain to him that the dog was afraid of him and that's why the dog bit him. Tommy seemed to

come around once the shot stopped hurting and the bite stopped hurting so much. His mother told him that they could go to Toys R' Us and buy whatever they wanted to in the store. What was really funny was what Tommy decided to buy was a toy dog. He said he was going to teach the dog not to be afraid of him. At the end of the night after they got home and Tommy was all calmed down he was watching t.v. and holding his dog. His mom stopped to look at him. She thought he was so beautiful and so grown up and that it was amazing that he could drive around the block by himself. Then she down next to him while he was watching t.v. and gave him a nice hug.

*The mother throughout the story is sensitive to Tommy's state, providing support & explanation to help him deal with the situation. He is on his first run around the block on his own, so Mom waits on the stoop to monitor the situation. When she sees that he is hurt, she runs down to check and decides that he needs to be seen by a doctor. At the doctor Tommy is crying so Mom explains how everything will be ok. Afterwards she offers to go to Toys R' Us as he calms down, where Tommy picks what he wants. Mom continues to monitor Tommy as he plays with his toy dog and sits down to give him a hug as he gets back on track, all calm, dealing with his encounter with a "real" dog by playing with a toy one.*

### **The Doctor's Office - Scale score 6**

Tommy wanted to get home from school. He hurried out the school after going to his locker and returning his books. He wanted to get home as quickly as possible because he knew his mother had a special surprise waiting for him. He hurried out the door and went to his bike, took the bike lock off, got upon his bike, and started hurrying home. He rode as fast as he could, anticipating what the surprise would be. As he was riding he realized that there was a stop sign and it was too close for him to stop. As he tried to stop, he fell off his bike over his handle bars. He hurt himself very badly and he began to cry. His leg was bleeding. All he wanted was his mother. He got up and held on to his bike and decided to walk the rest of the way. At the door he saw his mother waiting for him. When he saw his mother he began to cry again. His mother came and held him and asked what happened. He told her how he hurried home because he couldn't wait to see the surprise. She said, "Okay, well I think we have to go to the doctor. Your knee does not look very good". So, she put him in the car and they went to they doctor.

When they got there, the doctor stitched up his knee and gave him a shot so there'd be no further infection. On the way home, he sat closely to his mother and cried a little more. When they reached home his mother said, "Don't forget, I have a special surprise for you". They went into the living room and there was a wrapped up package. As he opened it he totally forgot about his hurt knee. He opened it and it was a very special toy. He was so happy and all he could think of was, I have the toy and he never thought of his knee again.

*In this story Tommy seeks out his Mom, his secure base, when he is hurt. Mom was waiting for Tommy to come home and went to him immediately when she saw he was hurt, comforting him and asking what happened. Mom explains that the knee doesn't look that good so they go off to the Doctor's. Tommy sits close to Mom as they go home because he is still upset from the Doctor's office. But when they arrive home and he gets the surprise that he had rushed home for, he was once again happy and back on track. This story has a good secure base script, receives a "6" because there is less exchange between Mom and child at the actual Doc's office.*

### **The Doctor's Office - Scale score 5**

It was bright and sunny day. Tommy decided to go outside to ride his bicycle. He put on his helmet, he got on his bike and started to ride up and down the block. His mother told him to be careful not to ride too fast so he doesn't get hurt. Tommy was riding up and down the block for a while without any problem and then he decided to be a little more adventurous and wound up hitting a curb and falling over. Tommy realized he was very hurt and started to cry. When his mother heard him crying she hurried out the door and picked him up. She realized that he had been hurt pretty bad and she should take him to the doctor. In the car on the way to the doctor Tommy asked his mother if he needed to get a shot. And Tommy's mother said, "Well, it would depend on how hurt you are." So on the way to the doctor they stopped at a store and bought Tommy a toy, just in case he needed a shot so he wouldn't cry. When they got to the doctor's office, the doctor decided that Tommy would need a shot, so his mother held him very close and told Tommy not to worry, that the shot would only hurt for a minute and as soon as it was over

they would stop for ice cream on the way home.

*This story has a solid secure base script. Mom begins with a warning that Tommy not ride too fast, and then hurries out when she hears him crying. When Tommy asks about whether he needed a shot, Mom explains that it depends. At the Doctor's office Mom does hold Tommy close and explain that the shot will only hurt for a moment. Mom also plans to stop by for ice cream afterwards to help Tommy get back on track. This story receives a "5" because there is less back-and-forth, less elaboration about the exchanges between Tommy and Mom. Although there is a sense that Tommy is going to be back on track, that is not laid out in detail.*

#### **The Doctor's Office - Scale score 4**

One day little Tommy was out playing on his bicycle. He hit a rock and he fell and he got hurt. His mom was really upset because Tommy was crying and he scraped up his knees pretty badly and he banged his elbow, so his mom wanted to take him to the doctor to make sure that he was okay. She called up the doctor and luckily the doctor was able to see him in a hurry and she brought him right over. Tommy was crying, but by the time he got to the doctor he had calm down just a little bit. The doctor's office was really pleasant and they took Tommy in right away. The doctor looked over his wounds and cleaned everything up and he had to give Tommy a tetanus shot because he did fall where there was some metal and he wanted to make sure that Tommy wouldn't have a problem with that. So, he did give him a shot, which hurt and he was crying. His mom was holding him tight and hugging him and trying to distract him with a toy. The doctor told him that he had been a really good boy and gave him some stickers before he left. His mom gave him a big hug and took him home.

*This story presents the events as they occur with little direct interaction between Mom and Tommy. But there is some evidence of Mom's sensitivity to Tommy's state so the story receives a "4." The story at least reports on how Tommy begins to calm down a bit by the time they arrive at the Doctor's office. Mom does hold onto and hug Tommy during the Doctor's visit. Finally, after the Doctor phrases Tommy for being a really good boy, Mom adds another big hug.*

### **The Doctor's Office - Scale score 3**

One day Tommy and his mother were playing and he asked his mother if they could ride bikes. She said - "yeah sure, we'll go together and ride bikes.". As they were riding, Tommy proceeded to go faster and he fell from his bike and got hurt. He was crying and he got cut. His mother said "let's go back, we'll go to the doctor.". They rushed him to the doctor. He was crying and his leg had been badly hurt and when the doctor saw it they told him that he needed a shot. They told her that she had to hold him down. He was still crying. They gave him a shot so that he wouldn't get an infection and he stopped crying and he felt a little better. They gave him a toy to play with at the doctor's office. His mother told him that when he got better they could ride bikes again and that going to the doctor wasn't so bad. That the shot would help him and that he wouldn't get sick. Tommy was okay.

*This story is event-focused. There is no consideration of Tommy's psychological state. Tommy is crying, but Mom doesn't do anything to calm him down. He stops crying when he starts to feel better. This is a "3."*

### **The Doctor's Office - Scale score 2**

One day after school Tommy was riding his bike. The bike slid in the sand and he got hurt. His mother hurried him to the doctor. He was crying a lot. The doctor gave him a shot that made him feel better. His mom then on the way home stopped quickly at a toy store and she bought him a toy.

*This story is abbreviated with no elaboration. No secure base script.*

### **The Doctor's Office - Scale score 2**

One sunny afternoon after school there was a little boy named Tommy who was riding on his bike. He was racing up and down the block and as he was racing up and down the block he head into one of the other little boy's toys with his bike and the bicycle went flying in the air and he fell on

the ground. It turns out that Tommy had gotten hurt and he started bleeding profusely from his mouth and it looks like he cut himself on the handle-bars of his bike. He started to cry like anything. His mother had hurried on over to him to see what was wrong. She saw all the blood. She got so nervous, she picked him up and threw him in the car and they ran to the doctor's office. It turns out that he had knocked his tooth into his mouth when he went over on the handle-bars. But there seemed to be a little rust that was on his handle bars so the doctor had wanted to give him a shot just in case, so he didn't get any kind of infections or anything like that. After the shot and after they saw that they had to do a couple of stitches to Tommy's lip. They put him back in the car and brought him on home. Tommy felt much better after that, within the next couple of days.

*This story is event-focused, with an emphasis on describing Tommy's injuries. It receives a "2" because there is also some odd content. The reaction of mom to Tommy's injury is unusual. It focuses on the fact that Mom is nervous about the injury so she rushes Tommy to the doctor. She is described as picking him up and "throwing" him into the car. At no point does she try to address any upset that Tommy might be experiencing.*

### **The Doctor's Office - Scale score 1**

Tommy had run into the house because apparently he was riding his bicycle with his friend Billy and he fell down and got hurt. He ran in and said "Mother, Mother, Mother, I fell down and got hurt.". She said "Let me see!" He lifts up his pants leg, only to discover that he is bleeding profusely and needs to go to the doctor. She's sure he needs stitches but she doesn't want to get him excited because she knows that he can't stand needles so they says "oh, it should be nothing, but we'll take you to the doctors just to get you cleaned up.". He says, "Alright, alright, you know I don't like to go to the doctors. She says, "Oh, it'll be alright.". They get there and the doctor says "Oh, it looks like you're going to need shot, when was the last time you had your tetanus?" The Mother said, "Oh no, it's been quite some time.". He said "Alright, let me get the nurse and we'll give you a tetanus shot.". So he starts to cry. Mom's upset because he's all bloody and a mess. She says, "Alright, if you handle it like a big boy, I promise I'll take you to the toy store.". He

says, “Well, would you buy me the toy that I’ve been wanting?”. She said, “Well, depending on how you are at the doctor’s office, sure.”. He says, “Well, would you do me one other favor?”. She said, “Yeah.”. He said, “Would you hold my hand.”. She said, “Sure, I’ll hold your hand.”. He said, “Will you hold my hand until the pain stops.”. So she says, “I promise.”. That’s what she did. She held his hand until the pain stopped. He stopped crying and they went to the toy store when it was all over and he got the toy that he wanted and everybody was happy in the end.

*This is a very unusual story in that Mom seems to be focused on how keep things from getting too unpleasant for her. She begins by lying to Tommy about the Doctor’s office because he doesn’t like needles and if he thought that he needed a shot he would become excited. However, when the doctor tells Tommy that he needs a shot, Mom does not focus her attention on Tommy who may be upset about this. She is too upset that he is all bloody and a mess. So she tries to offer him try to handle the shot like a big boy. That prompts a very unusual exchange in which Tommy negotiates for his preferred toy, and furthermore negotiates for getting Mom to hold his hand.*

### **C. Jane and Bob’s Camping Trip**

<b>Jane</b>	<b>tent</b>	<b>campfire</b>
<b>Bob</b>	<b>wind</b>	<b>shadow</b>
<b>bags</b>	<b>collapse</b>	<b>sounds</b>
<b>hurry</b>	<b>upset</b>	<b>hug</b>

In this attachment story, there are several opportunities for secure base content to appear as Jane and Bob encounter various difficulties and have to jointly negotiate their way through them. Many of the stories begin with differing degrees of enthusiasm for this camping trip, usually with Jane deciding she will go along because of Bob’s interest in the trip. This is scored as secure base content because of the sensitivity to the other’s psychological state/needs and because it involves a give-an-take between the two partners. As the story continues there are additional difficulties in



which one partner becomes upset, i.e., the tent collapses, the weather turns bad, and there are strange sounds at night. Each of these difficulties is an opportunity to score secure base content, i.e., sensitivity to the other's psychological state, and recognizing the need to negotiate a solution that addresses the other's needs, as well as one's own. An important component of the secure base content in these exchanges is an effort by one partner to look on the bright side of the situation, recasting the experience in a positive light and diffusing the negative affect. Bringing the story to a positive conclusion in spite of all the difficulties, with Bob and Jane reaffirming their affection for one another is also a hallmark of the secure base script in this story.

#### Examples of Secure Base Content from Jane and Bob's Camping Trip

*1) the secure base helping to select and implement strategies for getting things back to normal and defusing the emotional distress, when that is possible, or avoiding distress altogether by facilitating transitions to other activities (for a baby or child) and providing explanatory frameworks to help understand the situation (for young child)*

e.g., "And now Jane is like, "Bob, come on. It's time for the hotel, we gotta get out of here." And he explains to her, "You know, we can reset this up. If you really want to go to a hotel we can, but we really wanted to get away from just all the people and the commotion, and the confusion." And she says, "Well, all right. If you really feel we can recover this and make it okay." (secure base offers strategy to make everything work out)

*2) the secure base reconfiguring the person's representation to focus on more positive aspects, thereby diffusing the negative emotion. This often involves pointing out the "bright" side of a situation.*

e.g., "After they got the tent set up (after it had collapsed), they worked together to get it set up, and Jane was really enjoying herself. She told Bob that it was more that they were together than where they actually took their vacation" (Jane focuses on positive aspect of experience, in part because she knows that Bob is concerned about how things went badly early on)

e.g., “And the wind started to howl like those coyotes and those wolves, and the tent started flapping around. It flapped so hard that it collapsed right on top of Jane and Bob. And Jane was so upset that their anniversary trip was ruined. But Bob looked at her, gave her a big hug and said, “Don’t worry honey, this will be an anniversary to remember.” (Bob recasts experience into positive terms. e.g., “Actually they were telling ghost stories and Jane happened to see a shadow and hear sounds which Bob didn’t hear. But she started to panic. But Bob hugged her and said, “It’s okay. There’s nothing, it’s your imagination. Don’t let it run away with you. And she said, “You know, you’re right.” (Bob provides interpretation that diffuses negative affect)

*3) an interpersonal focus, that is, a sensitivity to and awareness of the other person’s psychological/emotional state. The content of secure base narratives focuses on the interaction between the two individuals rather than simply describing the sequence of events in the story. The secure base responds to requests, cues from child/partner, modifying their own behavior as a consequence. There is give-and-take, with each partner making their own unique contribution to the situation, activity, but working together “as a team.” There is also emotional give-and-take with an expressed emotion in one leading to an emotional response in the other.*

e.g., “And of course now (after telling scary campfire stories), every little twig that is out there starts to drive her crazy, cause of course now, it’s this monster or that monster coming through. He reassures her that it’s a fox or whatever, although in his mind, he’s thinking, well it could be a bear, but you don’t tell her that” (sensitivity to other’s psychological state).e.g., “The sounds of the cricket and the wind in the leaves were all very romantic, and Jane agreed that this was the perfect vacation. Bob thanked Jane for agreeing to come, and Jane thanked Bob for showing her that camping could be a good vacation as long as they were together. The night ended with a big hug and they went into their tent (emotional give-and-take, a team).

### **Jane and Bob's Camping Trip - Scale score 7**

Jane and Bob couldn't decide where to take their yearly vacation. Jane wanted to go to a beach resort, but Bob had his heart set on camping. He couldn't convince Jane to change her mind. He brought home brochures and used his best tactics to convince her. Jane just couldn't get used to the idea of not having all the amenities she was used to. Finally she gave in, because she knew it was Bob's true desire. He packed their bags in a hurry before she could change her mind. When they got to the campsite Bob set up the tent. They went for a long stroll in the woods and when it was time for dinner they set back for their tent. The weather began to change very quickly. The wind kicked up and the sky grew dark. Jane was very frightened. They went into the tent to take shelter because the rain was coming down hard. Bob did his best to comfort Jane. With one very strong wind, the tent collapsed right on top of them. Bob was more upset because the camping trip was not what he had promised Jane that it would be. They ran to the nearest shelter and soon the weather became nicer. Bob was apologizing to Jane that he would make everything right, and he promised himself that he would make it right for her, because she had agreed to come. After they got the tent set up ... they worked together to set it up, and Jane was really enjoying herself. She told Bob that it was more that they were together than where they actually took their vacation. As the night went on, they had a roaring campfire, and they toasted marshmallows, and just sat beside each other. The shadow of the fire cast a warm glow on the campsite. The sounds of the crickets and the wind in the leaves were all very romantic, and Jane agreed that this was the perfect vacation. Bob thanked Jane for agreeing to come, and Jane thanked Bob for showing her that camping could be a good vacation as long as they were together. The night ended with a big hug and they went into their tent.

*This receives a "7" because of the joint support that they give each other and the sensitivity each has for the concerns and perspective of the other. Bob thanks Jane for being willing to come on*

*this trip, and appreciates the value of being together regardless of where they go for a vacation.*

### **Jane and Bob's Camping Trip - Scale score 6**

Jane and Bob decided to go on a camping trip. The thing was that this was the first camping trip they had ever gone on. Bob's been on one or two camping trips but he's not very good at putting up the tent or setting up a campfire or anything like that. Jane really wanted to go and Bob wanted to make Jane happy. They're off to Pennsylvania and when they went it ended up being a very windy day so they were trying to put up their tent and they trying to hurry about it because it seemed like it was going to rain. The clouds started coming in. They put up the tent. It took them about a half hour to forty five minutes. Then this gush of wind came and the whole tent collapsed. They obviously didn't have it set up properly. Jane was getting pretty upset and Bob was getting a little annoyed because he just couldn't do it and he wasn't really good at this and he really wanted to go for a weekend at a hotel and go watch the leaves turn since it was the fall time. So Jane said to Bob, let's just regroup, let me give you a hug and let's see if we can try to do this together. Off they went, over to the tent to try to put it up. They got it up, it looked all solid and everything. All the wind was coming and the sound of the wind and rain started coming so they ran inside their tent and it seemed like it was holding up pretty well. They ended up staying there most of the night because it was raining outside and couldn't really set up a campfire because it kept getting wet every time they tried it. So, in the morning, after the rain had passed and it seemed like it was a gorgeous day, they set up a beautiful campfire and they ended up going fishing. They made a nice breakfast and enjoyed the rest of their weekend.

*This receives a "6" because there is the type of give-and-take and concern for the other's point of view/psychological state that we expect in the secure base script for this story. Bob goes along because Jane really wants to go camping. When Bob gets upset that things aren't going well, Jane comforts Bob, and suggests they regroup and try (together) to make it work. In the end they enjoy the weekend. It's a good script story but there is less elaboration than a "7."*

### **Jane and Bob's Camping Trip - Scale score 5**

Jane and Bob wanted to spend another anniversary going someplace special. They decided the usual trips to Hawaii, the Caribbean and Colorado skiing were getting a little bit boring, so they decided to go camping. They planned this wonderful trip to go camping at the eastern end of Long Island. They did a lot of shopping before they went away. They shopped at the Price Club and Sam's Club and bought bags and bags of all the food and accessories that they would need. When they got there it was getting dark and windy and they needed to set up the tent. Because they never camped before, they really didn't know how to do this, but did the best they could. Soon, it was the middle of the night, the wind was picking up, and then all of a sudden, the tent collapsed. Refusing to get upset because this was a nice vacation, they just sat there and laughed over the situation and were able to get the tent back up. Most of the camping trip involved eating and sitting around the camp fire. They enjoyed sitting by the camp fire and found it very relaxing. They liked to watch the shadow of the flame and enjoyed listening to the sounds of the fire crackling and wood burning. It was a very relaxing place for them to be. Every night before they went to bed they would put out the camp fire (for safety reasons). On the way back home, they embraced in a big hug and agreed that this was one of the more memorable experiences that they had for an anniversary vacation.

*This story receives a "5." There is less give-and-take between the two but both Bob and Jane take on the disruptions of the trip with a positive slant and a commitment to make sure this trip is enjoyable. They don't let the negative events take over. So they refuse to get upset and laugh about the situation. At the end they hug and agree this was a memorable experience, casting the trip in positive terms for the both of them.*

### **Jane and Bob's Camping Trip - Scale score 4**

Jane and Bob had planned a big camping trip for the end of August and they planned it since the springtime. They had planned to go, Bob got the bags out of the attic and they both packed their

things. It took them a lot longer than they thought and they were in a hurry to get going and have a good time. Bob put the tent on top of the car on the way to the camping site. He didn't tie it on too good and the wind took it away. That also happened when Jane put the tent up at the camping site. There was gusty winds and when Jane was trying to get it all together it collapsed. This made her very upset, but Bob consoled her. Once that was done they had a big laugh about it. They set up the campfire to cook some dinner. After dinner the campfire was roaring. Bob and Jane sat around talking and cuddling. Jane saw a shadow and heard some sounds. They went to investigate and it happen to be a raccoon rummaging through the garbage. They were so relieved that it was just a raccoon that they gave each other a hug.

*This receives a "4" because there is some evidence of a secure base script. When Jane became upset, Bob does console her and they have a laugh about it. They do investigate the sounds in the woods, but its described in a very matter of fact kind of way. Nonetheless they give each other a hug when they are so relieved that its just a raccoon.*

### **Jane and Bob's Camping Trip - Scale score 3**

Jane and Bob Smith decided on a windy afternoon in October to go camping for the weekend. Jane and Bob didn't have any children and were free to go away for the entire weekend all by themselves. Jane and Bob hardly packed all their bags, through in their sleeping bags, took the propane stove and quickly stopped at the super market for some stuff to throw on the barbecue. They loaded up the explorer with the tent and propane tank and the lantern and away they went into the woods. Once they got there it was starting to get dark. It was starting to rain and starting to get very windy. Jane and Bob tried and tried to get the tent up, but every time it kept collapsing. Bob thought this was incredibly funny, and Jane was very very upset. Eventually, they got the tent standing, they laid out their sleeping bags and started their camp fire. The rain had stopped and they made a beautiful fire. They took out their hot dogs and marshmallows and roasted away. While they were roasting they could see the shadows of the fire dancing on the

ground next to where the camp fire was out and it just looked like two people dancing and dancing and dancing. As they got intrigued by that, they could hear the sounds of the firing crackling while there marshmallows and hot dogs cooked. They were so happy with their pretty camping trip that they gave each other a big big hug and then had a feast of hot dogs and marshmallows.

*This story is event-focused, giving an event by event account of the camping trip. When things go bad, Bob thinks its funny, and Jane is very upset. This doesn't prompt any awareness on Bob's part of Jane's state. They just move on to the next step, setting things up for the camp fire. The hug at the end seems there mainly because of the word prompts, not the usual reaction to the scary sounds, etc. Consequently the story receives a "3" reflecting its event-focused framework.*

### **Jane and Bob's Camping Trip - Scale score 2**

Jane and Bob went camping. They were in a hurry to get up their tent because the wind started blowing quick. All of a sudden the tent collapsed and they got very upset, so Bob hugged Jane and then they built a campfire. Jane got scared because then she heard some sounds and she saw a shadow.

*This story receives a "2" because of its brevity. As a consequence it's also a bit disjointed.*

### **Jane and Bob's Camping Trip - Scale score 2**

Jane and Bob went camping. But they were a little late because they had to work late, so they were in a hurry. So when they got to the campsite, they put up their tent really fast, which when the wind came, it collapsed. Jane got upset, and Bob fixed the tent. And pretty soon they were having a nice camp fire, telling stories. And then they went in their sleeping bags to sleep, but they heard some sounds, and they saw shadows and they got scared. Turns out it was just the wind again, and this time the tent stayed up. And they had a good time, and they fell asleep.

*This story receives a "2" because not only is it a relatively short story, but also it contains some odd content. The distress noted in the story line is never addressed. Jane becomes upset, and Bob fixes the tent, but there is no connection between the events. Bob doesn't seem aware of Jane's*

state. When they get scared, neither one tries to comfort the other.

### **Jane and Bob's Camping Trip - Scale score 1**

Jane and Bob were getting ready to go on their camping trip. Jane had all the bags packed and Bob was still not home. By the time he got home, he was late and Jane was hurrying him to put the bags into the truck and off they went. When they got to the camp site they were already late and the sun was going down. They put the tent up in a hurry. Since they didn't secure all of the poles, when the wind came the whole tent collapsed and Jane was very upset because there was no reason that Bob should have been late to begin with. After they finished putting the tent back up they built a camp fire. The camp fire made funny shadows around the ground and the sounds of the wild animals made Jane afraid. She gave Bob a big hug to try calm herself down.

*This story receives a "1" because of the theme-based focus on Bob's lateness and the odd ending in which Jane gives Bob a hug to try to calm herself down. Jane starts out angry that Bob is late coming home. This point is reiterated when they arrive at the camp site and the sun is already going down. We hear again about Bob's lateness when the tent collapses. Then, once again we have a very peculiar ending in which Bob does not comfort Jane when she becomes frightened, but Jane gives Bob a hug in an effort to calm herself down.*

### **D. The Accident**

<b>Sue</b>	<b>wait</b>	<b>home</b>
<b>road</b>	<b>Mike</b>	<b>dinner</b>
<b>accident</b>	<b>tears</b>	<b>bed</b>
<b>hospital</b>	<b>doctor</b>	<b>hug</b>

In this attachment story, the crisis situation involves an accident and a trip to the hospital. Secure base content is scored when there is some substance to the reunion, with the partner expressing concern about the well-being of the injured party, and trying to make them feel better about what



has happened. As Mike and Sue go home there is an additional opportunity to score secure base content vis-a-vis the partner's efforts at getting things back to normal. Thinking of ways to make the injured person comfortable, helping them settle into bed, etc. would all be scored positively. Stories that follow a secure base script provide many more details about the partner's efforts, in effect emphasizing the importance of helping to get things back to normal. The key feature of "Accident" stories that follow a secure base script however is an emphasis on how this experience reflects upon the personal relationship between the two characters. It is less a story about an accident, and more a story about an experience that brings the two closer together, reminding them about how important they are to one another.

#### Examples of Secure Base Content from The Accident

*1) the secure base helping to select and implement strategies for getting things back to normal and defusing the emotional distress, when that is possible, or avoiding distress altogether by facilitating transitions to other activities (for a baby or child) and providing explanatory frameworks to help understand the situation (for young child)*

e.g., She was relaxing and resting, still in quite a bit of pain. But around dinner time, Mike gave her her medication. She ate dinner, was feeling a little better after that. But Mike carried her up the stairs to bed, laid her down, propped her up with some pillows, made her nice and comfortable, and gave her a big hug .... (secure base implements series of steps to make Sue feel better, helping to get things back to normal)

e.g., "When Mike arrived, Sue had tears in her eyes because she was very shaken by the accident. The doctor said "There's nothing to be worried about. Everything will be okay. Sue will just need to have some rest and relaxation for the next few days." So Mike went over to his wife, gave her a really big hug, and said, "Why don't we go home honey?" (secure base comforts Sue, recognizing she needs the comforting, and then initiates the next step to getting things back to normal, going home).

2) *the secure base reconfiguring the person's representation to focus on more positive aspects, thereby diffusing the negative emotion. This often involves pointing out the "bright" side of a situation.*

e.g., "Sue and Mike looked at the unprepared dinner on the counter and it reminded them how precious life is, and that things can take a turn immediately, without warning. With this on their mind they went to bed early and thought of how fortunate they were that everything turned out okay. They fell asleep and because they realized their lives were so full they never even thought about dinner. (accident experience is recast in relationship terms)

e.g., And on the way home, Sue remembered that all the food for dinner was in her car that was towed away to the repair shop. Seeing as they had nothing in the house to eat, they both made a big bag of popcorn, and they had a can of Kool Aid that was left over in the refrigerator.

Afterwards they went to bed and Sue said, "I'm so sorry. I planned this really big dinner for you." And Mike just gave her a really big hug, and said, "The best kind of gift I have is you, home safe with me." (dinner disaster is recast in positive relationship terms).

3) *an interpersonal focus, that is, a sensitivity to and awareness of the other person's psychological/emotional state. The content of secure base narratives focuses on the interaction between the two individuals rather than simply describing the sequence of events in the story. The secure base responds to requests, cues from child/partner, modifying their own behavior as a consequence. There is give-and-take, with each partner making their own unique contribution to the situation, activity, but working together "as a team." There is also emotional give-and-take with an expressed emotion in one leading to an emotional response in the other.*

e.g., "Sue was a little groggy right now, and still very upset and shaken from the accident. As soon as she saw Mike she went into tears. "Oh, I can't believe I did this. This is so bad. I feel terrible. I didn't realize how tired I was (in this story, Sue nodded at the wheel)." Mike said, "We're just lucky that you're okay, and that the gentleman in the truck is fine." (emotional give-and-take, Sue breaks down, now that her secure base is here, and Mike reassures her that everyone is fine)

## **The Accident - Scale score 7**

Sue was driving home early one morning, after getting off at her rounds at the hospital. She was a little tired when she got in the car, but figured she was okay to drive, once she hit the nice cool air. So, she got in her car and proceeded on her way home. She was driving down the road, and believes to have nodded off a little bit behind the wheel and causing an accident at an intersection. She had hit a truck, a morning delivery man making his rounds. And she was hurt, and the gentleman in the truck that she had hit on his side was okay. He called an ambulance, and an ambulance came from the hospital where Sue had just got off at her rounds. And the ambulance picked her up and took her to the hospital. She had a one broken rib, and a little bruised up, but she was going to be okay. She was put in a room to wait for a doctor to see her. And while she was waiting a nurse came in and took all of her information and told her she would call her husband Mike. So she called and within a half an hour Mike was at the hospital. Sue was a little groggy right now, and still very upset and shaken from the accident. As soon as she saw Mike she went into tears. "Oh, I can't believe I did this. This is so bad. I feel terrible. I didn't realize how tired I was." Mike said, "We're just lucky that you're okay, and the gentleman in the truck is fine. He's been looked at already and he's fine." So Sue was being pretty hard on herself. She thought 'I can't believe that this happened to me. That I did this, I caused this accident.' But the doctor came in and prescribed some medication for Sue. It actually had been a colleague of hers who had come in to see her and was glad she was okay. And said "Sue, go home. Take a couple of days, rest up. You'll be back to work in no time, but you need to rest. It's going to take a while for that broken rib to heal". So after a few hours, Mike was able to take her home and on the way home, they stopped to pick up her medication. By the time they had gotten home, it was getting close to dinner. It was late afternoon and Mike was fixing dinner and Sue was laying on the couch. She was relaxing and resting, still in quite of a bit of pain. But around dinner time, Mike gave her her medication. She ate dinner, was feeling a little better after that. But Mike carried her up the stairs to bed, laid her down, propped her up with some pillows, made her nice and comfortable, and gave her a big hug and was just so glad that she was okay. And she was just glad to be home.

*In this story there is a detailed reunion at the hospital that reflects good secure base content. Sue expresses her distress to Mike and he talks to her providing some perspective and comfort. When*

*he brings her home he makes sure that she is well taken care of, giving her her medicine, cooking dinner, and making sure she is comfortable in bed afterwards. The story ends with Mike expressing how happy that Sue is ok and she's just happy to be home. All the components of the secure base script for the Accident story are evident in this story. It's a "7."*

### **The Accident - Scale score 6**

It was a cold and rainy night and Sue was driving on the road in her old Volvo. It was hard to see because the rain was coming down so fast and she drove on a slick road. All of a sudden, she saw a stop sign that was blocked by a tree that was waving in the wind. She slammed on the breaks, but it was too late, "Crash". She skidded along and crashed into a fire hydrant. She had a big bump on her head and her car was a wreck. All of a sudden she heard sirens coming. "Oh good", she said, "Someone must have seen it and called it in on their car phone." The ambulance came up, checked her out, and decided to take her to the hospital, just to make sure she was okay. When she got there, she was waiting in the emergency room for her husband to come. She had the ambulance drivers call him to let him know what happened. Her husband, Mike, showed up. He was in tears. "Are you okay, are you okay?", he said. Sue smiled through her bruised face. "I'm okay, I'm really glad we bought a Volvo. It really is true what they say about the cripple zone." Doctor came over to her and checked her out. He checked her eyes to make sure she didn't have a concussion. He said, "Well you're not gonna look too pretty for awhile, but we're sending you home. You'll be okay. I just want you to stay in bed for a few days and rest up. Then you'll be as good as new". Mike took his wife home, put her in bed and made her some chicken soup for dinner. He gave her a big hug and said, "I'm so glad you're alright. I don't know what I would have done without you." Sue said, "I'm glad I'm okay too. I'm going to be much more careful in the future". The two of them just spent the rest of the evening watching videos and being thankful that they were together.

*This story receives a "6" because it has a good secure base script. It has a reunion at the hospital in which Mike expresses his concern, and Sue says she's ok. At home, Mike puts Sue in*

*bed and cooks dinner. They end the story by expressing how grateful they both are that everything is ok and that they are together. All of the components of the script are in this story as well, but there is a bit less elaboration. The reunion at the hospital is a bit more focused on how lucky Sue is for driving a Volvo, than on how she/Mike feel about the accident.*

### **The Accident - Scale score 5**

Sue went out for a ride on the motorcycle one day. She took motorcycle safety courses and she knew all the rules of the roads and how to watch out for the other cars that didn't pay attention to motorcycles, people on bicycles and people walking. She made sure she was seen. As she was driving down the road she sees an accident. What happened was that two cars pulled out at the same time and hit each other. Sue got scared. She tried to stop her motorcycle but she didn't quite stop and she went off the road and had an accident into the grass. The accident of the two cars happened right in front of her. An ambulance came and took the people from the cars to the hospital and Sue wound up going to the hospital too. The ambulance crew wasn't sure if she was okay or not. Sue went to the hospital and they had to wait for a while in the emergency room. They asked her who to call. She said - Call Mike, he'll know what to do. So the hospital people called Mike and Mike came to get her and see if she was okay. But Sue wasn't okay. She cried a lot and had tears in her eyes when Mike showed up. The doctor talked to her and said - Its okay Sue, you just have a broken arm and it's just fine. The doctor fixed Sue's broken arm and then Mike drove her home and they had a nice dinner of chicken soup, to make Sue feel better. Mike tucked Sue into bed and gave her a big hug and Sue said she would be very careful next time she went out riding.

*In this story Sue asks for Mike because he'll know what to do. She seeks out her "secure base." Mike does his part. He takes her home, and they have chicken soup to make Sue feel better. Mike goes on to tuck her in and give her a big hug. She says that she'll be more careful next time. Things are back on track. The story has a secure base script but less elaboration than a "7" or "6."*

### **The Accident - Scale score 4**

Early one spring morning, Sue decided to go out for a bike ride. She always rode in the woods, close to the house. So she had her helmet on and she was riding for about an hour when her bike hit a huge rock and threw her from the bicycle and she smashed her head on a tree stump. Along came another biker that immediately decided to get her some doctor's attention, so he called 911, and an ambulance came and took her to the hospital. She went in to see the doctor. She was very upset and a little bit disoriented because she had smashed her head. Her husband Mike had been notified and went to the Emergency room also. He was waiting in the waiting room while the doctor's checked Sue out. He finally got to go in and see how she was, and the doctor said that there was no concussion, just a bad bump on the head and that he could take her home. So they left the hospital shortly after that, went home, had some soup, something mild to eat, and Sue was still pretty shaken up so he was comforting her, giving her some hugs and kisses, and making her comfortable in bed, and then they went to sleep.

*This story has less elaboration and detail about the interaction between Mike and Sue. There is little in the way of a reunion at the hospital. However once they are home Mike does take steps to comfort Sue, not only giving her something to eat but giving her hugs and kisses. His concern about Sue's welfare, expressed at the end of the story gives this story a "4." There is some secure base content.*

### **The Accident - Scale score 3**

One day Susie was out driving on her way to Home Depot and she came upon an accident. She was looking at it as she passed by and couldn't believe what had happened. While being distracted as she passed by the accident she didn't realize that there was a car stopped in front of her and she got into an accident. The ambulance was called and Susie was taken to the hospital. Waiting in the waiting room was Mike, her boyfriend. He was not sure what was wrong with Sue, so he was crying in the waiting room. The doctor came up to him and told him what was wrong with Susie. She was fine, she just needed a couple of stitches and shots. After she was all done, Mike took her home, made her a special

dinner, gave her a hug, and put her to bed.

*This is an event-focused story with little psychological content, and nothing much in the way of interaction between Mike and Sue. The story is a "3."*

### **The Accident - Scale score 2**

Sue had an accident on the road. She went into the hospital. Mike was waiting there for her. He was crying. The doctor said that she would be okay and Mike took her home. He made her dinner and put her to bed and gave her a hug.

*This story receives a "2" because of its brevity.*

### **The Accident - Scale score 2**

One day Mike was driving home from work. Sue was waiting for him at home. Sue was making dinner as usual and was wondering what was taking Mike so long to get home. Mike was in an accident. He drove off the road. Mike was rushed to the hospital and tears came to Sue's eyes when she got the phone call. She went to the hospital and the doctor said he would be fine and that he could go home and rest in bed. She was so happy she hugged the doctor and they went home.

*This story receives a "2" because of the combination of the relative brief presentation and some odd content. It is event-focused so its going to be a "3" or less. But it's also a bit brief and has an odd ending in which Sue directs her attention to the doctor, not Mike. It's the doctor she hugs. So it's a "2."*

### **The Accident - Scale score 1**

This is the accident that I wanted to tell you about, that involved Sue and Mike, well actually, it just involved Sue. Sue should not have been on the road that night. I mean, after 'Happy Hour' she was totally smashed. She should not have been driving. But she insisted on getting on the road. So, let her go. Of course, she got in an accident. We all knew that this would happen, it wasn't even a surprise. I got the call from the hospital, and she wanted me to just wait where I was, and not go to the hospital, so I can let Mike know when he got home. So I was waiting, and Mike finally came home. I told him.

He ran up to the hospital. I mean I know her and she was just, when I spoke to her on the phone, she was just tearing, tears, I mean I could just hear the tears in her voice. Then I heard that Mike was able to go up and speak to the doctor, and really everything was fine. She just really got shaken up during the accident. So they came home to my house that night. I made dinner, everything was good, she was relaxed. They went to bed. I mean that's when Mike came down and just gave me a big hug to say thanks for everything I did for them.

*This storyline has some unusual twists and turns. The story teller intrudes into the story, but the point at which this story receives a "1" for significant "odd" content is when it turns out that it's the third person in the story who provides comfort for Sue and for Mike. She's the one who makes the dinner for Sue, so she can relax. And she is the person whom Mike thanks. Mike and Sue never interact, but Mike has the time to give this third person a big hug.*

#### **IV. Neutral Stories – Prototypic Script Rankings**

Two neutral prompt word outlines were also developed to guide story productions about non-attachment scenarios, one involved a child and her friend (Trip to Park), the other an adult and her friend (An Afternoon Shopping). For each story there was an implied script that guided the rankings of story versions produced from these outlines. For "Trip to the Park" it was a standard, two little girls go the park and play script. The temporal/behavioral sequencing of the script, as implied by the prompt word outline is as follows: two little girls ride to the park, play on the swings, in the sandbox, run around, become tired, sit down, read comics and have a coke, and then go home. For "An Afternoon Shopping" it was the standard "mall" script. The temporal/behavioral sequencing of the script is as follows: two friends drive to the mall, browse among the stores, buy a small gift, decide they are hungry, sit down to eat and talk, and then go home.

High scoring stories were those that followed each script without deviations or unusual content, focusing only on filling in the details as appropriate to the particular script. Somewhat lower scored stories followed the implied script, but with increasingly less detail, i.e., a more or less abbreviated version of the script, a "bare bones" rendition. Stories scored even lower were those that deviated from the script. In some cases it was just some unusual/less typical content, in other cases there was a redirection of the script (e.g., two little girls go to the park and pretend they are mommies, or two friends go to the mall to try on new clothes in celebration of a successful diet).



The following two pages present each prompt word outline of the two neutral stories. Sample stories that span the range from highly scripted to abbreviated scripts to those with unusual content and redirection of the script are available upon request. The neutral stories are part of the narrative battery in order to provide breadth in the story lines and prevent subjects from zeroing in on the intent of the assessment. Scores on the “Park” or “Mall” scripts are not highly correlated with the secure base script scores and we do not recommend that these stories be scored.

### **E. Trip to Park**

<b>Susie</b>	<b>swings</b>	<b>tired</b>
<b>bike</b>	<b>sandbox</b>	<b>bench</b>
<b>park</b>	<b>game</b>	<b>comics</b>
<b>friend</b>	<b>run</b>	<b>coke</b>

As indicated above the Trip to Park story line follows a standard script in which two girls ride their bikes to the park and play for a while until they become tired and sit down with some cokes and comics.

### **F. An Afternoon Shopping**

<b>Emily</b>	<b>browse</b>	<b>hungry</b>
<b>car</b>	<b>buy</b>	<b>food</b>
<b>all</b>	<b>money</b>	<b>talk</b>
<b>friend</b>	<b>gift</b>	<b>home</b>

As indicated above the Afternoon Shopping story line follows a standard script in which two friends drive to the mall, browse through the stores for a while, then buy a small gift, and sit down to eat and talk when they become tired, and then go home.

## Appendix E

**Note:** The scoring material here is abstracted from Ainsworth, Blehar, Waters & Wall (1978) , *Patterns of attachment*. Hillsdale, NJ: Erlbaum. The commentary and the similarity matrix are my own. References to the latter should cite Waters, E. (2002). Comments on Strange Situation Classification. Retrieved on (date) from <http://www.johnbowlby.com>.

# The Ainsworth Strange Situation

## Procedure

In order to classify infants observed in the Strange Situation it is necessary that the procedure have been run properly. Strict conformity to ideal procedures and timing are not necessary. For example, mother can well leave her purse with the experimenters rather than leaving it in the room for the first separation (as described in the original instructions). In addition, the instruction to the mother to “get the baby interested in the toys, sit in your chair, don’t initiate play but be responsive if he initiates it” necessarily creates considerable variation in maternal behavior. Most importantly, the length of separations and reunions **MUST** be adjusted adaptively. If after a full minute of crying it is obvious that he will not calm down on his own, you should move on to the next episode. Allowing the baby to become extremely distressed is uninformative and disrupts behavior in subsequent episodes. Similarly, reunion episodes should be extended if necessary to allow reasonable comforting before introducing a second separation. (It may be useful to record beyond the end (3 min.) of the final episode in order to document that the infant eventually recovers and how. But scoring absolutely should not include behavior beyond the end of Episode 8).

## The Video Record

There should *always* be a sound and video record of the Strange Situation procedure. It is not possible to reliably score the procedure by observing it as it occurs. The video record should provide information about the context (when someone enters or leaves, what the adults are doing if it attracts baby’s attention, etc). It should also provide a full view of the infant as often as possible. Focusing on details of facial expression and how toys are manipulated is **NOT** helpful for scoring. Posture and movements of the arms and legs (e.g. kicking, stiffening, pushing or leaning away) are critically important and will be lost if the camera operator is too fond of close-ups. Camera operator briefed on these issues and review tapes with the experimenter until it is clear that scorable records are being obtained.

## Scoring

Although the methods for scoring the Strange Situation presented in *Patterns of attachment* are quite detailed and include considerable commentary to help scorers, experience has taught that at least some direct instruction is needed in order to understand exactly what the *Patterns of attachment* instructions refer to and how best to use them. A number of researchers with wide experience in Strange Situation research offer very effective 2-3 day training clinics in Strange Situation scoring. Others will provide training in their own laboratories in support of research projects that are of particular interest to them. Agreement with experienced coders should be documented in research reports.

Strange Situation classifications are based primarily on “interactive behaviors” toward the mother in the two reunion episodes (Ep. 5 & Ep. 8). The term “interactive behavior refers to behavior captured on four 7-point scales: Proximity seeking, Contact maintaining, Avoidance of proximity and contact, and Resistance to contact and comforting. Despite the emphasis on reunion episode, scoring should always be based on careful review of the entire procedure. Among other things, one has to have the pre-separation levels of play in mind in order to evaluate whether an infant has fully recovered from being distressed.

The review of the video record, especially of reunion episodes, often involves looking at critical segments (often only 5-10 second long) over and over to make sure that one understands the sequence of events in detail and has looked carefully for alternative interpretations. At first glance, an infant may seem to have pulled away or slapped at the mother, but on close review it turns out that the baby was merely anticipating some behavior signaled by the mother touching, reaching for a toy, or merely adjusting her posture. In real time, these are often missed (or seen in incorrect order). Critical moments should be reviewed closely before scores are assigned.

Traditionally, the interactive behaviors toward mother and Stranger are scored, and crying in each episode timed, before assigning classifications. Scoring Strange Situations can be quite demanding. Scoring the interactive behavior scales and crying are a useful way to insure that each case is studied in detail and well understood before classifications are assigned. In addition, the interactive behavior and crying scores can be useful in themselves. As descriptive information about a sample, as independent and dependent variables, and as inputs to discriminant functions that provide continuous scores on security vs. insecurity and avoidance vs. resistance. (see Richters & Waters, 1988, *Child Development*, 59, 512-522.) In any event, the procedure for assigning classifications (i.e., whether interactive behavior was first scored, etc.) should be mentioned in research reports.

## **Scoring System for Interactive Behaviors In The Strange Situation**

### **PROXIMITY- AND CONTACT-SEEKING BEHAVIOR**

This variable deals with the intensity and persistence of the baby's efforts to gain (or to regain) contact with-or, more weakly, proximity to-a person, with the highest scores reserved for behavior in which the baby both takes initiative in achieving contact and is effective in doing so on his own account. If an episode contains several instances of proximity-seeking behavior, the episode will be judged in terms of the instance that qualifies for the highest rating, unless otherwise specified below.

#### *7 Very Active Effort and Initiative in Achieving Physical Contact.*

The baby purposefully approaches the adult, creeping, crawling, or walking. He goes the whole way and actually achieves the contact through his own efforts, by clambering up on or grasping hold of the adult. The cooperation of the adult is not required. Contact is more than momentary; the baby does not turn away to other things within 15 seconds.

*Note:* In Episodes 5, 7, and 8 this top score cannot be used if the initial approach (even though it otherwise meets the above criteria) is delayed substantially (i.e., more than 30 seconds). If, however, there is an initial approach or signal for contact without substantial delay, followed later by another approach meeting the above criteria, the episode may be coded 7, even though the initial bid for contact does not qualify for this coding.

#### *6 Active Effort and Initiative in Achieving Physical Contact.*

This coding will be used for an approach and/or clamber showing initiative and active effort that nearly, but not quite, fulfills the specifications for a coding of 7.

- a. The baby purposefully approaches the adult (i.e., he does not merely happen to approach while pursuing a toy). He goes the whole way and then signals by reaching or equivalent behavior that he wants to be picked up; but he does not clamber up or hold on to make contact entirely on his own initiative. He requires the cooperation of the adult in gaining contact.
- b. The baby purposefully approaches the adult, going the whole way, and signals his desire to be picked up, but the adult does not cooperate; the adult does not pick him up or hold him, and contact is thus not achieved provided that the baby make at least two other active bids for contact within the episode, whether these are successful or not.
- c. In episode 5, 7, or 8 an approach that otherwise would be scored 7, except that it is substantially delayed, is scored 6.
- d. The baby at least three times does a full approach with clamber and/or brief contact (held only 5 to 15 seconds)-any one of these instances being too brief to qualify for a coding of 6 or 7.
- e. The baby does not begin his approach purposefully, but rather approaches in the course of exploration; finding himself close to the adult, he then completes his approach purposefully, and clambers up or holds on, achieving contact (and holding it for more than 15 seconds) on his own initiative.

#### *5 Some Active Effort to Achieve Physical Contact.*

This score will be given to an active effort to achieve contact that in one way or another does not quite fulfill the specifications of a coding of 6.

- a. The baby approaches purposefully and fully but does not end the approach even with a reach or other signal (except perhaps for a cry), but rather is picked up without any signal beyond the approach itself.
- b. The baby, being held by a stranger, cannot approach his mother through locomotion, but he does the best he can by actively and strongly straining toward her. This straining implies tension involving the whole body and goes beyond mere lifting of arms or a casual reach.
- c. The baby, either because he is at the door already or because he is put down by the stranger close to the mother, is too close to approach, but nevertheless he reaches strongly for the pick-up.
- d. In Episode 5, 7, or 8 the baby, having delayed substantially in making an active effort to regain contact, now makes a full approach ending with a signal that he wishes to be picked up (either a reach or a cry), but requires adult cooperation to achieve contact.
- e. The baby makes at least three active bids for contact (e.g., an approach, a reach, or a "directed cry") at least one of which is a purposeful reach; he may be scored 5 even though he does not complete contact in any of them, presumably because the adult does not cooperate.

*4 Obvious Desire to Achieve Physical Contact, but With Ineffective Effort or Lack of Initiative OR Active Effort to Gain Proximity Without Persisting Toward Contact.*

This middle score, as the heading suggests, is for babies who obviously desire contact but show relatively little active effort or initiative in gaining it, and for babies who are competent and effective in their approach behavior but who are content with minimal contact or with mere proximity.

- a. The baby spontaneously (i.e., before the adult approaches and/or offers her hands or invites him) signals his desire to regain contact by a reach, lean, or "directed cry" as though he expected the adult to pick him up. (A "directed cry" is a signal-like cry-either an isolated cry or a distinct increase of intensity of crying-obviously directed toward the adult; it is to be distinguished from continuous or intermittent crying that expresses distress but does not seem to be emitted as an attempt to communicate to the adult a specific desire to be picked up and to be picked up now.)
- b. The baby begins to approach the adult but goes only part of the distance, and either with or without a further signal waits for the adult, who completes the pick-up. (If, however, the baby goes a substantial part of the distance and presumably would have gone the whole way had he not been approached by the adult simultaneously, this will be counted as a full approach and given a higher score.)
- c. The baby makes repeated full approaches either without completing contact or with only momentary contact.
- d. baby makes a full approach, obviously wanting baby contact, but the adult does not cooperate and does not pick him up. (See, however, 6b and 5e for specifications of nonreciprocated approaches that may be given higher scores.)
- e. The baby makes a full approach that ends in contact (either on the baby's initiative or with the adult's cooperation), but he does so only after the adult has invited him to do so by offering her hands or by otherwise coaxing him to come.

*3 Weak Effort to Achieve Physical Contact OR Moderately Strong Effort to Gain Proximity*

The baby may display a desire to gain contact but a relatively weak or ineffective effort to implement his desire. Or he may take initiative in approaching the adult in order to interact with her or merely to increase proximity. In the latter case it is quite obvious that the baby does not achieve contact because he does not especially seek it, not because the adult disappoints him by her lack of cooperation.

- a. The baby is distressed, crying, and may be presumed to want contact because he stops crying or at least substantially lulls when he is given contact; but he does not give any specific signal that he wants contact - neither a reach nor an approach nor a "directed cry."
- b. As above the baby is distressed and crying and does reach, lean, or even slightly crawl to indicate his wish for contact-but only after the adult has begun pick-up or has offered her hands, or after a long delay.
- c. The baby makes a spontaneous full approach but neither makes contact nor seems to want to do so. Instead he offers a toy or initiates some other kind of interaction, or he seems content with mere proximity.

- d. The baby makes a spontaneous full approach and either merely touches the adult in an exploratory way or pulls himself into a standing position, giving the clear impression that he is using the adult as he would a chair or other inanimate support and that sustained contact is not the goal. (If, however, the baby remains steadying himself against the adult, he will be assumed to desire contact even though he seems off-hand about it, and will be given a higher score. Category 3d is only for momentary contact of this sort.)
- e. The baby spontaneously and deliberately signals his desire for contact with a reach (and with no cry) but, in the face of lack of response from the adult, he does not persist in his bid for contact. (The absence of the cry implies a relatively weak desire for contact.)
- f. The baby, having been invited by the adult to approach across a distance, makes a full approach, which ends neither in contact nor with a signal indicating a wish for contact.

*2 Minimal Effort to Achieve Physical Contact or Proximity.*

- a. The baby begins to approach (in a sort of intention movement) but stops, having gone only a short way, and does not follow up this beginning with any further signals of a desire for contact.
- b. The baby seems to be making a full approach, but changes direction to approach something else, or passes beyond the adult—for example, to go out the door, to the door, or to explore something beyond the adult, without pause for any kind of interaction en route.
- c. After the adult offers her hands, the baby reaches in an almost automatic gesture. The weakness of desire for contact (with the mother) is underlined by the fact that the baby is not even crying when the invitation is given.

*1 No Effort to Achieve Physical Contact or Proximity.*

Episodes will be scored I whenever the baby is occupied with play and exploration—or with desperate crying—and pays little attention to the adult. In addition, episodes will be scored I in which are displayed the following behaviors, which are considered to indicate no effort (and no real desire) to achieve contact proximity.

- a. The baby merely looks, or smiles, or interacts across a distance without any increase of proximity or any signal indicating that contact is desired.
- b. The baby accepts contact, even being picked up, but merely accepts it. He did not indicate his wish for it by a cry, approach, or reach. Even though he had been crying, he shows that he had no particular desire for contact (and this occurs especially with the stranger) by the fact that he neither diminishes his crying nor hugs, clings, nor holds on.
- c. The baby approaches accidentally in the course of exploration or pursuing a rolling toy, and neither makes contact with the adult nor pauses to interact with her when he comes to her.

## **CONTACT-MAINTAINING BEHAVIOR**

This score deals with the degree of activity and persistence in the baby's efforts to maintain contact with the adult once he has gained it, having either approached her to make contact himself or been picked up either with or without having signaled his desire to be picked up. The relevant episodes for interaction with the mother are 2, 3, 5, and 8. The relevant episodes for the stranger are 3, 4, and 7— and, in a few instances, also 8.

Although the baby's behavior is the focus of attention here, it must be viewed within the context of interaction with the adult. Because the adults, as well as the babies, differ in the extent to which they initiate or accept contact, each of the score points has several alternatives, in an attempt to encompass a variety of contingencies.

*7 Very Active and Persistent Effort to Maintain Physical Contact.*

- a. The baby, in the course of contact lasting over 2 minutes, shows at least two instances of active resistance to release or to cessation of contact and indeed these efforts are in part responsible for the long period of contact. These efforts include clinging when the adult shifts his position in her arms or attempts to put him down, turning to clutch the adult or to clamber up on her again soon after being put down, or turning to the adult to make closer contact.
- b. The adult holds the baby for 2 minutes or more, but does not attempt to release him. The baby, meanwhile, embraces the adult, or sinks in, or reclines against her in a relaxed manner, or otherwise clings to her.

- c. The baby initiates contact and remains in contact (e.g., standing holding on to the mother's knee) for over 2 minutes and in addition shows at least two instances of active resistance to cessation of contact.

*6 Active and Fairly Persistent Effort to Maintain Physical Contact.*

- a. The baby, in the course of contact lasting between 1 and 2 minutes, 'shows at least one instance of active resistance to release (e.g., by clinging, clambering up, etc.). For the rest of the period of contact, he may be more passive, but even then he shows his desire for contact by sinking in, holding on, or reclining against the adult.
- b. The baby, having spontaneously approached the adult, sustains contact for longer than 1 minute, and shows at least one active clambering or resisting cessation of contact after the initial behavior that made the contact.
- c. The baby, in the course of contact lasting longer than 2 minutes, clings or, if an attempt is made to release him., actively resists it; but when finally put down, he merely cries and makes no active effort to regain contact.

*5 Some Active Effort to Maintain Physical Contact.*

- a. The baby, in the course of contact lasting for less than a minute, shows one marked instance of resistance to release (clinging on attempted release, clambering up after being put down, turning to the adult to make closer contact), which, as it turns out, does result in maintaining contact or at least in delaying the release.
- b. Or, he shows two instances of active behavior of this sort, neither of which results in more than brief contact.
- c. Or, having actively initiated contact by clambering up (or some similarly active behavior), he resists release once even though this may not be a marked instance of resistance.
- d. The baby is held by the mother for more than a minute; the baby may be crying and/or clinging, but he makes no active effort to resist release or to clamber up again after being put down-although he may perhaps reach a little. The point here is that the baby shows his desire for contact by clinging or by diminishing crying, but the adult's response to his behavior (continued holding) gives him no opportunity to demonstrate more active behavior in maintaining physical contact, at least not until after the contact has been long enough for him to be thoroughly comforted.
- e. Or, the baby is held for less than a minute, clinging markedly, and protests strongly when put down, even though he may not actively attempt to clamber up or to clutch at the adult in resistance to release.

*4 Obvious Desire to Maintain Physical Contact but Relatively Little Active Effort to Do So.*

- a. The baby has been held, perhaps clinging a little, perhaps having diminished his crying when picked up; when put down he decisively protests, giving more than a brief cry.
- b. The baby was picked up when he was quite distressed; although he seems not to have been truly comforted by the contact; nevertheless he shows his desire to maintain contact by clinging markedly.
- c. The baby, having been picked up when crying, quiets, perhaps with some clinging; after being held for *less than 1 minute*, he is put down; he either makes no protest, or the protest is both considerably delayed and minimal. He may, however, signal briefly by reaching that he would like to maintain contact, but he makes no more effective effort than this to do so.
- d. The baby, having been held, is released; he resists release briefly, by attempting to hold on or by clinging briefly, but when this is ineffective he accepts the release without protest and without further effort to maintain contact.

*3 Some Apparent Desire to Maintain Physical Contact but Relatively Little Active Effort to Do So.*

- a. The baby initiates contact twice or more during the episode-by approaching and by touching or by clambering up-but each contact is held only briefly and then broken either by the baby himself or by the adult, with no protest or resistance from the baby.
- b. The baby initiates contact once during the episode and shows some additional active attachment behavior (beyond that necessary to achieve contact-e.g., clutching, burying the face, reclining against the adult), but does not persist in the contact for more than a few moments, and spontaneously breaks away.

- c. The adult initiates the contact, picking the baby up or holding him, with perhaps a signal from the baby (cry or reach); the baby accepts the contact but does not cling; when he is put down he protests briefly with a cry (not merely with an unhappy noise or cry face).
- d. The adult initiates the contact, perhaps after a signal from the baby; the contact persists for a minute or more; the baby accepts the contact passively and gives the impression of, liking it; but when he is put down he makes no protest.

*2 Physical Contact, but Apparently Little Effort or Desire to Maintain It.*

- a. The baby initiates contact no more than once during the episode, and either breaks it off himself after a few seconds, or, if the adult makes the break, makes no effort to maintain the contact.
- b. The adult initiates contact, and the baby either accepts it briefly and then breaks it or gives a brief, minimal protest (unhappy noise or cry face) when put down.
- c. The adult picks up the baby, who is very distressed; the baby accepts the contact, but, although his crying may diminish, he is not really comforted. When he is put down, he cries and may cry more intensely, but this does not seem so much a definite protest against the cessation of contact as a response to the whole distressing situation. The point is, however, that even though he is very distressed, he seems somewhat less distressed when in contact with the adult than when he is not.

*1 Either No Physical Contact or No Effort to Maintain It.*

- a. The baby is not held or touched.
- b. Or, if picked up, he neither clings nor holds on, and when he is put down he makes no protest; if he is not put down he may still be coded 1 if he seems indifferent to being held. Furthermore, he has taken no initiative in making the contact in the first place.

## **RESISTANT/AMBIVALENT BEHAVIOR**

This variable deals with the intensity and frequency or duration of resistant behavior evoked by the person who comes into contact with or proximity to the baby, or who attempts to initiate interaction or to involve him in play. The mood is angry-pouting, petulance, cranky fussing, angry distress, or full blown temper tantrums. The relevant behaviors are: pushing away, throwing away, dropping, batting away, hitting, kicking, squirming to be put down, jerking away, stepping angrily, and resistance to being picked up or moved or restrained. More diffuse manifestations are: angry screaming, throwing self about, throwing self-down, kicking the floor, pouting, cranky fussing and petulance. These behaviors may alternate with active efforts to achieve or maintain contact with (or proximity to) the person who is being rejected. If both kinds of behavior are marked, the baby's behavior could be scored high in both variables.

One is reminded of the "weaning tantrums" of infant monkeys. The implication is that the baby rejects his mother, being angry with *her* for having left (rejected, abandoned) him. Often enough it is clear that he rejects toys that are offered to him as a redirection of rejection of or anger toward the person who offers them. It seems likely that the rejection of the stranger is either a redirection of anger at the mother or anger at the stranger because she is not the mother. This latter point raises the question of distinguishing "fear" of strangers from this kind of rejection. For the sake of consistency, all instances of resistance to the stranger have been included in this scale, including clear protest at the entrance of the stranger (in Episode 7), or her approach, or her attempt to make contact. Similar protests at the return or approach of the mother are also included here.

*7 Very Intense and Persistent Resistance.*

The baby shows *two or more* of the following behaviors in the episode being coded:

- a. Repeated hitting of the person, or other similar directed aggressive behavior;
- b. Strong resistance to being held, shown by pushing away strongly, struggling, or strongly squirming to be put down;
- c. A full-blown temper tantrum, with angry screaming-the baby either being rigid and stiff or throwing himself about, kicking the floor, batting his hands up and down, and the like;
- d. Angry resistance to attempts of the adult to control the baby's posture, location, or action;
- e. Strong and repeated pushing away, throwing down, or hitting at toys offered to him.

*6 Intense and/or Persistent Resistance.*

Any *one* of the following behaviors:

- a. Repeated or persistent temper tantrum, with throwing self about, kicking, and/or rigid, stiff, angry screaming;
- b. Very strong and/or persistent struggle against being held;
- c. Definite and repeated rejection of the person, even in the absence of directed aggression or angry screaming;
- d. Repeated, strong rejection of toys-pushing away, throwing down accompanied by an angry cry or fuss;
- e. A combination of less intense manifestations of resistance, including squirming to be put down, resistance to interference, refusal of contact, rejection of toys, and petulance.

*5 Some Resistance, Either Less Intense, or, if Intense, More Isolated and Less Persistent Than the Above.*

Any one of the following:

- a. Repeated rejection of toys (e.g., dropping or throwing down) but with no strong pushing away or batting away. The rejection does not seem as angry as in scores of 6 or 7. At least *three* such behaviors.
- b. Persistent resistance to the adult when she seeks interaction-but without the intensity of struggling, pushing away, hitting, and so on of the higher scores. An example would be a fuss or increased intensity of crying whenever the adult approaches, offers a toy, and the like.
- c. Resistance to being held by the mother, shown by squirming immediately to be put down, but without the intense struggle implied in the higher scores.
- d. Persistent low-intensity pouting or cranky fussing, with at least *one* other manifestation of rejection, such as protesting interference, rejection of a toy, and the like.

*4 Isolated but Definite Instances of Resistance in the Absence of a Pervasive Angry Mood.*

Any one of the following:

- a. Refusal of contact with the stranger. One definite, initial refusal, but without any implications of intense struggle.
- b. Two refusals of toy, or kicking movements, or resistance to interference, accompanied by a cry, but without any other manifestations of rejection or angry mood.
- c. One strong but isolated behavior, accompanied by a cry-for example, angry stepping when put down, one strong refusal of toy (strong push or batting away), stiff steps when approaching (as though showing bodily resistance), and the like.
- d. One manifestation of resistance to being held by the mother, less definite than above for example, a slight jerk or push away in the context of apparent "wanting to be held," or a definite squirm to be put down after accepting contact for at least 15 seconds.

*3 Slight Resistance.*

Any one of the following:

- a. Two instances of resistant (or aggressive) behavior that is neither intense nor strong and is not accompanied by crying-for example, little kicks of the feet, dropping toys, and the like.
- b. One instance of resistant (or aggressive) behavior if accompanied by a pout or protest, or in itself fairly intense (and yet not covered by higher scoring categories).
- c. A marked pout, not prolonged enough to warrant a score of 5 and not accompanied by other manifestations of resistance or aggression.

*2 Very Slight Resistance.*

Any one of the following, with no other manifestations of resistance:

- a. One isolated instance of nonintense resistance-for example, a little kick of the legs when being picked up.
- b. One brief, slight protest noise when the adult enters, or advances, or picks the baby up.

*1 No Resistance.*

None of the above behaviors. The baby either accepts or is unresponsive to proximity, contact, or interaction offered by the adult or he may merely avoid it. He may be occupied with other things, or he may be crying



and not increase the intensity of his cry when approached by the adult. *Note:* Because babies nearly always resist having their noses wiped, such behavior will not be scored as resistant.

## AVOIDANT BEHAVIOR

This variable deals with the intensity, persistence, duration, and promptness of the baby's avoidance of proximity and of interaction even across a distance. The relevant behaviors are: increasing distance between self and the person, whether through locomotion or by leaning away from; turning the back on the person; turning the head away; averting the gaze; avoidance of meeting the person's eyes; hiding the face; or simply ignoring the person. Ignoring the person does not refer, however, to mere exploration of the environment, especially in Episodes 2 and 3. Ignoring or avoiding the person is most marked when she is trying to gain the attention of the baby or to get a response from him. It also may be considered avoidance if the baby ignores the mother's entrance to the room after an absence, whether or not she seeks a response from him, or if he does not respond to the entrance of the stranger or to her attempt to engage him in play or interaction.

This variable deals chiefly with interaction across a distance, whereas the resistance variable is concerned with interaction in contact or in close proximity. The two sets of behaviors are usually easy to distinguish, because resistance is so frequently tinged with anger or aggressive movement, while avoidance seems either to be neutral in tone or perhaps to reflect apprehension. The more neutral the tone of the avoidance, however, the more likely it seems to be defensive in character—a defense that hides feelings, perhaps including those of resentment.

Although in the case of the other variables, behavior in interaction with mother or stranger could be comprehended in the same categories, in this coding it seems necessary to distinguish between mother and stranger.

### *7 Very Marked and Persistent Avoidance.*

*Of mother:* The baby does not greet the mother upon her return in a reunion episode (episode 5 or 8)—neither with a smile nor with a protest. He pays little or no attention to her for an extended period *despite the mother's efforts to attract his attention*. He ignores her, and may turn his back to her. If his mother nevertheless picks him up, he remains unresponsive to her while she holds him, looking around, seemingly interested in other things.

*Of stranger:* The baby repeatedly and persistently avoids the stranger, by some kind of strong behavior, either locomotor withdrawal or hiding the face, perhaps combined with looking away. In Episode 3 the baby may go to his mother in his repeated withdrawals from the stranger.

### *6 Marked and Persistent Avoidance.*

*Of mother.* (a) The baby behaves as above, giving the mother no greeting, except perhaps an initial look, and paying little or no attention to her for an extended period; but in this case the mother does not persist in her attempt to gain the baby's attention—she merely greets him and then sits quietly. *Or* (b) the baby greets his mother, perhaps with a smile or a fuss or with a partial approach, and then behaves as above, paying little or no attention to the mother for an extended period, despite the mother's efforts to attract his attention.

*Of stranger:* This score is reserved for an episode in which the end of the episode comes before it is confirmed that the baby's avoidance would have been repeated and persistent. The baby strongly withdraws from the stranger with behavior and in a context that makes it seem very probable that the avoidance would have been persistent had the episode not ended.

### *5 Clear-Cut Avoidance But Less Persistent.*

*Of mother:*

- a. The baby may look, but gives the mother no greeting, then looks away, or turns away and ignores the mother for about 30 seconds, during which time the mother makes no special effort to gain his attention; then he looks again and seems more responsive to her, but he does not seek contact and may even avoid it if it is offered.
- b. The baby gives the mother no greeting; the mother strives to gain his attention; after about 15 seconds he gives her his attention but he is fairly unresponsive even then.

- c. The baby greets his mother or starts to approach her, but then he either markedly turns away (or looks away) or tries to go past her out the door; he ignores her efforts to gain his attention for an appreciable time, although he may then respond by approaching, reaching, or accepting a toy.

*Of stranger:* The baby repeatedly and persistently avoids the stranger, but without the intensity of the avoidance implicit in a coding of 7. In Episode 3 the baby may retreat to his mother, but without apparent intense anxiety, and then later show some other clear-cut manifestation of avoidance of the stranger. Regardless of the episode, the baby clearly does not want to have anything to do with the stranger-neither contact nor interaction-but his efforts to avoid her do not have the frantic persistence of those coded 7.

#### *4 Brief But Clear-Cut Avoidance OR Persistent Low-Keyed Avoidance.*

*Of mother:*

- a. The baby greets his mother or starts to approach her; he then clearly turns away or looks away as in 5c. In this instance, however, the mother goes to her chair and sits, without making any effort to elicit responsiveness in the baby. The baby goes on playing, perhaps with occasional looks and smiles at the mother; both behave (in a reunion episode) much as the average couple in Episode 2. In view of the mother's lack of participation, one can be justified in counting only the initial avoidance behavior (i.e., that following greeting) as avoidance on the baby's part. It is assumed that he is not ignoring his mother and that he would approach her or respond to her if given a cue.
- b. The baby at first "snubs" the mother by failing to greet her and either by being slow to look at her or by looking away or both (or perhaps by trying to go out the door); but after this initial avoidance behavior, the baby responds by reaching to the mother's outstretched hands and/or by regaining responsiveness after being picked up.
- c. The baby fails to greet his mother and ignores her for a time (15 to 30 seconds) and then takes the initiative in making contact or undertaking interaction, even though the mother has not sought his attention.

*Of stranger:*

- a. The baby shows one clear-cut avoidance or several slight ones, but at least looks at the stranger and at what she is doing for part of the episode, even though there is no positive response to her.
- b. The baby persistently avoids meeting the stranger's eyes with his. He may watch her, but as soon as she looks at him he averts his gaze; but there is no stronger instance of avoidance than this.

#### *3 Slight, Isolated Avoidance Behavior.*

*Of mother:*

- a. The baby is distressed and is slow either in looking at his mother or in responding to her overtures-but then he does, either crying more loudly or reaching or both.
- b. The baby is not distressed; he looks up at his mother when she arrives, perhaps greeting her, then looks away briefly; then he is responsive, either interacting with her or exchanging looks and smiles in the course of play. He does not, however, take the initiative in seeking contact.

*Of stranger:*

- a. In Episode 3 the baby at one point retreats from the stranger to his mother, but without apparent anxiety. He does not approach the stranger, but on the other hand he does not further avoid the stranger's advances in this episode.
- b. One isolated but clear-cut instance of avoidance of the stranger, by twisting away, turning away, or moving back a little; but for the rest of the-episode the baby accepts the stranger's advances and may be fairly friendly, or, if the episode ends soon, there is no implication that the avoidance will be persistent.

#### *2 Very Slight Avoidance.*

*Of mother:* The baby may delay very briefly in responding to his mother's return or may give her a brief snub by looking away, but very soon he takes the initiative in seeking contact or interaction with or proximity to her.

*Of stranger:* One slight instance of avoidance of the stranger. The baby who is not distressed (because of separation) may look away coyly or turn away momentarily as the stranger approaches, or perhaps he may

seem to avoid her eyes for a while. The baby who is distressed by separation may not be responsive to the stranger, but he shows only one slight instance of avoidance-looking away or moving his hands away.

#### *1 No Avoidance.*

*Of mother:* The baby responds appropriately to his mother and to her behavior, neither avoiding her overtures nor ignoring her return after an absence. In Episode 2, however, he may be quite preoccupied with exploration while she sits quietly; and in Episode 3, he may be absorbed either with continuing exploratory play or with staring at the stranger.

*Of stranger:* The baby may be friendly with the stranger. He may be too distressed by his mother's absence to be friendly. He may angrily resist the stranger or the toy she offers. He may continue playing, paying little spontaneous attention to the stranger. But he does not avoid the stranger, and he at least watches her when she tries to interest him in toys.

## **Criteria for Classification In Terms Of Attachment Security Based On the Strange Situation**

Interactive Behavior scores and Strange Situation classifications are built on understanding both the organization and the fine details of behavior. It is difficult to have great confidence in either of these when you have only a brief sample of behavior to work with. In order to avoid making too much out of details that may have been misinterpreted or unrepresentative, it is important that you not base major decisions about scoring or classifications on a single bit of evidence. Especially in assigning classifications, develop a hypothesis during the first reunion and look for *converging evidence* within and across episodes. Remember: The B group is large; the A & C groups are small. In addition to being the modal classification in most samples, the B group isn't much affected if you mistakenly include an A or a C. If you mistakenly call a few B's insecure you introduce a lot of noise and lose a lot of power. It is also important to keep open the option of saying "can't classify", especially if the procedure is somehow disrupted. Sometimes a baby will fall and cry, or a Stranger will hand the baby to the mother instead of putting him down before a reunion. Things happen, people can't be seen in the camera, babies see Daddy or a stroller or other children in the hall. If you don't have the goods, don't assign scores. Finally, every experienced scorer asks for a second opinion from another lab now and then.. They'll understand.

### **Secure (Group B)**

- The baby wants either proximity and contact with his mother or interaction with her, and he actively seeks it, especially in the reunion episodes.
- If he achieves contact, he seeks to maintain it, and either resists release or at least protests if he is put down.
- The baby responds to his mother's return in the reunion episodes with more than a casual greeting-either with a smile or a cry or a tendency to approach.
- Little or no tendency to resist contact or interaction with his mother. -Little or no tendency to avoid his mother in the reunion episodes.
- He may or may not be friendly with the stranger, but he is clearly more interested in interaction and/or contact with his mother than with the stranger.
- He may or may not be distressed during the separation episodes, but if he is distressed this is clearly related to his mother's absence and not merely to being alone. He may be somewhat comforted by the stranger, but it is clear that he wants his mother.

#### Subgroup B1

- The baby greets his mother, smiling upon her return, and shows strong initiative in interaction with her across a distance, although he does not especially seek proximity to or physical contact with her.
- If picked up, he does not especially seek to maintain contact.

- He may mingle some avoiding behavior (turning away or looking away) with interactive behavior, but he shows little or no resistant behavior and, in general, seems not to have feelings as mixed as an A2 baby.
- He is likely to show little or no distress in the separation episodes.

#### Subgroup B2

- The baby greets his mother upon reunion, tends to approach her, and seems to want contact with her, but to a lesser extent than a B3 baby. Some B2 babies seek proximity in the pre-separation episodes, but not again until Episode 8, and then perhaps only after some delay.
- The B2 baby may show some proximity avoiding, especially in Episode 5, but this gives way to proximity seeking in Episode 8, thus distinguishing him from the A2 baby.
- Although he accepts contact if he is picked up, he does not cling especially, and does not conspicuously resist release.
- On the other hand, he shows little or no resistance to contact or interaction, and in general shows less sign of mixed feelings than A2 babies.
- He tends to show little distress during the separation episodes.
- He resembles a B, infant, except that he is more likely to seek proximity to his mother.

#### Subgroup B3

- The baby actively seeks physical contact with his mother, and when he gains it he is conspicuous for attempting to maintain it, actively resisting her attempts to release him. Most B3 babies show their strongest proximity-seeking and contact-maintaining behavior in Episode 8, but some do so in Episode 5 and are so distressed in the second separation episode that they cannot mobilize active proximity seeking and resort to signaling. Occasionally, a baby who seems especially secure in his relationship with his mother will be content with mere interaction with and proximity to her, without seeking to be held.
- At the same time, the B3 baby may be distinguished from other groups and subgroups by the fact that he shows little or no sign of either avoiding or resisting proximity to or contact or interaction with his mother.
- He may or may not be distressed in the separation episodes, but if he shows little distress, he is clearly more active in seeking contact and in resisting release than B1 or B2 babies.
- Although his attachment behavior is heightened in the reunion episodes, he does not seem wholly preoccupied with his mother in the pre-separation episodes.

#### Subgroup B4

- The baby wants contact, especially in the reunion episodes, and seeks it by approaching, clinging, and resisting release; he is, however, somewhat less active and competent in these behaviors than most B3 babies, especially in Episode 8.
- He seems wholly preoccupied with his mother throughout the strange situation. He gives the impression of feeling anxious throughout, with much crying. In the second separation, particularly, he seems entirely distressed.
- He may show other signs of disturbance, such as inappropriate, stereotyped, repetitive gestures or motions.
- He may show some resistance to his mother, and indeed he may avoid her by drawing back from her or averting his face when held by her. Because he also shows strong contact-seeking behavior, the impression is of some ambivalence, although not as much as is shown by Group-C infants.

### **Insecure Avoidant (Group A)**

- Conspicuous avoidance of proximity to or interaction with the mother in the reunion episodes. Either the baby ignores his mother on her return, greeting her casually if at all, or, if there is approach and/or a less casual greeting, the baby tends to mingle his welcome with avoidance responses; turning away, moving past, averting the gaze, and the like.

- Little or no tendency to seek proximity to or interaction or contact with the mother, even in the reunion episodes.
- If picked up, little or no tendency to cling or to resist being released.
- On the other hand, little or no tendency toward active resistance to contact or interaction with the mother, except for probable squirming to get down if indeed the baby is picked up.
- Tendency to treat the stranger much as the mother is treated, although perhaps with less avoidance.
- Either the baby is not distressed during separation, or the distress seems to be due to being left alone rather than to his mother's absence. For most, distress does not occur when the stranger is present, and any distress upon being left alone tends to be alleviated when the stranger returns.

#### Subgroup A1

- Conspicuous avoidance of the mother in the reunion episodes, which is likely to consist of ignoring her altogether, although there may be some pointed looking away, turning away, or moving away. If there is a greeting when the mother enters, it tends to be a mere look or smile.
- Either the baby does not approach his mother upon reunion, or the approach is "abortive" with the baby going past his mother, or it tends to occur only after much coaxing.
- If picked up, the baby shows little or no contact-maintaining behavior. He tends not to cuddle in; he looks away; and he may squirm to get down.

#### Subgroup A2

- The baby shows a mixed response to his mother on reunion, with some tendency to greet and to approach, intermingled with a marked tendency to turn or move away from her, move past her, avert the gaze from her, or ignore her. Thus there may be moderate proximity seeking, combined with strong proximity avoiding.
- If he is picked up, the baby may cling momentarily; if he is put down, he may protest or resist momentarily; but there is also a tendency to squirm to be put down, to turn the face away when being held, and other signs of mixed feelings.

### **Insecure Resistant (Group C)**

- The baby displays conspicuous contact- and interaction-resisting behavior, perhaps especially in Episode 8.
- He also shows moderate-to-strong seeking of proximity and contact and seeking to maintain contact once gained, so that he gives the impression of being ambivalent to his mother.
- He shows little or no tendency to ignore his mother in the reunion episodes, or to turn or move away from her, or to avert his gaze.
- He may display generally "maladaptive" behavior in the strange situation. Either he tends to be more angry than infants in other groups, or he may be conspicuously passive.

#### Subgroup C1

- Proximity seeking and contact maintaining are strong in the reunion episodes, and are also more likely to occur in the pre-separation episodes, than in the case of Group-B infants.
- Resistant behavior is particularly conspicuous. The mixture of seeking and yet resisting contact and interaction has an unmistakably angry quality and indeed an angry tone may characterize behavior even in the pre-separation episodes.
- Angry, resistant behavior is likely to be shown toward the stranger as well as toward the mother.
- The baby is very likely to be extremely distressed during the separation episodes.

#### Subgroup C2

- Perhaps the most conspicuous characteristic of C2 infants is their passivity. Their exploratory behavior is limited throughout the strange situation, and their interactive behaviors are relatively lacking in active initiative.

- Nevertheless in the reunion episodes they obviously want proximity to and contact with their mothers, even though they tend to use signaling behavior rather than active approach, and protest against being put down rather than actively resist release.
- Resistant behavior tends to be strong, particularly in Episode 8, but in general the C2 baby is not as conspicuously angry as the C, baby.

### **Insecure Disorganized (GROUP D)**

This classification was not included in Ainsworth's original scoring system. It can usually be ignored in research with normal mothers and infants because it is too rare (usually < 5%) to significantly affect results. It is more common when mothers or infants are drawn from a known clinical population. In these cases, the Disorganized classification should be scored, if only in order to see whether secure vs. insecure results are primarily due to infants showing this atypical behavior.

The Disorganized classification has a wide range of correlates. At the same time, it is not yet clear how it should be understood. Just because behavior occurs in the Strange Situation does not make it "attachment behavior". A key to the Disorganized classification is that the behavior is not pervasive in the Strange Situation but is limited to reunion episodes. Nonetheless, it is not yet clear whether this behavior reflects (a) primarily an attachment problem or (b) a developmental problem that leads to difficult interactions and thus to an attachment problem, or (c) odd behavior that is evident in the stress of the Strange Situation but not necessarily associated with secure base behavior at home. Any of these would likely have a wide range of correlates. See Main & Solomon's chapter in Greenberg et al. (1990) *Attachment in the preschool years* for a description of the classification criteria for the Disorganized classification. See the chapters in Solomon & George (1999) *Disorganized attachment* for discussions of the concept, its markers, and correlates.

## **The Strange Situation Similarity Matrix: An Aid To Correct Classification**

**Everett Waters**

For many who are new to the Strange Situation, the complex set of classification and sub-classification options is a major obstacle to learning the scoring systems and using them reliably. In fact, the task is much simpler than it appears. Experienced scorers use critical information to quickly form an impression of what the subject's classification might be. They then look for further information that either confirms this preliminary classification or points toward an alternative. Experienced scorers know that for any preliminary classification there are really only a few plausible alternatives. The tables below summarize, for each Strange Situation and AAI classification, the alternative classifications that need to be examined closely. They should make both classification systems easier to learn and use reliably.

Also useful is Patterns of attachment, Table 33 (attached). It provides subgroup means and standard deviations from Ainsworth's large Baltimore sample of middle-class home-reared one-year-olds. Because the ns in some sub-researchers first learning the Strange Situation classification system are often struck with the impression of overwhelming complexity. In fact, you don't need to keep all the scoring criteria in mind all the time. Experienced coders quickly rule out classifications that are entirely implausible, develop some ideas for one or two most likely classifications, and then go about deciding among them. Even when a classification seems "easy", experienced scorers check the most likely alternative classifications before making a final decision.

In both instances, it is useful to know which classifications are most likely alternatives (or most easily confused with) which other classifications. The most likely alternative to a classification is not necessarily the adjacent categories. That is, the most likely alternative to C1 is not C2 but A2, etc. The Strange Situation Similarity Matrix summarizes the "proximity" among classifications.

To use the Matrix, simply locate the row corresponding to your preliminary classification decision. Read across the row to find the most likely alternative classification (dark blue) and the next most likely classifications. Focus on deciding among these alternatives. This should make the task much easier.

Here's the Matrix. Some commentary of decisions associated with each classification and its alternatives follow...

**If**

**A1:**

Ep.

less

like and

**Possible Alternative Classification**

		A1	A2	B1	B2	B3	B4	C1	C2
Preliminary Classification	A1		Next Most Likely Alternative	Most Likely Alternative	Next Most Likely Alternative				
	A2	Next Most Likely Alternative						Most Likely Alternative	
	B1	Most Likely Alternative			Most Likely Alternative				
	B2	Next Most Likely Alternative		Most Likely Alternative		Most Likely Alternative			
	B3				Next Most Likely Alternative				
	B4							Most Likely Alternative	Most Likely Alternative
	C1		Most Likely Alternative						Most Likely Alternative
	C2							Most Likely Alternative	Next Most Likely Alternative

Most Likely Alternative ■ Next Most Likely Alternative ■ Not Likely

**Preliminary Classification is:**  
Consider A2, B1, and B2. is marked by high avoidance - same level or increasing from Ep. 5 to 8. A2 shows similar avoidance PLUS marked contact resisting and anger. Like A1, B1 shows avoidance but usually to a lesser degree and often in second reunion. Key difference is that B1 shows a lot of distance interaction with mother in pre-separation and reunion episodes. B2 deserves a look because, A's, they tend not to cry they do little proximity seeking and little distance interaction. Sometimes their lack of clear B-like behaviors is (mistakenly) taken as avoidance. If

avoidance is clear, persistent, and/or increases from Ep. 5 to Ep. 8, go with A1. If the child is just uninterested or inactive, go with B2. Although B2's are described as unlikely to cry, it is not an absolute rule.

**A2:** Consider A1 and C1. As described above, both A1 and A2 are very avoidant. The primary difference is that A2 shows marked avoidance AND at least some contact and interaction resisting. This is sometimes accompanied by crying (which is unusual in A1). Consider also C1 and assign this classification if there is crying AND avoidance is less clear than angry resistance.

**B1:** Consider A1 and B2. Neither A1 nor B1 is likely to cry during separation. Both show some avoidance. The differences are (1) A1 is more avoidant, (2) avoidance stays the same or increases from Ep. 5 to Ep. 8 in A1 and is low or decreases in B1, and (3) A1 does little distance interaction, or affective sharing in the reunion episodes. If you know how to score avoidance, the distinction is usually not too difficult. Mistaking a B1 for a B2 is probably not a grave error. They are pooled in most data analyses. The distinguishing feature is usually the active distance interaction in B1; B2 are just there, not quite B3 but not doing anything that suggests A or C.

**B2:** Consider A1, B1, and B3. A1 is very unlikely but could be the correct classification if you have seriously missed avoidance. The distinction is a little more difficult when the child is low-keyed during the reunion episodes and the mother just sits. In such cases, all you can do is hope more happens in the next separation. If you don't get clear active avoidance, it seems prudent to go with B2 rather than speculating on A1. The B1 vs B2 distinction is discussed above under B1; the key is that B1's engage in active distance interaction during reunions, for B2 it is incidental. B3: In Ainsworth's initial studies she had pairs of observers dictating parallel play-by-play onto tape during the Strange

Situation. These records were typed and used for classification. In these data B3 was the most common classification, B2 was rare. With the advent of videotape many studies find approximately equal numbers of B2 and B3. This may reflect the fact that narrators have to keep up with the flow of behavior. They may not have time to notice or include qualifying details that jump out of a video record. B3 is usually reserved for (1) full approaches or active greeting plus (2) calming in response to mother's return an/or contact, and (3) return to preseparation levels of play. B2 may fall short on any of these but does not show more than minimal avoidance or resistance. Crying can occur or not in either group.

**B3:** B3 is difficult to confuse with other classifications. There is no avoidance or resistance. Proximity seeking and/or contact is active and complete. Quantity and or quality of play usually declines during separation and recovers by the end of the reunion episodes. No avoidance; no resistance. May or may not cry. (Note: The occasional child, esp. one with day care experience, will seem not at all bothered by the separation episodes – both mood and play are maintained at preseparation levels. They are engaging with the stranger and respond to mother's return as if she were moving from room to room at home (i.e. pleasant but little proximity seeking or interaction). It is as if they knew full well that mother would be back in a moment and the separation is nothing to be upset about. In a word, the child seems not to be in the Strange Situation. There would seem to be two approaches to such a situation: (1) classify the child B3 (completely confident in M's availability, responsiveness etc.) or (2) use "Can't classify". Don't consider calling this behavior avoidant unless you have a lot of experience. (Note: It seems reasonable to find out in advance whether subjects have extensive daycare experience. It would be useful for someone to see a sample of such children in the Strange Situation and also observe their secure base behavior at home with the Attachment Q-set. This would tell us whether the Strange Situation ability to predict secure base behavior (i.e. it's validity) applies to daycare samples.)

**B4:** Consider C1 and C2. B4 is a rare classification in most populations. The key features are strong crying during separation, active proximity seeking and contact maintaining, and (most of all) calming and willingness to return to play IF MOTHER ALLOWS HIM/HER TO STAY RIGHT NEXT TO HER OR ON HER LAP. Attempts to put the child down or get him/her to play away from the mother reactivate crying and contact maintaining. Note that the contact maintaining may seem desparate but it is neither disorganized nor angry. The child just wants back up. Once you see a good example of this, it is easy to classify. Like B4, C1 and C2 are likely to cry hard. But C1 displays angry contact resisting (pushing toys away but not following with reach for contact, not sinking in when held, etc). B4's are rarely resistant - what does happen sometimes is that mother tries to push a toy on the child or put him/her down when (s)he is not ready. This predictably elicits an angry response; it is distinguished from resistance by the fact that it is followed by direct, active effort to recover the proximity or contact the child wants. C2 is not a very likely alternative. They are similar to B4 in their intense crying during separation but their proximity seeking and contact maintaining are very weak. They will sit at mother's feet and cry without reaching to be picked up. And they rarely recover to preseparation levels of play and good mood. B4's are quite purposeful in seeking contact (unless they are just too upset) and they are very active at clinging and sinking in - and they do get back to play (if Mom lets them play on or next to her).

**C1:** Consider A2 and C2. A2 displays active proximity and interaction avoidance along with some angry contact resistance. If avoidance is clear and resistance is incidental, use A2. If resistance is clear and avoidance is incidental, use C1. To experienced scorers, C1's seem angry; A2's seem avoidant.

**C2:** Consider B4 and C1. All three groups are likely to cry hard during the separation episodes. The classification criterion however is presence or absence of resistance. B4 shows competent contact seeking and maintaining and is effectively comforted by contact. C2 is passive in seeking proximity and contact and difficult to comfort. C2 differs from C1 in two respects (1) C1 is less passive than C2, they don't roll over on their sides and cry when mother return or sit at her feet and cry without reaching (2) C1's typically seem angry, they bat toys away, push off if held, throw things down, treat the mother roughly, cry angrily. C2's just cry hopelessly.

**Remember: Understand critical moments in detail. Look for converging lines of evidence for a classification decision. Keep open the option of saying "Can't classify". If necessary, get a second opinion.**

Reprinted from Ainsworth et al. (1978), *Patterns of attachment*. Hillsdale, NJ: Erlbaum



TABLE 33

Subgroup Means and Standard Deviations for Measures of Interactive Behavior With Mother in Each Relevant Strange-Situation Episode

*Episode 2 Episode 3 Episode 5 Episode 8*

*Subgroup X σ X σ X σ X σ*

*Proximity and Contact Seeking*

A1	1.50	1.00	2.00	1.54	1.33	0.65	1.42	0.67
A2	1.60	1.58	1.60	1.27	2.30	1.64	3.20	1.40
B1	1.80	1.03	2.25	1.46	2.40	1.71	2.90	1.79
B2	1.82	1.94	1.82	1.17	2.45	2.02	5.27	1.56
B3	2.19	1.90	3.11	2.40	4.44	1.90	4.98	1.36
B4	2.50	3.00	2.75	1.26	4.25	0.50	4.00	0.82
C1	2.43	2.23	4.86	2.85	3.83	1.94	4.00	1.63
C2	2.14	2.27	1.43	1.13	3.43	1.27	2.86	1.07

*Contact Maintaining*

A1	1.25	0.62	1.08	0.29	1.08	0.29	1.17	0.58
A2	1.10	0.32	1.65	1.49	1.00	0	3.05	1.61
B1	1.30	0.95	1.20	0.63	1.20	0.63	2.20	1.14
B2	1.73	1.62	1.36	1.21	1.36	0.81	4.50	1.53
B3	1.77	1.67	2.03	1.76	3.23	2.32	5.73	1.44
B4	2.75	2.06	2.75	2.06	2.75	2.06	4.50	0.58
C1	3.00	2.65	4.29	2.56	4.29	1.80	4.29	1.89
C2	1.86	2.27	1.71	1.89	3.86	1.95	4.57	1.72

*Resistance*

A1	1.00	0	1.00	0	1.08	0.29	1.83	1.64
A2	1.00	0	1.00	0	1.08	0.29	3.23	1.65
B1	1.30	0.95	1.00	0	1.20	0.42	1.60	1.08
B2	1.00	0	1.00	0	1.36	0.67	1.64	0.92
B3	1.00	0	1.00	0	1.60	1.36	1.53	1.01
B4	1.00	0	1.00	0	2.25	1.89	2.38	2.43
C1	2.14	2.27	1.64	1.70	4.43	2.58	4.86	1.46
C2	1.43	0.79	1.14	0.38	2.29	1.89	3.29	2.29

*Avoidance*

A1	5.79	0.89	5.92	1.38
A2	4.10	1.45	4.70	1.69
B1	3.70	1.25	3.40	1.35
B2	3.55	1.86	1.82	1.25
B3	1.56	1.14	1.28	0.81
B4	1.00	0	2.25	1.50
C1	2.29	1.89	3.57	2.30
C2	1.86	1.57	2.29	1.60

## **Disorganization Rating Scale**

*Main and Solomon, 1990*

### **1. No signs of disorganization/disorientation.**

Any behaviors that initially seemed to be indices of disorganization or disorientation have been explained in other terms.

### **3. Slight signs of disorganization/disorientation.**

There are some indices of disorganization or disorientation, but the worker does not even begin to consider placement in a D category.

### **5. Moderate indices of disorganization/disorientation which are not clearly sufficient for a D category placement.**

No very strong (*italicized*) indicators are present, and the indices that are present are not frequent enough, intense enough, or clearly enough lacking in rationale for the worker to be certain of a D category placement.

*The worker using a 5 will have to "force" a decision regarding whether the infant should be assigned to a D category. (Note: ratings below a 5 (e.g., 4.5) mean the infant is not to be assigned to the D category, and ratings above a 5, for example, 5.5, indicate assignment to the D category.)*

### **7. Definite qualification for D attachment status, but D behavior is not extreme.**

There is one very strong indicator of disorganization/disorientation, or there are several lesser indicators. There is no question that the infant should be assigned to D status, even though exhibition of D behavior is not strong, frequent, or extreme.

### **9. Definite qualification for D attachment status:**

The indices of disorganization and disorientation are strong, frequent, or extreme. Either several very strong indicators are present, or one very strong indicator and several intense exhibitions of one or several other

Appendix G

Atypical Maternal Behavior Instrument for Assessment and Classification  
(AMBIANCE)

Manual for Coding Disrupted Affective Communication

Version 2.0, January 2009

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This instrument includes the items from Main & Hesse's (1992) coding instrument entitled "Frightening, Frightened, Dissociated or Disorganized Behavior on the Part of the Parent: A Coding System for Parent-infant Interactions" as well as items from other available coding instruments assessing atypical caregiving behaviors.

Several items from this manual were adapted from the coding which was developed as part of a dissertation by Dr. Elizabeth Parsons, under the direction of the third author, entitled Maternal Behavior and Disorganized Attachment: Relational Sequelae of Traumatic Experience, 1991.

Version 1.0 (1992) of this manual was developed as part of a dissertation by Dr. Elisa Bronfman, under the direction of the third author, entitled The Relation Between Maternal Behavior Ratings and Disorganized Attachment Status in Eighteen-Month-Old At-Risk Infants, 1993.

Version 1.0 (2004) of the rating scales were developed as part of a Master's thesis by Dr. Sheri Madigan, in collaboration with members from the Child Development lab at the University of Western Ontario, under the direction of Dr. David Pederson and Dr. Greg Moran.

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AMBIANCE TALLY SHEET FOR CODING

Family Identification Number:

Coder(s):

Type of Interaction:

Date:

TOTALS:

RATING:

1- Affective communication errors:

1A\_\_\_\_\_ 1B\_\_\_\_\_ 1C\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2- Role/ boundary confusion:

2A\_\_\_\_\_ 2B\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3- Fearful/Disoriented:

3A\_\_\_\_\_ 3B\_\_\_\_\_ 3C\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4- Intrusive/Negativity:

4A\_\_\_\_\_ 4B\_\_\_\_\_ 4C\_\_\_\_\_ 4D\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5- Withdrawal:

5A\_\_\_\_\_ 5B\_\_\_\_\_ 5C\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Number of italicized behaviors: \_\_\_\_\_

Level of Disrupted Communication: \_\_\_\_\_ Subtype: \_\_\_\_\_

Parental Classification: Disrupted or Not Disrupted: \_\_\_\_\_

Comments:

## INSTRUCTIONS FOR CODING ATYPICAL MATERNAL BEHAVIOR USING THE AMBIANCE

### Strategy for completing observation:

1. Watch the whole tape of parent-infant interaction without writing anything down.
2. Watch the tape again pausing and rewinding when necessary to see and hear each interaction fully. Write a detailed narrative while pausing and rewinding the tape.
3. Use the narrative and, if necessary, view portions of the tape again to complete the Itemized Behavior Codes on each dimension of atypical caregiver behavior.
4. Calculate the frequency of each subdimension (e.g., 1a, 1b, 1c) and dimension (e.g., Dim 1).
5. Calculate the total frequency of behaviors observed.
6. Count all of the italicized behaviors which were scored across all of the dimensions and mark the total on the tally sheet. If there are 2 or more italicized behaviors, this should be noted, since these italicized behaviors occurred more often in parents of infants with disorganized attachment.
7. Rate each of the dimensions using the rating scales of Atypical Maternal Behavior (p.21)
8. Assign the Level of Disrupted Communication Scale score (p.33). Utilize the Addendum to rate the Level of Disrupted Communication Scale if deciding between two levels is difficult.
9. Assign a parental classification based on the level of disrupted communication observed. A level of disrupted communication between 1-4 is considered "not-disrupted" and a level between 5-7 is considered 'disrupted.'
10. Include comments on the tally sheet about how the ratings may differ from or agree with your classification and how confident you are in the classification.
11. Add any noteworthy comments regarding the dyad being coded.
12. Place together all the information that you have compiled for the parent-infant dyad. For each tape coded, this would include the narrative and on top, the tally sheet summarizing all of the data observed on the dyad.

**PART I:**  
**Conceptual Foundations and Itemized Codes for the Five**  
**Dimensions of the AMBIANCE Coding System**

In the conception underlying the AMBIANCE coding system, disorganized infant attachment results when the caregiver consistently fails as a source of protection against overwhelming arousal. In this view, without reasonably effective caregiver modulation of arousal, the infant is unable to organize a consistent strategy for using the parent as a source of comfort when under stress. In particular, the disruption of communication between parent and infant in attachment-eliciting contexts should be fear-arousing in itself because the infant will have little sense of influence over the caregiver at times of heightened fear or stress (Lyons-Ruth, Bronfman, & Parsons, 1999). Repeated failures to alter caregiving behavior toward the infant in the face of clear infant cues can be fear provoking and disruptive to the infant and has the potential to lead to a disorganized attachment relationship.

The caregiver's inability to consistently modulate infant arousal can present in a variety of ways. In this conception, failure to modulate arousal may result not only from caregiver behavior that is directly frightened or frightening, but also from failure to adequately modulate infant fearful arousal provoked from sources other than the parent's own behavior. Such failure of modulation may occur due to caregiver frightening behavior, but also may occur due to withdrawing or role-confused behavior which is not directly frightening but which fails to provide the infant with a sense of communicative influence over the caregiver's responsiveness at times of need (Lyons-Ruth et al., 1999 a,b; Madigan, Moran, & Pederson, 2006). This manual operationalizes a coding system for capturing the variety of ways in which such serious disruptions in communication between parent and infant may be patterned.

**Overall Coding Considerations:**

1. Weighting the Behavioral Codes: We include the detailed behavioral codes to sensitize the coder to the variations in ways that disruptions in communication may occur in disturbed infant-parent relationships. However, the intent of including detailed behavioral observation is not to code every minor instance of missed communication but to form a judgment about the overall degree of disruption occurring in the interaction as a whole.
2. Considering Ameliorating Behavior: Disrupted behavior is always considered in relation to the quality of ameliorating behavior in the interaction. Qualities to consider in looking for ameliorating behavior:
  - i. Parent appears to take genuine pleasure in interacting with child
  - ii. Physical contact is tender and comfortable
  - iii. Parent responds to most of baby's cues promptly and appropriately
  - iv. Maintains relatedness to infant with 'protoconversation' throughout (commenting on narrating)—no silent lapses of relatedness
  - v. Parent monitors infant's focus of attention visually
  - vi. Parent follows and supports child's play initiatives or focus of attention
  - vii. Parent actively takes initiative when parental lead needed (infant is distressed);



parent is leaving or arriving; child is wandering and unengaged).

## **DIMENSION 1: AFFECTIVE COMMUNICATION ERRORS**

### ***Dimension 1: CONCEPTUAL FOUNDATION***

The affective communication error scale examines the quality of the communications between the infant and caregiver. The signals that occur are assumed to go both from the infant to the caregiver and from the caregiver to the infant. These communications are understood as more encompassing than verbal communications alone and may include: tone of voice, facial expression, touch, physical gestures, and presentation of mood. In the creation of the written narrative, while reviewing the interactive communication patterns between the infant and caregiver, the observer notes affective communication successes as well as failures, such as times when the caregiver and infant appear to respond to each other's expressions and signals appropriately, especially in situations deemed stressful to the infant. It is considered more significant in this scale if signals are not attended to around infant distress and/ or if unusual signals by the caregiver are presented in moments of infant distress. When observing parental behavior in the Strange Situation, affective communications are also considered to be more significant if they occur at reunions.

The affective communication error scale rates the severity of three types of affective communication errors. The first type of error occurs when the caregiver simultaneously presents two messages that are in contradiction to one another, such as signalling anger to the infant with a smile or sweet voice.

The second type of affective communication error consists of absent responses to clear infant signals.

The third type of affective communication error consists of markedly inappropriate responses to clear infant signals or needs. Such errors provide one indicator that the disrupted communication between caregiver and infant is not simply a function of difficult-to-read infant signals since the caregiver's actions, or notable failures to act, are incongruous with signals from the infant that can be easily understood by an outside observer. In some cases there is little observed communication between the caregiver and infant in extended interaction. While this may suggest a vacancy in the relationship, it will most likely be reflected in the withdrawal scale.

The dimension scale score for affective communication errors will reflect the degree to which serious communication errors characterize the parent-infant interaction.

**Note:** Behaviors in italics were displayed 3 times more often among mothers of disorganized infants

### ***Dimension 1: ITEMIZED BEHAVIOR CODES***

**1A- Contradictory Signaling to Infant (consider double codes for 1A; e.g., if there's hostile component to the behavior, consider a code on dimension 4; if there's withdrawal, consider a code on Dimension 5)**

**Voice tone incongruent with message:**

Stern voice, but permissive message

Sweet voice with derogatory, demanding, or impatient message

**Verbal content or voice tone incongruent with physical response:**

*Invites approach verbally then distances*

*Uses friendly tone while maintaining threatening posture*

Says something positive about infant while simultaneously indicating aversion

**Verbal content or voice tone incongruent with facial expression:**

Smiles while using stern voice

Exhibits angry facial expression but speaks pleasantly

**Incongruent physical behaviors:**

*Directs infant to do something then not to do it*

Offers then withdraws toy

Holds affectionately, while simultaneously withdrawing or threatening infant

**1B- Failure to Initiate Responsive Behavior to Infant Cue (these are seen as withdrawing and affective communication errors)**

*Does not attempt to soothe infant when distressed*

*Does not offer comfort when infant falls*

*Fails to set appropriate limits around safety*

Ignores cues for pick up

Does not intervene when infant engages in dangerous behavior

Does not respond to clear infant vocalization that is specifically directed at the caregiver

Does not respond to clear infant cue (i.e., infant looks at mom and vocalizes, but mom fails to respond; infant shows mom a toy and mom does not respond)

**1C- Inappropriate responding to infant signals or needs (not coded above):**

*Laughs while infant crying or distressed*

*Directs inauthentic affect towards infant (fake over bright affect)*

Ignores infant's cue for distance

Ignores infant's "no"

Mother smiles when infant is angry, upset, afraid, or sad

Attempts to minimize or discount infant's display of distress or asking for help (e.g., "what's the matter" or "oh, you're okay")

Other observed contradictory cues or absent/inappropriate responses to infant cue not listed above:

**DIMENSION 2: ROLE/BOUNDARY CONFUSION**

***Dimension 2: CONCEPTUAL FOUNDATION***

The Role/Boundary Confusion scale is intended to capture the degree to which the caregiver displays indications of role confusion during interaction with the infant. Role/boundary confusion can be defined as the extent to which the caregiver solicits inappropriate attention, affection, intimacy, or

support from the infant, rather than maintaining her attention on following the infant's activities, cues, and directions. Role confusion can be expressed in non-distress interactions, such as directing the infant to self (e.g., "come to mommy"), seeking attention from the infant when he/she is engrossed in a toy or activity, engaging in childlike behavior or speaking in baby talk. It can also be expressed directly when the infant is distressed, such as asking the infant for affection, permission, or direction.

It is expected that caregivers maintain a clear adult role, a role that includes attending to the infant's feelings and directions in order to scaffold for the infant how to cope with a difficult situation. When a caregiver prioritizes her own needs over her infant's needs and/or engages in sexualized behavior, she communicates to her infant that her needs should be attended to above the needs of her infant and that there may be no support or help in time of need. This abdication of a parental role has been associated with the development of a disorganized attachment relationship (Lyons-Ruth, Bronfman, & Parson, 1999; Madigan et al. 2006). Those familiar with the attachment literature will note that milder forms of role confusion may be related to being in an organized ambivalent relation to the infant. However, the literature also indicates that ambivalent relationships are particularly likely to co-occur with disorganized behavior on the part of the infant. The coder will need to judge whether the severity of the role confusion, in addition to other indicators of disrupted communication, are pervasive and serious enough to leave the infant without ways to involve the caregiver in regulating his/her own states.

One profile of interaction that is suggestive of role confusion (Dimension 2A) typically includes behaviors which demonstrate a clear need on the part of the caregiver to have the infant's attention focused on herself. Rather than allow the infant to set the content and pace of the interaction, a role confused caregiver attempts to have the infant fulfil the caregiver's agenda. Thus, there is a sense that the caregiver is prioritizing her own needs over that of her infant's. It often appears as though the role confused caregiver is unaware of the needs and/or cues of the infant.

It is important to note, that many normative parents ask for hugs and kisses during interaction with the infant. This is not considered role confusion per se. Asking for hugs and kisses is considered role confusion when the persistence and intensity of the behavior becomes demanding. That is, it becomes clear that the parental need for affection is over and above that of the child's need. For example, a more persistent and intense demand of affection may be "can I have kiss, please, a kiss, no? Oh, come and give mommy a hug or a kiss".

A second profile of the Role Confused parent is the parent who sees the infant as being more powerful than herself. She may place herself in the role of "needy infant", seeking the infant's permission to do something, or requiring the infant to provide support around separation.

A third profile of interaction that is suggestive of treating the infant as a sexual or spousal partner (Dimension 2B) is also included in this dimension. Treating the infant as a sexual or spousal partner reflects the caregiver's tendency to act in an inappropriately sexualized or romantic manner toward the infant. Sexualized behavior can be expressed physically, such as touching the infant inappropriately or engaging in slowed and intimate kisses with the infant. It can also be expressed

verbally, for example, moaning when kissing the infant, or saying phrase that are more appropriate for a partner, such as “who is mommy’s lover?”.

Role/boundary confusion is considered more significant if it occurs at moments of heightened infant distress (e.g. demanding show of affection when the infant is upset; asking the infant to “come to mommy” when upset, rather than approach the infant themselves). When observing parental behavior in the Strange Situation, role confusion behaviors are also considered to be more significant if they occur at separations and reunions. For example, some mothers with a role reversing profile will significantly elevate the infant’s distress upon separation (e.g., “I’m leaving now, mommy’s leaving, okay? Mommy’s leaving but she’ll be right back. Okay? Hello, I’m leaving, bye-bye, bye-bye now. Mommy’s leaving).

**Note:** Behaviors in italics were displayed 3 times more often among mothers of disorganized infants

## ***Dimension 2: ITEMIZED BEHAVIOR CODES***

### **2A- Role Confusion:**

(Difficulty in clearly prioritizing infant's needs over own needs and maintaining a parental stance)

- Elicits reassurance from infant
- Defers to infant
- Asks infant's permission to do something
- Demands show of affection from infant
- Seeks physical attention from infant while infant is engaged in activity
- Prioritizes own needs over infant's needs
- Repeats self references
- Behaves as a child rather than a parent
- Speaks in baby talk (not in response to infant)
- Uses "we" to describe self or infant
- Encourages infant to engage in negative behaviors
- Fake cries in response to the infant- fake sadness
- Directs infant to self
- Pleads with infant for attention
- Asks infant for reassurance around separation
- Threatens to cry
- Speaks for infant in baby voice
- Escalates infant's distress

### **2B- Treats infant as sexual/spousal partner:**

- Speaks in hushed intimate tones to infant*
- Touches inappropriate body parts of infant

Behaves or speaks in a manner more appropriate for a spouse than an infant  
Kisses infant in a sexualized manner  
Strokes in a sexualized manner  
Cups infant's face in hands with extended eye gaze  
Other instances of role/boundary confusion not listed above:

### **DIMENSION 3: FEARFUL/DISORIENTED BEHAVIORS**

#### ***Dimension 3: CONCEPTUAL FOUNDATION***

The conceptual underpinnings for viewing fearful or disoriented caregiver behavior as potentially disruptive to the infant's seeking of comfort and security have been developed in detail in Main and Hesse's (1990) theoretical paper on frightened or frightening parental behavior. Main and Hesse (1990) proposed that frightened parental behavior occurs spontaneously and is triggered internally, stemming from the parent's thoughts or from events or objects in the environment associated with their own traumatic and/or frightening experiences. According to Main and Hesse (1990) and Hesse and Main (2006), the apparent inexplicability of such frightened parental behavior will inevitably be alarming to an infant. Hesse and Main (1999; Main & Hesse, 1995) describe frightened parental behaviors as including entrance into dissociative or trancelike states (e.g., freezing of all movement with a "dead" stare, unblinking); seeking safety and comfort from the infant (e.g. showing deferential behavior); and viewing the infant as the source of alarm (e.g., backing away while stammering in an unusual and frightened voice, "D-don't follow me, d-don't"). Many of the items on this dimension were included from the Main and Hesse (1992) version of the coding scales for frightened or frightening behavior, which were generously shared with the authors of this manual.

In addition, parental behavior that resembles disorganized behavior seen in infancy, such as disoriented wandering in the presence of the infant, vigilant posture, stop-start movements, are also included here as presumptive evidence of a dissociative lack of full orientation to the environment. Such odd affect states are understood as not only potentially frightening to the infant directly, but also as removing the parent emotionally from a position of effectively monitoring and responding to the infant's affective states.

Several profiles of parental behavior may be captured under this coding dimension. Fearful profiles of interaction may be the most subtle, in that there is little overt hostile or intrusive behavior. Instead, the parent is often quite gentle and attempts to respond to the infant. However, often it can be observed that the infant is doing much of the work of engaging the parent, and obtaining comfort if needed, while the parent is more passive, hesitant, and holding back, waiting for the initiative or insistence of the infant. Particularly telling are any moments of hesitation or pulling back at the moment when the infant is actively approaching or asking for comfort or contact. This can occur as hesitating in mid air in reaching for the infant, or seeming uncertain or apprehensive in how to interpret the infant's bid for contact. It is important to note that if withdrawal from contact is a feature of the parent's behavior but there is no element of apprehension, hesitancy, uncertainty, or subtle deferential behavior toward the infant, the behavior should be coded on the withdrawal dimension. Odd voices in this profile will more

often consist of high, frightened, squeaky voices at heightened moments such as entering the room and greeting the infant.

A disoriented profile has quite a different feel. In this profile the parent appears to be quite distanced from her own authentic affective experience and instead displays disoriented affect, body postures, behaviors and/or voices. Some parents in this group display very stilted affect that is not just devoid of feeling but quite unusual in quality, as displayed, for example, deadened or 'flattened' affect sing-song voice cadences, false affect, and/or stiff, artificial, or limp body postures. Others exhibit prolonged moments of freezing or stalling in the context of otherwise oriented behavior patterns. Finally, odd voices are coded here, though they can be a part of a variety of presentations that include prominent hostile or role confused elements. Odd voices seen in these presentations often feature a sudden drop in register from female to male range, or from normal voice to animalic or guttural like growls. The impression is that this is the voice of a different person. It is this sense of intrusion of a disavowed or dissociated affect state, often of a more aggressive persona, that warrants a higher rating on the dimension rating scale for fearful/disorientation behavior.

As indicated above, this dimension is conceptually distinct from Withdrawal (Dimension 5) which more often occurs in the context of an apparently well-oriented state of mind. Disorientation is coded when the caregiver appears to be mentally or emotionally disconnected from the social environment, including her infant. Withdrawal, in contrast, is reflected in a variety of withdrawing behaviors in interaction with the infant (including silence, but not disorientation). In both cases, the caregiver may be unresponsive or unavailable to her infant but the reason for her unavailability differs in these two dimensions—in withdrawal, there is typically the sense that the caregiver is conscious of the external environment and actively chooses not to respond.

**Note:** The caregiver's behavior is not codable if he/she indicates an appropriate level of apprehension to a real danger (i.e., electric socket).

**Note:** Behaviors in italics were displayed 3 times more often among mothers of disorganized infants

### **Dimension 3: ITEMIZED BEHAVIOR CODES**

#### **3A - Fearful Behavior: Appears frightened, apprehensive, or deferential in relation to infant**

*Exhibits frightened expression*

Handles infant in a timid or helpless manner

Exhibits smile with fear elements

Exhibits highly vigilant posture in the presence of infant

Raises hand to mouth directly upon reunion with infant

Exhibits irrational fear regarding environment

Startles to infant behavior without clear cause

Treats infant as more powerful than self

Hesitant, apprehensive or stop-start movement in relation to the infant

Unexpected hesitancy/pause at the moment of the infant's bid for closeness/contact

Approaches or moves away from infant in a circuitous manner (note: while this has a withdrawing aspect, we feel this behavior is more representative of fearful behavior and should be coded on this dimension).

Approaches infant then quickly moves away

Raises shoulders when approaching or in contact with infant

Actively recoils from infant

Fearful posture or expression (e.g. raised eyebrow, open mouth)

Other indications of fear in relation to the infant, not list above:

### **3B - Disorientation: Dissociative or Disorganized Behavior**

*Exhibits sudden change in mood unrelated to the environment, including loss of affect*

*Handles infant as though inanimate*

Assumes trance-like posture or expression ("freezing")

Deadened or "flattened" affect, with inexpressive faces, that leaves odd, 'empty' feel to interaction (distinguish from sad or depressed affect)-Recode each episode of strange situation, if this continues unabated

Exhibits sudden loss of affect (i.e. angry to blank expression)

Exhibits rapid shifts in affect unrelated to the environment (laughter then mad face)

Exhibits disoriented or odd facial expression

Sudden movement unrelated to environment (i.e. head jerk)

Wanders aimlessly around room

Responds to inanimate objects as though animate

Shifts rapidly from topic to topic or activity to activity

Fails to finish movements

Persistent odd or stilted posture

Other disoriented behaviors not listed above:

### **3C - Fearful or Disoriented Voices**

Note: When rating fearful and disoriented voices, place a tally mark for each voice on either 3A or 3B, whichever is the better fit.

*Exhibits "haunted" voice (part of a fearful sequence)*

*Exhibits frightened voice (part of a fearful sequence)*

*Exhibits sudden rise in intonation (part of a fearful sequence)*

*Exhibits stammering voice quality ("D-D-Don't") (part of a fearful sequence)*

*Exhibits "Ghost-like" whispering, stilted voice that seems affectively disconnected (part of a fearful sequence)*

*Exhibits tense, high-pitched, "squeaky" voice tone such as at entry to room (part of a fearful sequence)*

*Exhibits sudden drop in pitch (part of a disoriented sequence)*

*Exhibits sudden voice change, almost as if the voice of a different person (part of a fearful sequence)*

Affect or voice tone seems odd and/or unvarying in relation to environment (e.g., sing-song voice throughout interaction. *(part of a fearful sequence)*)

#### **DIMENSION 4: INTRUSIVENESS/NEGATIVITY**

##### ***Dimension 4: CONCEPTUAL FOUNDATION***

Similar to the fearful/disoriented dimension, the conceptual underpinnings for viewing intrusiveness and negativity as potentially disruptive to the infant's seeking of comfort and security have been developed in Main and Hesse's (1990) theoretical paper on frightened and frightening parental behavior. A parent whose behavior is threatening or frightening to the infant is theorized to be alarming to the infant, so that the infant's only source of comfort also becomes a source of fear. Some of the items on this dimension were included from the Main and Hesse (1992) version of the coding scales for frightened and frightening behavior, which were generously shared with the authors of this manual. Those items tend to be the more striking examples of frightening behavior, while here we also include less striking behavior which, when taken as a whole, produce a pervasive sense that the parent is frequently in opposition to the infant's initiatives.

The behaviors observed on the intrusiveness/negativity dimension are rated more highly if they occur at times of heightened infant stress, such as the separations and reunions in the strange situation. Theoretically, the infant's distressed or needy states may generate similar vulnerable affects in the parent. Rather than using such empathy to respond sensitively to the infant, the parent may deal with such affect by the use of aggressive or intrusive responses to shut down the infant's signals, and thereby counter a sense of shared vulnerability.

When interactions with a caregiver have hostile and negative elements, it is believed that the infant cannot rely on the caregiver to help modulate affective states or provide a sense of safety. Compounding this loss of support, the caregiver may also constitute a source of fear for the infant. Caregivers may also feel rejected by and respond negatively and intrusively to avoidance on the part of the infant, leaving the infant no consistent strategy with which to cope with distress and discomfort in the presence of the caregiver.

To guide the coder, we differentiate four modalities through which intrusiveness and negativity can be communicated to the infant, including physical communication (4a), verbal communication (4b), attribution of negativity to the infant (4c), and through the use of objects in the environment (4d). Physical communications (4a) that suggest intrusion/negativity include aggressive contact with the infant's body, gestures that threaten aggression or intrusion, and actions that may seem less threatening but actually involve a disregard for the infant's need for independent space. These physical communications appear to lack perspective taking about how such postures/touches might feel and/or impact the infant.

Intrusiveness/negativity can be communicated verbally as well (4b). Verbal communications that may serve to shut down the infant's signals to the parent include mocking or teasing the infant, using a



loud, sharp, angry, or hostile voice, hushing a crying infant, and making negative comments about the infant.

Intrusiveness/ negativity can also be communicated by comments about the infant that may or may not be directed to the infant. Some of these statements may describe the infant in both a negative and powerful position, such as in the following examples:

Infant bangs with toy hammer, parents comments: "He destroys everything."

Infant reaches away from parent to get a toy, Parent says: "She hates me."

Infant knocks over block tower, parent says, "Sometime he'll blow up the world."

Parents can also communicate intrusion and negativity through the use of objects. In particular, using toys to tease or taking a toy away from an engaged infant, is coded as a negative behavior. Likewise compelling an infant to continue playing in a way that is no longer fun is also considered intrusive.

It is important to note that a directive teaching style is not considered to be a potentially disorganizing aspect of parent-infant interaction, and should not be coded. Such parental behavior as physically guiding the infant's hand, or insisting that the infant stack rings on the spindle in the 'correct' order may be directive enough to be non-optimal and may take the spontaneity out of the infant's play, but, to be coded, such behavior has to override clear infant signals that something else is needed (Dimension 1 Affective Communication Errors) or contain elements of gratuitous hostility, mocking, or negative attributions (Dimension 4 Intrusiveness Negativity).

**Note:** Behaviors in italics were displayed 3 times more often among mothers of disorganized infants

#### **Dimension 4: ITEMIZED BEHAVIOR CODES**

##### **4A - Physical Communications:**

*Pulls infant by the wrist*

Looms

Presses own cheek to infant's cheek forcefully

Wipes infant's nose vigorously

Pushes infant

Attempts to grab infant

Restrains infant

Picks up or continues holding despite resistance of the infant

Pulls infant into standing position

Turns infant's head

Assumes "attack" posture

Behaves aggressively towards infant (i.e., grabs, hits, punches, bites or kicks the infant)

Touches infant in a manner which appears to be affectionate but is irritating to the infant

Engages in rough physical play without infant enjoyment

Tickles infant when infant resists

Tosses toy or other object at infant  
Physically crowds or hovers closely to infant  
Provides physical contact which offers no comfort  
Ignores infant's "no"

**4B- Verbal communications:**

*Mocks/ teases infant* (e.g., "oh poor baby" said with a sarcastic edge)  
*Hushes crying infant* (distinct from comforting sounds)  
*Uses loud, sharp, or angry voice*  
Disapproves, criticizes, or threatens  
Plays frightening games, such as chasing infant: "I'm gonna GET you!"  
Makes negative comment about infant  
Laughs at infant

**4C- Inappropriately attributes negative feelings, motivation to infant:**

Suggests negative motivation to innocuous behaviors  
Indicates that infant's actions could have harmful consequences  
Personalizes infant's behavior as negative  
Ascribes negative feelings to the infant (i.e. "He/she hates me")

**4D- Exerts control using objects:**

*Removes toy from infant despite engagement*  
*Withholds toy from infant*  
Directs infant to new activity while infant is clearly immersed in playing with a toy  
Deals with objects in an angry manner  
Ignores cue that an activity is not liked, has continued too long, or is too difficult for infant  
Other negative or intrusive behaviors not listed above:

**DIMENSION 5: WITHDRAWAL**

***Dimension 5: CONCEPTUAL FOUNDATION***

The withdrawal scale coded on Dimension 5 is meant to capture different phenomena than are seen on the scale for fearful and disoriented behaviors (Dimension 3). Even in the absence of disorganized and dissociative states, caregivers can be absent as a source of support and scaffolding to infant at times of need. Such parents also often leave the infant alone to manage the world in non-distressed situations. On the withdrawal dimension, there are repeated attempts to distance from the infant.

Theoretically, parental withdrawal is thought to interfere with the infant's organization of a consistent attachment strategy because the parent fails either to respond promptly to attachment bids or to communicate directly to the infant that he/she is not available. Instead, the parent maintains a 'shell' of compliance with the infant's demand(s), while simultaneously responding in minimal, delayed, or circuitous ways. Affect is typically matter of fact or flat, with little affective indication of fear or apprehensiveness. Hostile affect is also typically absent. Instead, the parent silently or circuitously

acts in ways that communicate a lack of support for a mutual relationship with the infant in general and for the infant's attachment behavior in particular.

A high score on withdrawal can result from a single striking failure to relate to the infant, as in stepping over a prone infant at reunion and going silently to the chair, or from subtle but repeated ways in which the parent distances from close contact and interaction with the infant across the session, so that it becomes a theme of the interaction. For example, our coders noted for several of these sessions that "There just didn't seem to be enough there for the infant. "

Withdrawal is coded in three different ways on the AMBIANCE. Withdrawal is manifested in physical ways when interactions between parent and infant occur over a distance, when the parent moves away, ends interactions too soon, averts gaze, adopts distancing postures, and holds the infant in an awkward distant manner.

Withdrawal can be demonstrated in the verbal domain in one of two ways. First, words are used to create distance between the parent and infant or dismiss the infant's need for contact (e.g., "you don't need me," "I won't pick you up"). Second, no or minimal words are used to mediate interactions. Long silences can be noted in dyads where this is the predominant dimension. When observing parental behavior in the strange situation, withdrawal may be expressed by failing to greet the infant after a separation, or leaving silently without speaking to the infant (**note**: only code this behavior at the second separation).

Withdrawal can also be manifested through the use of toys. In disrupted dyads, the caregiver may repeatedly use toys as a substitute for comfort from herself. Props may be used to keep a distance from the infant. For example, the parent may offer a crying infant a toy rather than a hug, verbalization, or other personal attempt at comfort.

**Note:** Behaviors in italics were displayed 3 times more often among mothers of disorganized infants

## ***Dimension 5: ITEMIZED BEHAVIOR CODES***

### **5A- Creates physical distance from infant:**

*Holds infant away from body with stiff arms*

Squats behind infant to play

Backs away from infant

Stands and looks down to interact with infant

Turns infant away from body when holding

Stands behind infant to lift

Averts gaze

Adopts a posture designed to keep infant at a distance (e.g., holds magazine between self and infant when infant signals approach)

Maintains interaction at a distance from infant

Indicates that touching the infant was uncomfortable or unpleasant

Leaves area after the infant approaches

Holds infant awkwardly (distinguish from 'inanimate' treatment under disorientation where parent seems unaware of infant)

Directs approaching infant away

Distances when infant approaches

Moves out of interaction to chair when infant clearly wants contact or interaction

Puts infant down too soon before any cue from infant

Abrupt end of interaction

Strokes infant with finger and not palm

### **5B- Use of verbal communication to maintain distance:**

No interaction with infant (Not scored during episodes 1 & 2)

Uses words to create distance (i.e. "I won't pick you up.")

Dismisses infant's need for contact (i.e. "You don't need me ")

Does not greet infant after a separation

Interacts silently with infant

Leaves silently without speaking to infant

### **5C- Directs infant away from self via toys:**

Steers infant towards toys from behind

Redirects infant to toys not self as an apparent substitute for closer contact with

Parent (note: if the parent directs to toys as a means of shared play, do not code this behavior).

Uses prop to keep infant at a distance (e.g., throws ball into far corner to redirect infant)

Offers object to infant over an unusual distance

Parent creates barrier between self and infant by presenting a series of toys without regard for the infant's focus of attention

Other withdrawing or distancing behaviors not listed above:

## **PART II:** **Rating Scale for the Five** **Dimensions of the AMBIANCE Manual**

### **Rating considerations:**

1. Judgement must be used in selecting the aspects of caregiver interaction that fit within the conceptual domain of each rating scale. In addition, individual descriptors for scale values are intended to provide a sense of the characteristics of the typical interactive patterns of caregivers who should be assigned each rating level on each dimension. Note, however, that each caregiver assigned these scores is unlikely to show all these descriptors, i.e. these are not profiles. Thus, a failure to display all descriptors does not necessarily suggest that the caregiver should not be assigned a particular level if his/her general pattern of behavior best fits the overall description of the pervasiveness and/or seriousness of behavior in that domain.
3. The scales are intended to represent conceptually distinct dimensions and coders should make every attempt to represent the contributions of particular itemized behavior codes only on the most relevant scale, i.e. the dimension on which the behavior is located in the manual. Some interactive behaviors may have implications for ratings on more than one scale, however. This is particularly true for some types of affective communication errors and some types of disoriented behaviors. For example, a caregiver's failure to attempt to soothe his/her distressed infant is an affective communication error, but may also have implications for the withdrawal scale. Similarly, some dissociative behaviors, such as handling the infant as though inanimate, may also be negative and intrusive. In these cases, the relevant behaviors should have been double-coded in the frequency counts and thus should also contribute to ratings on all relevant dimensions.
4. You may have a rating higher than one on a dimension, even in the absence of marked itemized behaviours scored on that dimension.

### **Dimension 1: RATING SCALE for AFFECTIVE COMMUNICATION ERRORS**

**Notes:** *A low score on the rating for affective communication errors occurs when the caregiver presents contradictory signals (1A), occasionally misses opportunities to be responsive (1B), or delays a response, or is somewhat inappropriate in his/her response to the infant's cues (1C). Only extreme examples of absent or inappropriate responses to infant cues (e.g., failure to soothe; laughing at the infant's distress) would be given a score greater than 4 for affective communication errors, leading to a consideration of placement into the disrupted category.*

**To those observing caregiver behavior in the Strange Situation:** *Caregivers often demonstrate mild affective communication errors in Episode 2 and 3 (e.g., do not respond to infant vocalizations). In some cases,*

caregivers are following the Strange Situation guidelines (i.e., respond minimally to your infant). Thus, mild insensitive behaviors displayed during Episode 2 and 3 are considered less significant than those occurring in Episodes 5 and 8. Affective communication errors are considered to be especially salient if they occur at the time of reunion or are related to the infant's signals of need for comfort, contact, or distress.

**1. Very minimal evidence of affective communication errors.**

- Rarely misses the infant cues in non-distress interactions.
- Responds to infant signals of distress or proximity seeking behavior.
- Caregiver supports the infant's affective state; i.e., caregiver does not attempt to minimize or discount the infant's affective displays, nor does she block the infant's affect when distressed.
- No contradictory cues or signals present.
- No italicized behaviors are presents.

**2. Mild evidence of affective communication errors.**

- Caregiver *may* miss a few low intensity cues during non-distress interactions (e.g., fails to respond to infant vocalization).
- Responds to infant signals of distress or proximity seeking behavior.
- Caregiver generally supports the infant's affective state; i.e., caregiver does not attempt to minimize or discount the infant's affective displays, nor does she block the infant's affect when distressed.
- No contradictory cues or signals present.
- No italicized behaviors are presents.

**3. Some evidence of affective communication errors.**

- *May* miss or respond inappropriately to infant cues during non-distress interactions (e.g., fails to respond to infant's vocalizations; fails to respond to infant cue).
- *May* infrequently miss low intensity distress signals such as a whine or whimper (outside the context of reunion).
- Generally able to support the infant's affective state; but *may* demonstrate isolated instances of incongruent affect (e.g., minimizing distress by saying "oh, you're okay").
- *May* display mild or ambiguous contradictory affective cue or signal.
- No italicized behaviors are presents.

**4. Nonoptimal affective communication errors.**

- *May* miss or respond inappropriately to the infant's cues in non-distress situations (e.g., fails to respond to infant's vocalizations; ignores infant's cue for distance).
- *May* infrequently miss low intensity distress signals (e.g., whine, whimper, missed cue for pick up), but generally responds.
- *May* demonstrate some difficulty supporting the infant's affective state (e.g., mild block of infant affect).
- *May* display a clear contradictory cue or signal.

**5. Clear evidence of affective communication errors.**

- Caregiver appears to have difficulty shifting his/her method of responding to the infant's signals or needs.
- *May* frequently miss or respond inappropriately to the infant's non-distress signals.
- Response to the infant's distress or proximity seeking *may* include a clear laugh or a failure to soothe; however, there are still some attempts to respond to the infant.
- *May* demonstrate some difficulty supporting the infant's affective state (e.g., blocks infant's affect; minimizing distress at reunion).
- *May* display a clear contradictory affective cue or signal or more frequent ambiguous contradictory cues or signals.

**6. Affective communication errors predominates the interaction.**

- Caregiver seems unable to shift his/her method of responding to the infant's signals or needs.
- *May* respond inappropriately to the infant's non-distress signals.
- Response to the infant's distress or proximity seeking is persistently inappropriate, and includes laughing, directing inauthentic affect, or failing to soothe the infant when distressed.
- *May* demonstrate significant difficulty supporting the infant's affective state.
- *May* display clear contradictory cues or signals
- *May* display one or more italicized behaviors.

**7. Persistent affective communication errors, with little or no appropriate responses to the infant's cues and signals.**

- Caregiver appears "stuck" in his/her inappropriate style of responding to the infant; s/he is unable to shift his/her ineffective method of responding to the infant's signals or needs.
- *May* provide little assistance to the infant in coping with a difficult situation.
- Rarely responds appropriately to infant's distress and non-distress signals.
- Extreme difficulty supporting the infant's affective state.
- *May* display clear contradictory cues or signals
- Several italicized behaviors *may* be displayed.

**Dimension 2: RATING SCALE for ROLE/BOUNDARY CONFUSION**

**Notes:** Caregivers receiving ratings greater than 1 on the scale show some degree of assigning priority to their own needs, rather than to those of the infant.

*\*If the interaction is clearly sexualized, the caregiver will qualify for a minimal score of 6.*

**1. No evidence of role/boundary confusion.**

- Consistently maintains a clear adult role with infant during distress and non-distress interactions.
- Rarely directs infant to self and does not ask infant's permission to accomplish a task.
- There are no anomalous attention seeking behaviors (e.g., fake crying, threatening to cry).
- No evidence of sexualized behavior.

**2. Mild evidence of role/boundary confusion.**

- Maintains a clear adult role with infant during distress and non-distress interactions.
- *May* be minor instance of directing infant's attention to self (e.g., "come to mommy") or asking the infant's permission to do something.
- *May* have an isolated or ambiguous incident of seeking affection from the infant (e.g., "hug?").
- There are no anomalous attention seeking behaviors (e.g., fake crying, threatening to cry).
- No evidence of sexualized behavior.

**3. Some evidence of role/boundary confusion.**

- During non-distress interactions, caregiver gives brief indication of needing the infant to focus on him/herself, although not during reunion (e.g., directing infant's attention to self; asking for affection during non-distress interactions).
- *May* have a mild incident of seeking affection from the infant (e.g., saying "Give a kiss?").
- Caregiver maintains an adult role with infant during distressing interactions.
- Isolated instance of child-like behavior *may* be present (i.e., baby-talk).
- There are no anomalous attention seeking behaviors (e.g., fake crying, threatening to cry).
- No evidence of sexualized behavior.

**4. Non-optimal style: evidence of role/boundary confusion.**

- Caregiver *may* indicate need for the infant to focus on her by directing infant's attention towards him/herself (e.g., directs to self, asks for affection during non-distress interactions).
- *May* have more than one mild incident of seeking affection from the infant (e.g., "come and give mommy a hug," or "give mommy a kiss").
- There *may* be mild evidence of child-like behaviors (e.g., baby-talk).
- *May* demonstrate brief need for the infant to miss him/her in more than a casual manner (e.g., increasing the infant's distress around separation).
- *May* be a brief instance of overly intimate behavior to one interaction (e.g., a non-sexualized kiss that *may* appear somewhat prolonged or for which the purpose is for caregiver's comfort rather than the infant's need).

**5. Clear and more persistent evidence of role/boundary confusion.**

- Caregiver *may* demonstrate increasing need for the infant to focus on her by directing infant's attention towards him/herself (e.g., directs to self, repeats self-reference, asks for affection).
- *May* seek attention from the infant when infant is distressed (e.g., "come and give mommy a hug," "give mommy a kiss").
- *May* demonstrate increasing evidence of childlike behaviors (e.g., baby talk).
- *May* demonstrate attention-seeking behaviors such as fake crying or threatening to cry.



- There *may* be intimate whispers.
  - *May* demonstrate an ambiguous sexualized behaviors (i.e., speaking in a sexual tone, nuzzles the infant inappropriately).
- 6. Role/boundary confusion predominates the interaction.**
- Clear evidence of needing the infant to focus on caregiver during non-distress and/or distress interactions.
  - *May* persistently seek comfort from the infant (e.g., “come and give mommy a hug,” “give mommy a kiss”).
  - *May* demonstrate persistent evidence of childlike behaviors (e.g., baby talk).
  - *May* demonstrate persistent need for the infant to miss the caregiver in more than a casual manner (e.g., increasing the infant’s distress around separation).
  - Whispers *may* be of a sexualized or overly intimate quality.
  - *May* display other sexualized behavior.
- 7. Persistent role/boundary confusion with little or no evidence of appropriate parental focus on the infant.**
- *May* demonstrate persistent need for the infant to focus on the caregiver.
  - *May* seek comfort from the infant (e.g., “come and give mommy a hug,” “give mommy a kiss”).
  - *May* demonstrate persistent evidence of childlike behaviors (e.g., baby talk).
  - *May* demonstrate significant need for the infant to miss the caregiver in more than a casual manner (e.g., increasing the infant’s distress around separation).
  - Whispers *may* be of a sexualized or overly intimate quality.
  - *May* treat infant in a sexual, romantic, or spousal manner.

### **Dimension 3: RATING SCALE for FEARFUL/DISORIENTED BEHAVIORS**

*Notes: This dimension is conceptually distinct from Withdrawal (Dimension 5) which more often occurs in the context of an apparently well-oriented state of mind. Disorientation is coded when the caregiver appears to be mentally or emotionally disconnected from the social environment, including her infant. Withdrawal, in contrast, is reflected in a variety of withdrawing behaviors in interaction with the infant (including silence, but not disorientation). In both cases, the caregiver may be unresponsive or unavailable to her infant but the reason for her unavailability differs in these two dimensions—in withdrawal, there is typically the sense that the caregiver is conscious of the external environment and actively chooses not to respond.*

*3a. Caregivers assigned scores at the lower end of this scale behave or speak in a manner that conveys some uncertainty concerning their actions. Caregivers assigned scores in the higher end of the range show more explicit evidence of fear, tension, or apprehension. The more obvious and unambiguous the signals of fright or apprehension, the higher the score.*

*3b. At lower levels, although a caregiver may seem to be daydreaming, she has the potential to respond to her infant. At higher levels the caregiver seems to be in an unusual mental or emotional state where she is either mentally unavailable to the infant or emotionally blunted, with odd, flattened affect.*

3c. Caregivers assigned scores at the lower end of this scale may display infrequent and/or ambiguous voice quality. At higher levels, caregivers may show a range of anomalous voices, and/or more persistent displays of anomalous voices. Thus, the more anomalous and frequent voices become, the higher the score.

This dimension rates the extent of fearful/disoriented elements in the parent infant interaction. The extent to which these behaviors are also negative/intrusive, role confused, or withdrawing should be rated on the relevant scales.

The caregiver's behavior is not codable if he/she indicates an appropriate level of apprehension to a real danger (i.e., electric socket).

**1. No evidence of fearful or disoriented behavior.**

- Shows no signs of fear, tension, or apprehension in interactions.
- No pattern of disorientation has been established; mother is psychologically present during the entire interaction.

**2. Very mild evidence of fearful or disoriented behavior.**

- No pattern of fearful or disoriented behaviors has been established.
- Isolated ambiguous frightened or disoriented behavior *may* be displayed (e.g., odd or squeaky voice that is not intentional or imitative).
- No stilling or freezing behavior occurs.
- No italicized behaviors are present.

**3. Mild and infrequent evidence of frightened or disoriented behavior.**

- No pattern of frightened behavior or disorientation has been established; mother is generally psychologically present during the interaction.
- *May* demonstrate a mild behavior that is suggestive, but not clearly demonstrative of parental frightened or disoriented behavior (e.g., one unusually tense voice, approaches chair in a circuitous manner).
- *May* demonstrate some apprehension in interaction with infant (e.g., walking around the infant circuitously on one reunion).
- No stilling or freezing behavior occurs.
- No italicized behaviors are displayed.

**4. Nonoptimal frightened or disoriented behavior.**

- No clear pattern of frightened, fearful, or apprehensive behavior has been established.
- No clear pattern of disorientation has been established.
- *May* demonstrate several ambiguous behaviors that suggest parental frightened behavior or one clear display of frightened behavior (e.g., an anomalous voice, fear face).
- Caregiver *may* display several ambiguously disoriented behaviors or one clear display of disoriented behavior.
- Caregiver *may* momentarily appear to be unavailable to the infant or s/he *may* briefly appear unconnected to his/her environmental surroundings.

- No two behaviors occur simultaneously or in close temporal proximity to each other.
- 5. Clear and more frequent evidence of fearful or disoriented behavior in response to contact-seeking behavior of the infant.**
- A pattern of frightened, fearful, or hesitant behavior is becoming more pronounced and/or disorientation to the environment is becoming more frequent.
  - Frightened voices, expressions and actions are displayed.
  - There *may* be hesitation or tension at heightened attachment moments, such as greeting the infant or contact-seeking by the infant.
  - The caregiver *may* appear hesitant or held back from fuller responsiveness (e.g., clearly stepping back or away from the infant in a frightened manner).
  - Caregiver *may* briefly appear to be unconnected to his/her environmental surroundings (e.g., isolated instance of wandering aimlessly around room, treats infant as though inanimate).
  - *May* briefly appear to be in an altered state (i.e., > than 10 seconds).
  - Shifts in interactions *may* seem more frenetic (repeatedly engages infant in rapid frenetic shifts from toy to toy).
- 6. Frightened or disoriented behaviors predominates the interaction.**
- There is a clear pattern of frightened or disoriented behavior in relation to the infant.
  - Frightened behaviors are more frequent and intense (e.g., persistent high pitched 'squeaky' voices).
  - There *may* be hesitation or tension at moments of heightened attachment, such as greetings or contact-seeking by infant, including voice cracking, or stuttering.
  - *May* demonstrate persistent hesitancy suggesting apprehension in interaction with the infant (e.g., backing up or appearing frightened by excited or exuberant play on the part of the infant).
  - Caregiver *may* appear to be unavailable to the infant or in an altered state.
  - Caregivers actions *may* appear disparate from his/her environment, as well as his/her infant's state, emotions, or behaviors.
  - *May* demonstrate significant freezing or stilling behavior (i.e., between 10 and 20 seconds).
  - Shifts in interactions *may* be frenetic and there is little effort to mark transitions.
  - More than one italicized behavior *may* be present.
- 7. Persistent fearful or disoriented behaviors, with little or no ameliorating behaviors.**
- There is a clear and pervasive pattern of frightened, fearful, hesitant behavior and/or disoriented behavior.
  - Fearfulness *may* be demonstrated in multiple ways, such as in voice quality, facial expression, posture, movement patterns.
  - There *may* be significant hesitation or tension at moments of heightened attachment, such as greetings or contact-seeking by infant, including frightened voice and expressions.
  - Caregiver's consciousness of the environment *may* be reduced and s/he appears to be directed by thoughts, events or images within his/her own mind.
  - Caregiver's actions *may* be distinctly disparate from his/her environment, as well as his/her infant's state, emotions, or behaviors.
  - *May* demonstrate significant freezing or stilling behavior (i.e., > than 20 seconds).
  - Shifts in interactions *may* be persistently frenetic and there is no effort to mark transitions.
  - More than one italicized behavior *may* be present.

#### **Dimension 4: RATING SCALE for INTRUSIVENESS/NEGATIVITY**

**Notes:** At low levels, caregiver's behavior may be arousing and moderately frightening but caregivers are responsive to infant feedback cues. At mid levels, there may be less collaboration around infant's initiatives. At higher levels, the caregiver's behavior is not moderated by the infant's feedback cues. There is a sense of underlying negative affect and on the part of the caregiver.

Only actions that are, in their own right, intrusive, frightening, or negative are coded in this dimension. Be especially careful of coding potentially frightening games that are well-marked for the infant (e.g., well executed "I'm gonna get you" games). In some instances actions suggesting the caregiver's disconnectedness may indeed be directly intrusive, frightening and negative to the infant in their own right.

Note that very directive, controlling teaching behavior should not lead to high scores on this scale.

**1. Very minimal or no evidence of frightening, intrusive and/or negative behavior.**

- Does not display physically or verbally intrusive behaviors.
- Does not direct actions that might be frightening or appear negative towards the infant.
- Caregiver allows infant to initiate and set the pace of the interaction.
- No italicized behaviors are displayed.

**2. Mild evidence of intrusive and/or negative behavior.**

- *May* demonstrate a mild and isolated instance of verbal or physical negative behavior.
- *May* occasionally direct actions that might be intrusive (e.g., *may* direct infant to new activities while infant was clearly engaged in another).
- Caregiver allows infant to initiate and set the pace of the interaction.
- No evidence of verbal or physical aggression or hostility (e.g., mocking, teasing, sharp or angry voice).
- No italicized behaviors are displayed.

**3. Some evidence of intrusive and/or negative behaviors.**

- *May* demonstrate mild physical or verbal intrusive or negative behaviors (e.g. brief loom over infant, etc.).
- *May* exert mild control over the content of the interaction (e.g. teaching style involving verbal or physical directives, directing to a new toy while clearly engaged), but primarily allows the infant to set the pace of the interaction.
- *May* be evidence of frightening-type games that are clearly marked as a game (e.g., "I'm gonna get you").
  - No evidence of verbal or physical aggression or hostility (e.g., mocking, teasing, sharp or angry voice).
- No italicized behaviors are displayed.

**4. Nonoptimal, intrusive, frightening, and/or negative behaviors.**

- There *may* be more frequent displays of physical and verbal control over the interaction, but the caregiver does allow the infant to disengage.

- *May* demonstrate difficulty in allowing the infant to set the agenda.
  - Frightening-type games *may* be more frequent and unmarked.
  - There *may* be an mild or isolated instance of verbal or physical aggression/hostility (e.g., "you're silly").
- 5. Clear evidence of intrusive, frightening and/or negative behaviors.**
- Intrusive and negative behaviors *may* be a theme of the interaction (e.g., behaving aggressively, looming, crowding, engaging in rough physical play, etc.).
  - Caregiver *may* be controlling in physical or verbal interaction (i.e., no longer a teaching strategy) in non-distress or distress interactions.
  - *May* demonstrate an increasing need to set the content and pace of the interaction.
  - *May* play frightening-type games in spite of infant cues that activity is unwelcome.
  - There *may* be a clear instance of verbal or physical aggression/hostility (e.g., aggressively pulling infant by the wrist, mock/tease).
- 6. Intrusive, frightening and/or negative behaviors predominates the interaction.**
- Intrusive, negative, and hostile behaviors *may* be a persistent theme of the interaction.
  - Caregiver *may* display physically and verbally intrusive, and/or negative behaviors (e.g. using direct physical force, making negative comments about infant) during distress or non-distress interactions.
  - *May* demonstrate a persistent need to set the content and pace of the interaction (e.g., *may* use physical force to direct the infant's behavior/attention).
  - There *may* be instances of verbal or physical aggression/hostility.
  - *May* mock or tease infant when infant is distressed.
  - *May* play frightening-type games in spite of infant cues that activity is unwelcome.
  - More than one italicized behavior *may* be displayed (e.g. pulling infant by wrist, mocking, teasing).
- 7. Persistent intrusive, frightening and/or negative behaviors, with little to no ameliorating behaviors.**
- Intrusive, negative, and hostile behaviors are a pervasive theme of the interaction.
  - Displays extremely persistent intrusive, negative, and hostile behaviors towards the infant (e.g. pushing or restraining infant, making negative comments about infant, etc.) during non-distress or distress interactions.
  - Caregiver sets the content and pace of the interaction (e.g., *may* use physical force to direct the infant's behavior/attention).
  - There *may* be several instances of verbal or physical aggression/hostility.
  - *May* mock or tease infant when infant is distressed.
  - *May* play frightening-type games in spite of infant cues that activity is unwelcome.
  - Several italicized behaviors *may* be displayed.

## **Dimension 5: RATING SCALE for WITHDRAWAL**

**Notes:** *At low levels there may be some redirection from self but no pervasive pattern of distancing from close contact. At mid levels there is a sense of not enough physical and emotional availability. There may be subtle withdrawal from closer interaction with the infant by moving to the other side of the room, interacting silently, withdrawing quickly from interaction, or directing the infant to play with toys as an apparent means to extricate themselves from more than brief interaction. At high levels there may be obvious avoidance of interaction with the infant.*

*The observer should take care to be alert to the possibility that some caregivers may have misinterpreted the instructions to allow their infant to play independently, thus prompting their withdrawal. During the Strange Situation, caregivers are given instructions to minimally interact with the infant during Episode 2 and 3, but not during Episode 5 and 8. Thus, they should only be scored as verbally or physically withdrawing during these episode 5 and 8 if they fail to respond to the infant's attempts to initiate interaction (i.e., do not score for verbal withdrawal if no interaction occurs).*

*Note. The parent should be able to maintain normal responsiveness to the infant, even during Ep. 2 and 3.*

### **1. No evidence of withdrawal.**

- Not at all withdrawing.
- Appears to be verbally and physically comfortable with the infant during non-distress or distress interactions.
- Caregiver does not hold the infant away from his/her body with stiff arms.

### **2. Mild evidence of withdrawal.**

- *May* display a very mild tendency to physically distance him/herself from the infant in non-distress interactions (e.g. direct to toys as substitute for self; *may* squat behind infant to play), but maintain appropriate verbal interaction.
- Caregiver does not use verbal communication to maintain distance from the infant.
- At reunion, greets infant and takes the initiative to interact.
- Caregiver does not hold the infant away from his/her body with stiff arms.

### **3. Some evidence of withdrawal.**

- *May* display some evidence of distancing him/herself physically from the infant in non-distress interactions (e.g., stands and looks down at infant, adopts a posture that *may* keep infant at a distance).
- *May* have an isolated incident of directing to toys as a substitute for more full participation with the infant.
- When infant is playing, caregiver *may* fail to scaffold or label play.
- Caregiver does not hold the infant away from his/her body with stiff arms.

### **4. Nonoptimal style but not persistent withdrawal.**

- *May* demonstrate more intense and more frequent tendency to distance him/herself physically from the infant in non-distress interactions.
- *May* have a number of mild instances of directing to toys as a substitute for more full

participation with the infant.

- When infant is playing, caregiver *may* more frequently fail to scaffold or label play.
- *May* have an isolated instance of maintaining distance from the infant.

#### **5. Clear evidence of withdrawal.**

- A few physical or verbal components of withdrawal *may* be present (e.g., silent interactions, no greeting, failure to verbally scaffold interactions, delayed responses to infant cues, awkward hold, “hot potato” effect).
- Caregiver *may* appear held back from fuller verbal and physical responsiveness.
- *May* demonstrate clear need to distance him/herself physically from the infant during distress or non-distress interactions; but *may* still respond occasionally to some signals of distress.
- *May* have difficulty around physically comforting the infant (e.g., keeps self at distance, directs outwardly to avoid contact).
- Silent interactions with the infant *may* be more frequent.
- *May* use a strategy of maintaining distance from the infant.

#### **6. Withdrawal predominates the interaction.**

- A number of physical and/or verbal components of withdrawal *may* be present (e.g., silent interactions, no greeting, failure to verbally scaffold interactions, delayed responses to infant cues, awkward hold, “hot potato” effect).
- *May* be active and persistent physical distancing and avoidance of contact with infant in non-distress or distress interactions.
- Caregiver still responds to the occasional cue.
- *May* demonstrate persistent difficulty around physical contact with the infant (e.g., stands at a greater distance, directs outwardly to avoid contact, interacts at a distance).
- *May* frequently interact silently with the infant.
- *May* use a strategy of maintaining distance from the infant.
- There *may* be several clear incidences of the caregiver holding the infant away from his/her body with stiff arms.

#### **7. Withdrawal, with little or no ability to be present with the infant.**

- Several physical and/or verbal components of withdrawal *may* be present (e.g., silent interactions, no greeting, failure to verbally scaffold interactions, delayed responses to infant cues, awkward hold, “hot potato” effect).
- Withdrawal is a pervasive theme of the interaction.
- Caregiver demonstrates extremely persistent avoidance of interaction or contact with the infant during non-distress or distress interactions.
- *May* demonstrate extremely persistent difficulty around physical contact with the infant.
- Silent interactions *may* be pervasive.
- *May* use a persistent strategy of maintaining distance from the infant.
- There *may* be several clear instances of the caregiver holding the infant away from his/her body with stiff arms.

**PART III:**  
**Parental Level of Disrupted**  
**Communication Scale**

**Rating Considerations:**

1. On the Parental Level of Disrupted Communication Scale, numeric points of 1-4 are considered not disrupted and 5-7 are disrupted.
2. As the numeric level increases so does the level of disrupted communication.
3. The descriptions of atypical behaviors at lower levels on the scale can be assumed to be true for the higher levels, with either increasing intensity at higher levels, increasing numbers of atypical behaviors, or fewer ameliorating interactions.
4. The italicized descriptor of each level is meant to be a general guideline.
5. It is followed by necessary criteria for the level, and then by possible, but not necessary, descriptors.

**LEVEL OF DISRUPTED COMMUNICATION**

1. **"High Normal"**

No evidence of disrupted communication. *The parent is consistently sensitive to the infant's signals, especially around distress, has appropriate boundaries, is neither withdrawing nor intrusive, gives clear messages, and maintains a clear adult role with the infant.*

- Can tolerate negative affect
- Uses physical comfort when the infant is distressed
- Uses sympathetic voice with the infant
- Sees infant's perspective and supports it
- Interactions are primarily smooth and reciprocal
- Rarely misses infant's signals in nondistressed play

2. **"Normal"**

Mild evidence of insensitive, but not disrupted communication. *The parent is generally sensitive to the infant's signals but may miss some clear cues.*

- Can tolerate negative affect
- Uses physical comfort when the infant is distressed
- Uses sympathetic voice with the infant
- Primarily attempts to support infant's perspective
- Interactions are primarily smooth and reciprocal



- *May* occasionally be directive
- *May* miss some clear signals in nondistressed play

3. "Low normal"

Some evidence of insensitive, but not disrupted communication. *In addition to missing some clear signals from the infant in non-distressed play, the parent demonstrates some nonoptimal behaviors, such as withdrawal or control.*

- Style of interacting with the infant is consistent and predictable
- Responds to most of the infant's signals
- Uses either physical or verbal attempts to comfort distressed infant
- Ameliorating interactions occur as well (such as picking up the infant at reunion, making warm eye contact in play, making positive or reassuring statements to the infant, or demonstrating other evidence of sensitivity or reciprocity)
- *May* have difficulty tolerating negative affect
- *May* have difficulty around physical contact
- *May* have a "teaching" style, involving verbal or physical directives
- *May* give brief indication of need for infant to focus on him/her

4. "Nonoptimal style but not disrupted communication"

Evidence of insensitive behaviors. *The parent demonstrates more persistent withdrawal, control, or demonstrates mild boundary issues such as acting in a playmate role or momentarily needing the infant to focus on him/her. While this parent may appear nonoptimal in terms of level of responsiveness, there is a consistent, nonhostile, predictable style of interacting with the infant with ameliorating behaviors.*

- Style of interacting with the infant is consistent and predictable
- Does not respond appropriately to some of infant's signals
- Demonstrates withdrawal, control, or mild boundary issues in interaction with the infant
- Uses either physical or verbal attempts to comfort a distressed infant
- Some ameliorating interactions occur as well
- *May* have difficulty tolerating negative affect
- *May* have difficulty around physical contact
- *May* sometimes prioritize own needs over infant needs.
- *May* have "teaching" style including significant control of the infant's play but also allows infant to disengage
- *May* have difficulty around infant's bids for autonomy

- *May* give some indication of need for infant to focus on him/her
- Interactions *may* appear arrhythmic in non-distressed situations

### **SUBTYPE 1: INTRUSIVE/SELF-REFERENTIAL SUBTYPE**

#### 5. "Disrupted Communication"

Clear evidence of disruption in affective communication. *The parent displays persistent mixed affective signals, persistent errors in responding to infants needs, intrusive behavior, confusion, disorientation, lack of responsiveness, and/or role reversing behavior with the infant. The parent often attempts to engage with the infant but may have a difficult time diverting from own style or needs, particularly when attachment affects are heightened as at reunions*

- While the parent appears to be trying to interact appropriately with the infant, the parent cannot divert from own needs or cannot seem to understand infant's signals
- Interactions appear arrhythmic, with delayed, inappropriate, or absence of response to infant signals
- Most, but not all, have difficulty around physical contact with the infant, including either complete withdrawal, or not providing comfort to the infant but seeking comfort from the infant, or handling infant in a rough or intrusive way
- *May* respond more appropriately while infant is calm
- Some ameliorating interactions *may* occur between parent and infant
- Style of interaction *may* not be predictable, with, for example, role reversal predominating at one time and intrusive control at another
- Response to the infant *may* include confusion, disorientation, or unusual voice quality (including gruff or deep voice)
- *May* be a few contradictory signals presented to the infant
- *May* use "teaching" style in combination with other atypical behaviors
- *May* prioritize own needs over infant's needs
- *May* have significant difficulty around infant's bids for autonomy and self-direction
- *May* demonstrate need for the infant to miss him/her in more than a casual manner, including increasing the infant's distress around separation

#### 6. "Highly Disrupted Communication"

Disrupted communication predominates. *The parent demonstrates persistent controlling, intrusive, negative or role reversing behaviors in response to the infant. The parent's responses frequently do not match the infant's signaling.*

- Demonstrates an inability to tolerate direct expression of upset or distress from the infant, which results in withdrawal, anger (mocking or shushing the infant), or escalating intrusive behavior.
- Demonstrates significant difficulty around most physical contact with the infant
- Cannot effectively provide comfort to the infant, either verbally or physically
- *May* display physically intrusive behavior or use harsh voice tone
- Interactions appear arrhythmic, with delayed, inappropriate, or lack of response to infant signals
- Has a difficult time diverting from own style or needs which *may* be exacerbated around infant distress
- Style of interaction *may* not be predictable, with, for example, role reversal predominating at one time and intrusive control at another
- Affective response to the infant *may* include indirect (or "masked") expression of negative affect, a lack of affect, or inauthentic affect
- *May* present contradictory signals to the infant
- *May* demonstrate need for the infant to miss him/her in a more than casual manner, including increasing the infant's distress around separation
- Parent's response to the infant *may* include confusion, disorientation, fear, or unusual voice quality
- *May* have significant difficulty around infant's bids for autonomy and use physical force to direct infant's behavior
- Despite these behaviors, there are some attempts, although ineffective, to address infant's needs

7. "Disrupted Communication with few or no ameliorating behaviors"

Disrupted communication predominates with almost no ameliorating behaviors. *The parent is highly unresponsive, ineffective, or inappropriate in relation to the needs of the infant. Not only do the parent's needs take priority, but also the infant's needs are not attended to in any significant manner. There is persistent evidence of mixed affective signals, intrusive behavior, withdrawal, hostility, lack of boundaries, role reversal, and/or disorientation, with little ameliorating contact.*

- Parent is not able to provide verbal or physical comfort to the infant
- Affective response to the infant includes indirect (or "masked") expression of negative affect, a lack of affect, or inauthentic affect
- There is significant difficulty around all physical contact with the infant, with fear, withdrawal, or intrusiveness dominating all bodily contacts

- Parent appears unable to take infant's perspective
- There are few or no ameliorating interactions with the infant
- Contradictory affective or behavioral cues are communicated to the infant
- Infant's intentions *may* be opposed, with parent doing the opposite of signal
- *May* display physical intrusion, negative comments about the infant, harsh voice tone, or mocking
- *May* demonstrate an inability to tolerate any direct expression of negative affect, which results in withdrawal, anger or escalating intrusive behavior
- *May* demonstrate need for the infant to miss him/her in a more than casual manner, including increasing the infant's distress around separation
- Parent's response to the infant *may* include confusion, disorientation, fear, or unusual voice quality
- Style of interaction *may* not be predictable, with for example role reversal predominating at one time and intrusiveness at another.

## **SUBTYPE 2: HELPLESS/FEARFUL TYPE**

### 5. "Disrupted Communication"

#### Clear evidence of disruption in affective communication

*The parent demonstrates delayed responsiveness, elevated withdrawal, mildly fearful behavior, confusion or disorientation with the infant. Although little or no overt hostility is displayed, there may be a sense of not enough availability of parent to the infant or little assistance to infant in coping with a difficult situation.*

- While the parent appears to be trying to interact appropriately with the infant, the parent appears hesitant or held back from a fuller responsiveness
- Most, but not all, have difficulty around physically comforting the infant. This *may* appear as delay in response until infant insists, abbreviated response (cursory pick-up/put down), moving back as infant approaches, or withholding adequate responses in a teasing manner.
- The parent appears held back from assuming fully parental stance, whether failing to make appropriate initiatives (e.g. greeting, approaching infant) or making initiatives but with evident tension, false affect or apprehension.
- Parent capitulates to infant demands, which *may* appear as responsive interaction, but closer attention reveals that the infant rather than the parent is taking initiative to achieve fuller physical or emotional contact, with some resistance by parent.
- Response to the infant *may* include confusion, disorientation, frightened behaviors (such as startling); or unusual voice quality, including frightened or high-pitched squeaky voice, especially at reunions, but no pervasive odd affective quality.
- Subtle withdrawal from prolonged close contact or interaction with the infant is a repetitive feature of the interaction. This is evidenced both by physically distancing behaviors and by brief and unelaborated verbal or play interactions.

For example:

- Parent tends to stand at greater distance than necessary, walk around infant to achieve distance, or interact from a distance
- Parent *may* stand silently or return directly to chair upon reunion with little or no greeting to infant
- Toys are often inserted between infant and parent and used as a substitute for more personal or affective forms of contact, even when infant is signaling for contact.
- There *may* be hesitation or tension at moments of heightened attachment, such as greetings or contact-seeking by infant.
- Response to infant's signal *may* include hesitation, stepping back or away, teasing, putting toy between infant and self, directing infant's attention away from self toward toy, or by cursory compliance, such as kidding infant, picking up briefly, or quick, awkward hug
- There is typically little overt negative affect or intrusiveness

## 6. "Highly Disrupted Communication"

### Disrupted communication predominates

*The parent demonstrates lack of responsiveness to cues, confusion, disorientation, withdrawal or fearful behaviors in response to the infant. The general response to the infant appears to lack sensitivity in that the parent's style frequently does not match the infant's signaling. Although there may be little or no overt hostility toward infant, there may be avoidance of interaction with infant, or an odd, emotionally empty quality to the interaction.*

- Demonstrates an inability to tolerate direct expression of affect from the infant which results in abbreviated, ineffective, or inappropriate soothing techniques- seems like 'not enough available' for infant
- Demonstrates significant difficulty around most physical contact with the infant.
- Interactions appear arrhythmic with delayed or inappropriate response to infant signals
- There *may* be a pervasive empty or odd, disoriented quality to relatedness
- Despite these behaviors, there are some attempts, although ineffective, to address infant needs
- Parents' response to the infant *may* include confusion, disorientation, fear or unusual voice quality
- *May* make steps to avoid infant, such as failing to verbally greet the infant, walking at a distance, sitting in a chair upon greeting, or taking a circuitous path around infant
- *May* demonstrate fearful voice quality or facial expression
- There *may* be little overt negative affect or intrusiveness
- There *may* be hesitation or tension at moments of heightened attachment, such as greetings or contact-seeking by infant, including hesitation, freezing, or voice quavering, cracking, or stuttering
- *May* walk right by infant
- There *may* be no greeting upon reunion
- *May* be little sense of authority of parent
- *May* be little collaboration around infant's initiatives
- *May* be 'hot potato' quality to physical contact with infant
- Direction to toy appears as a move to 'get out of' interacting with the infant

- *May* back up or appear frightened by excited or exuberant infant play
- *May* whisper to infant in timid, fearful manner

**7. "Disrupted Communication with few or no ameliorating behaviors".**

*The parent is highly unresponsive, ineffective, or inappropriate in relation to the needs of the infant. Not only do parent's needs take priority but also infant's needs are not attended to in any significant manner. If withdrawal, disorientation, or confusion predominate with few ameliorating behaviors or if there is a lack of responsiveness to distress, without any effort to respond, score as "7". Also score 7 if strong indices of fearful or withdrawing behavior are combined with marked intrusive and self-referential behavior. In this case, consider also intrusive/self-referential type. Differentiation between these two scales may be difficult at this scale point.*

- Parent is not able to provide verbal or physical comfort to the infant.
- Affective response to the infant includes lack of affect or inauthentic affect
- There is likely marked withdrawal or lack of response to the infant
- There is significant difficulty around all physical contact with the infant with fear or withdrawal dominating bodily contacts
- Parent *may* demonstrate fearful behavior in response to the environment
- Parent *may* appear unable to take infant's perspective
- There are few or no ameliorating interactions with the infant
- Contradictory affective or behavioral cues *may* be communicated to the infant
- *May* demonstrate an inability to tolerate any direct expression of negative affect, which results in withdrawal, fearful behavior or attempts to silence negative behavior
- Parent's response to the infant *may* include confusion, disorientation, fear, or unusual voice quality

**ADDENDUM TO PARENTAL LEVEL OF DISRUPTED COMMUNICATION SCALE**  
**DIFFERENTIAL CODING ISSUES**

**1 vs. 2:** Score as 2 if the parent misses more than a few cues or if the parent demonstrates mild controlling behaviors.

**2 vs. 3:** Score as 3 if the parent issues many directives or if directives include a physical component. Also score as 3 if role reversing or withdrawing behaviors occur more than a few times, or if a single more worrisome interaction occurs.

**3 vs. 4:** Score as 3 if the parent is able, during reunions, to immediately provide appropriate and warm comfort to the infant, despite less appropriate interactions in less distressed play. Score as 4 if parents persistently has a style (withdrawing, controlling, mild boundary issues) of interacting with the infant that does not appear optimal for the infant, but still contains a good deal of warmth and positive parental behavior.

4 vs. 5: Intrusive, self-referential type: While both 4 and 5 involve persistent nonoptimal behaviors, the big differential is that in 5 the parent is not able to allow the infant a strategy (escalating signal at several points, withdrawing, playing independently, complying with parent's demands) in relation to the nonoptimal behavior. For example, if the infant distances, the parent seeks closeness. When the infant seeks closeness, the parent will likely withdraw. If the parent's behaviors seem to counter the infant's signal, score 5. Also score as 5 if several disoriented or "bizarre" behaviors are exhibited by the parent. Score at least 5 if boundary confusion includes a sexualizing element (this will likely qualify for 6 or 7).

4 vs. 5: Fearful type: With 5, will generally see a parent who uses withdrawal or distancing in interaction with infant. There may be a sense of the infant always being 'put down too soon' or of mother not being available enough to infant. If parent shows clearer signs of fearfulness, score 5 or 6.

5 vs. 6: Intrusive, self-referential type: Score as 5 if the parent appears to be exerting effort to notice infant's signals and attempts to meet them. Also score as 5 if the parent's behavior is appropriate in nondistressed situations. Score as 6 if there is more evidence of harshness, hostility, sexuality, or masked anger.

5 vs. 6: Fearful Type: Score as 6 if withdrawal is a more persistent strategy. Both 5 and 6 include some responsiveness, especially to distress. Score as 6 if parent appears persistently frightened, hesitant or only reluctantly responsive in response to infant attachment behaviors; and/or is persistently abdicating of a parental structuring role; or mixes frightened and abdicating behaviors with mocking/teasing behaviors in response to infant affects.

6 vs. 7: Both types: Score as 6 if the parent demonstrates some tendency to interact appropriately or attempts in some way to meet the infant's needs, whether completely effective or not. Score as 7 if hostility, withdrawal, etc. allow little ability to even attempt to meet the infant's needs. Score as 7 if the consistent parental style is either mocking, physically hostile, sexualizing, disoriented or withdrawn in response to distress.

#### ADDITIONAL CODING INSTRUCTIONS

##### Narrative instructions

- The goal of the narrative section is to capture as completely as possible the behavior of the mother interacting with her infant. Be careful to note the behavior of the mother without judging her behavior based on the infant's style or temperament. In noting infant behavior, be careful that

it is recorded only as relevant to the interaction with the mother. For example, it would not be important to note which or how many toys an infant played with but it would be important to note that an infant reached towards his/her mother to be picked up because this provides information necessary in evaluating whether the mother responded to the infant's signal.

- A sheet of commonly observed behaviors is provided in order to alert each coder to behaviors that can be noted. This can be referred to periodically to provide a modicum of reliability to the language each coder is using. It can also be used as a thesaurus, or word finding aid, when finding the language to describe a behavior is difficult.

### **Itemized Behavior Ratings Instructions**

1. Start by writing the behavior being observed in your narrative.
2. If a behavior is difficult to code, re-watch it on the videotape.
3. Put a tally mark next to the description on the itemized codes that you feel best fits that behavior.
4. Write the dimension number(s) of the category you scored the behavior in, next to the behavior on the narrative.
5. If an atypical behavior occurs that has not been described, write it down either under the heading you feel that it fits in or, if necessary, in the "Other" heading which appears on the tally sheet.
6. After finishing the first review of the narrative and coding the behaviors, re-review the narrative to consider whether any behaviors may have been overlooked. In particular the second review of the narrative should be geared towards attention to whether contradictory signaling by the mother to the infant has occurred (frequently a secondary code), or whether a sequence, such as rapidly shifting activities, or rapidly shifting affect has occurred.
7. After noting all behaviors, total the score for each dimension, put totals in the boxes near each heading on the tally sheet and compute the total of all dimensions.

### **Additional rules for behavior ratings**

1. Code each behavior only once. For example, if a mother does not respond to an infant's cry, this should be coded as an affective communication error, despite the fact that this behavior is also withdrawing. This is one process that encompasses two dimensions. Therefore there is no code for this behavior under withdrawal. However, this behavior will likely influence your rating on both Dimension 1 and Dimension 5.

While most behaviors will only be scored once, behaviors should be noted twice when it is clear that two atypical processes are occurring at once. For example, if a mother grabbed an



infant hostilely while simultaneously touching him/her in a manner that was sexual, this would be scored for both intrusiveness/negativity and role/boundary confusion.

Behaviors should not be scored twice simply because there is a lack of clarity about where they fit. Contradictory signaling is often scored as a secondary code since it involves simultaneously delivering two disparate messages, one of which is frequently hostile. For example, if the parent squeezed the infant's jaw while saying, "I love you," this would be scored for intrusiveness/negativity as well as contradictory signaling.

2. Code discrete behaviors every time they occur. This includes simultaneous verbal and physical behaviors. For example, if the parent said, "you're bad," and simultaneously pushed the infant, this would be scored two times.
3. Coding continuous behaviors. A continuous behavior can be scored more than once if there is a disruption in it. For example, awkward holding should be scored twice if the parent moves the infant from one awkward position to another or if the parent places the infant down and picked her/him up awkwardly again. Other unusual continuous behaviors, such as continuously looming at the infant, can be scored as additional behaviors each time the infant gives a clear signal that the behavior is unpleasant. In the event that a parent ignores an infant's signal, such as continuous crying, this can be scored as an additional behavior each time the infant escalates, or otherwise modifies the signal.
4. Code fearful and disoriented voices each time they occur. Each utterance should be coded for a voice only one time. If there is a significant break in dialogue, and the voice continues, the voice tone should be re-coded. An intake of breath between phrases indicates a new utterance. If the voice tone shifts from one troubling voice to another within the same utterance (e.g., starting in a high-pitch squeaky voice and then becoming very ghost-like/whispery), both voices should be coded.
5. Code the absence of a response, every time that it is called for. For example, if the infant calls for the mother, this should be scored each time the infant attempts the interaction and there is no response.
6. Code sequences of directives related to role/boundary confusion each time they occur, regardless of whether they occur within the same behavioral sequence. For example, if the parent said, "Say ma-ma, 'ma-ma,' please say mama," this would be scored as two behaviors (i.e., repeated self reference x 2).
7. Silence (or lack of contact) without infant initiation can only be scored once per episode (or every 3 minutes of interaction) of the Strange Situation, except for the first two episodes, where no score should be given unless the infant initiates an interaction. This is because of the directions of the Strange Situation, which instruct the mother to pretend to read a magazine and not approach the infant unless the infant initiates an interaction.

## BEHAVIOR DESCRIPTORS LIST

**WARNING:** This list is not meant to be complete, nor is it perfectly categorized, nor does it include verbs exclusively.

Voice: Stern, sing-song, sweet, sudden lowering in voice tone, sudden rise in intonation, stammering voice quality, loud, sharp, haunted tone, hushed intimate tone, harsh tone, baby talks

Expression: Inauthentic affect directed at I, anomalous expression, smiles, laughs, looks, averts gaze, angry face, smile face, makes eye contact, ignores, distracts, frightened face, contradictory emotions expressed simultaneously

Relates via toys: Withholds toy, overresponds, offers toy over distance, steers I towards toy from behind, directs I to toy not self, positions towards toy, takes toy, closes book while I still engaged, puts toy out of reach, taunts with toy, throws toy at, entertains via toy, plays with, plays game, engages via toy

Posture/Movement: Attack posture, threatening posture, vigilant posture, trance-like posture, sits on hands, tenses shoulders, crosses legs, crosses arms, engages at I's eye level, stands while I sits, leans away, leans towards, prevents contact, straddles, squats, kneels, maintains distance, is out of reach, allows physical contact, wanders, crawls, moves past, moves away, moves toward, leaves

Interaction/Touching/Holding: Holds, holds awkwardly, recoils, looms, holds despite resistance, turns I's head, wipes nose vigorously, pushes, restrains, pursues, turns I away from body, lifts I from behind, catches, grabs, repositions, invades space, handles timidly, handles roughly, hits, rejects contact, allows contact, picks up, responds, forces I into position, accepts touching, strokes, squeezes jaw, touches, kisses, points, offers, shows, gives, takes, imitates, caresses, fondles, ruffles hair, holds hand, molds with I, comfortable hug, engages

Verbal: Greets warmly, redirects, invites, names object, praises, sings, whistles, asks questions, labels, quietly answers, asks, sympathizes, confirms, demonstrates, encourages, impatiently directs, mocks, elicits reassurance, defers to I, asks permission, baby talks, sensitive to rejection, directs comments back to self, encourages negative behavior, overemphasizes sexuality, interrupts, commands, directs, disapproves, corrects, verbally appears confused, hesitates, calls, yells, orders, reprimands, silent, does not respond, repeats, urges

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