TRAUMA AND ITS RELATION TO WORKING MODELS OF RELATIONSHIPS:
ATTACHMENT AND LOSS IN MOTHERS OF CHILDREN WITH DISABILITIES

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**Introduction**

Ainsworth (1984) has pointed out that there are three primary ways in which attachment behavior has been conceptualized as "adaptive". From an evolutionary perspective, attachment behavior (e.g. staying close to a parent in time of danger) confers on a child a survival advantage. In this phylogenetic sense, all attachment behavior is adaptive because it facilitates the continuation of a species into the next generation. However, individuals may be exposed to environments or contexts that make different attachment behaviors more or less advantageous. For example, some children may need to be more attuned than others to their parents' physical or psychological accessibility in order to insure that their attachment needs are met. Therefore, it is adaptive from an ontogenetic perspective for the specific attachment behaviors adopted by an individual to be sensitive to qualities of the environment or context.

While individuals can adapt to differing relationships contexts in order to survive, the flexibility of the individual to tolerate disruptions in expected patterns of relationships becomes more limited. Ainsworth points out that attachment behavior has often been thought of as adaptive or maladaptive for the individual in a third way. "Adaptation" in this third sense attempts to understand the link between quality of attachment and an individual's functioning in relationships, whether or not the
adaptive behaviors interfere with the ability to survive and reproduce successfully. It is in this third sense that this study proposes to examine the relation between adult attachment in mothers, the success with which mothers are able to resolve a diagnosis of cerebral palsy or epilepsy in their child, and the quality of attachment of the child.

Previous research has demonstrated convincingly that there is a link between the quality of a mother's state of mind with respect to attachment and the quality of her child's attachment classification in infancy (Van IJzendoorn, 1992). A recent study by Marvin and Pianta has found a connection between whether or not a mother has been able to resolve a diagnosis of cerebral palsy in her child and the quality of the child's attachment (Marvin & Pianta, submitted). The current study proposes to look at all three of these constructs (a mother's state of mind with respect to attachment, her reaction to her child's diagnosis, and attachment classification of the child) to understand how they are interrelated.

The existing body of attachment theory and research predicts that a mother's state of mind with respect to attachment will be related both to her ability to resolve the grief that arises when her child is given a diagnosis of disability or chronic illness and to the attachment behavior of her child as observed in the Strange Situation. While, from an ontogenetic perspective, even insecure patterns of attachment may be thought of as adaptive, this study proposes that insecure attachment is likely to be
associated with different, less adaptive, patterns in individual functioning than is secure attachment when observed in the context of the external stressor of diagnosis of chronic illness or disability in one's child. It is predicted that mothers who are classified as secure with respect to their own attachment experiences in childhood will be more likely than those classified as insecure to be able to give evidence that they have resolved the grief that results when a child is given a diagnosis. The children of these mothers are likely to be classified as secure with respect to attachment. It is further predicted that mothers who are classified as insecure with respect to attachment are likely to have had difficulty resolving the grief that accompanies diagnosis of their child and that their children are likely to be classified as insecure. The proposed mechanism that links these three constructs is an individual's unconscious mental model of relationships.

In the sections that follow, I first outline how individuals construct unconscious mental representations of the world within which their experience in relationships is encoded and which serve as models for making sense of the behavior of others and for guiding one's own behavior in relationships. This section is followed by a brief summary of attachment theory and a review of attachment research that illustrates how specific mental models of the parent-child relationship influence both an individual's expectations of relationships and behavior within relationships throughout the life span. Next, I review the effect of trauma
upon mental models, specifically focusing upon the diagnosis of one's child with a disability or chronic illness as a special case of trauma to the mental model of relationships. Finally, I discuss the specific goals of this study and discuss how measures of attachment and parents' reactions to the diagnosis of a handicapping condition in their child can shed more light upon the trauma and it's relation to mental models of relationships.

**Mental Models**

1. **The Structure and Function of Mental Models**

Freud (1953, 1959) was the first to propose that human beings process information on both a conscious and an unconscious level. He proposed that human behavior could only fully be understood if one looked beyond the rational conscious mind to the unconscious. According to Freud, reality is represented symbolically in the unconscious mind (through the mechanisms of displacement, condensation, symbolic representation, and association) but not accurately reproduced there. The intent of the unconscious mind is to pursue gratification and fulfillment of wishes. This goal runs contrary to the survival interests of the individual, and therefore Freud postulated that conscious functioning evolved to enable individuals to survive in a world where immediate gratification of all wishes was not evolutionarily adaptive.

Epstein (1994) has pointed out that one of the major difficulties with Freud's conceptualization of the unconscious is that its existence serves no evolutionary purpose. It is
therefore difficult to understand why Freud's unconscious would have evolved in the first place. Over the last several decades, however, researchers studying human cognition have also proposed that there is an unconscious or automatic component to memory and cognition, and in fact that most processing of cognitive information takes place unconsciously (Johnson-Laird, 1983; Stern, 1986). The unconscious, as proposed by cognitive psychologists is adaptive to the functioning and survival of the organism. Cognitive psychologists propose that the unconscious is a mental representation of experience that enables advanced organisms to behave automatically based on their history of previous interaction in similar situations. In this way, more advanced organisms, including human beings, are able not only to react to their immediate environment (as even such primitive organisms as protozoa can do), but also to form expectations of interactions within their world.

This ability to act without thinking about it has many evolutionary advantages. First, it is much more efficient for an organism to be able to evaluate each current experience based on previous experience than it is to consciously process each experience anew (Epstein, 1994; Stern, 1989). Second, unconsciously motivated action, because it is automatic and reflexive, will also be quick, and the ability to act quickly confers a decided advantage on an organism that is faced with danger. This clearly poses a survival advantage. Third, an unconscious model that is continuously updated based on
experience becomes stronger as each new experience supports it and it resists deterioration. Learning is therefore likely to be lasting, continuously updated, stable, and not easily eroded.

Unconscious mental representations or models, then, provide a parsimonious mechanism by which organisms regulate behavior. As these models of experience become very complex they require an overarching organization capable of integrating information from multiple sources and of resolving contradictory unconscious impulses. Johnson-Laird (1983) has speculated that consciousness may originally have evolved as a system to oversee and direct many complex unconscious processes within a single organism toward the same goal. Consciousness then serves the function of providing the organism with flexibility and adaptability to new situations.

Craik (1943) proposed that the first step in creating mental models is to convert external experience into internal symbolic representation of that experience. Organisms interact with their external environment using sensory organs which perceive the characteristic sensory patterns of objects in the external world. The information contained in these sensory perceptions is used by the nervous system to create a model of the original object. These models are representations of the real thing, but they are not the thing itself. In fact, they do not need to contain all the elements of the real thing, but only to represent it accurately enough to be a guide to behavior.
Models, then, do not contain all of the information about the reality they represent. They contain just enough information to enable the organism to react appropriately to the real entity. For example, the mental model that a new driver has of an automobile is likely to be different than that constructed by a mechanic, and neither is likely to contain an in-depth knowledge of quantum physics because neither needs that level of information to interact appropriately with the automobile. (Johnson-Laird (1983) points out that, for this reason as well, it is advantageous that these mental models be unconscious. If human beings knew that their perceptions of the world were actually representations, they might tend to treat those perceptions as less than reality and as things to deliberate about rather than to act upon. This would not be evolutionarily useful when the organism was faced with danger, for example.) So, an individual's view of the world depends both on characteristics of external reality and on the way we as organisms perceive and represent that reality. "All our knowledge of the world depends on our ability to construct models of it" (Johnson-Laird, 1983, p.402).

II. Mental Models of Relationships

Stern (1989) has built upon this model of cognitive processes to explain the way in which relationships become internalized as mental models. He proposes that infants begin to categorize their memories of individual experiences of their world into prototypes based upon the unchanging aspects of that
experience. Over time infants both gain increased exposure to experiences and become able to process and encode experience in more sophisticated ways. Consequently, the mental prototypes of experience also become more sophisticated.

Several mechanisms have been proposed to explain how these prototypes are established and become more sophisticated. Perhaps infants are born with an inherent capacity to arrange interpersonal experience into certain categories, as they are born with the ability to categorize colors. Perhaps memories of each experience are preserved and integrated in a computational way, or perhaps the prototypes themselves are the basic unit of the mental representation and they are updated by experience which is itself not uniquely preserved in memory. Perhaps there is no single representational prototype at all but memory traces are superimposed upon one another creating a cumulative abstract pattern of experience as well as preserving aspects of the individual memory trace. The model could be activated by any interaction of the component memory traces, even if that pattern had never been experienced before by the individual (McClelland & Rumelhart, 1985). Whatever the mechanism, experience becomes organized into categories that form the basis of what individuals expect of future experience.

Sroufe and Fleeson (1986) have proposed that, because mental models are constructed based on a child's experience within relationships, both sides of the relationship become a part of the individual's pattern of understanding relationships. Bowlby
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(1973) too has proposed that the child-caregiver relationship is represented internally by two halves of a whole. Individuals make sense of relationships by internalizing the role that both play within the relationship and therefore the pattern of the entire relationship resides within each individual. For example, a child who experiences the relationship with a parent as supportive develops and mental model of the parent as loving and the self as worthy of love (Bretherton, 1985). Because children unconsciously internalize both sides of the relationship, they can play both parts. Relationship patterns are carried forward into new relationships (for example, with friends, or with one's own children) as people behave in ways that call forth the same pattern of relationships with others that they experienced with their primary caregiver.

The intergenerational transmission of mental models of relationships supports the idea that the distributed model of memory as proposed by McClelland and Rumelhart (1985) may best describe the process by which mental models are created from previous experience. As stated above, the distributed model proposes that images (or symbols) of experience are superimposed upon each other and therefore the model may activate patterns of behavior that the individual never actually experienced but that are connected by common elements of the individual's experience of relationships. Therefore individuals may behave in ways that are consistent with the model even though they have never actually behaved that way before. Caregiving behaviors would
thus be contained within the mental model even though the individual had never before acted in the caregiver role.

So, unconscious mental models thus insure that infants learn from their experience of relationships. The models internalize learning in such a way that individuals are able to act reflexively under familiar situations rather than deliberately and consciously. The models also insure continuity of experience for an individual both within the formative relationship and in new relationships because behavior is guided by history of subjective experience.

Because mental models are unconscious there is no way for individuals to access them directly or for those who would study mental models to observe them directly. In fact, the only way to access mental models is to construct a theoretical model of the mental model and then look for patterns in behavior that provide clues to whether or not the theoretical model appears to accurately represent the mental model we hope to understand. One such theoretical model, attachment theory, has been proposed to describe the mental models individuals use to negotiate interpersonal relatedness.

**Mental Models and Attachment**

I. *Infancy: Mental Models of Relationships and Behavior*

Attachment theory (Bowlby, 1979, 1982) proposes that human beings possess an evolutionarily pre-adapted behavioral system which functions to keep the human infant safe and to insure its survival. The attachment behavior system is made up of the
constellation of child behaviors that function to keep the child in proximity to or contact with its parent or enable the child to obtain proximity or contact to the parent under conditions of stress that may be either internal (e.g., hunger, pain) or external (e.g., loud noises, unfamiliar people).

According to Bowlby (1980, 1982), unconscious regulation of the attachment system is based both upon a child's perceptions of the dangerousness of the environment and upon the child's perception of the availability of the caregiver. For example, even under conditions of minimal danger, the attachment system might be highly activated if a child perceived the caregiver to be unavailable. A child might perceive a caregiver to be unavailable based upon current external reality (e.g., the caregiver is out of sight) or upon the child's mental model of caregiver availability which is constructed from experience of previous interactions.

Because the regulation and activation of the attachment behavior system is based both on characteristics of the situation and on the individual's history of attachment related actions and outcomes within relationship, it has both a conscious and an unconscious component. The child's mental model of previous interactions with the caregiver provides the child with an unconscious map of how to behave, but, should the characteristics of the situation require it, the child can consciously override unconsciously regulated patterns of behavior. Under conditions of minimal or predictable discomfort the mental model would act
to direct the child's behavior. However, if the discomfort or stress should become too great for the unconscious model to handle the child could decide to act differently.

As stated above, internal representations of relationships cannot be measured but only inferred from observation of interactions between a parent and child. It is hard to know when two people are interacting how much of the interaction is the result of responses to stimuli in the interaction and how much of the pattern of interaction is governed by mental models of the relationship. However, observations of children's attachment behavior when the parent is absent have provided evidence for the existence and form of mental models because of the absence of stimulus-response reactions that might influence a child's behavior when a parent is present (Main, Kaplan, & Cassidy, 1985).

The Ainsworth Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) uses information about a child's behavior during separation and during reunions immediately following a brief separation to understand how the child's mental model of the relationship is organized. Ainsworth et al. (1978) observed three qualitatively different patterns in child behavior on reunion with a parent after a brief (three minute) separation. Secure infants (group B) greeted the parent or sought contact with her when she returned and then, once comforted, returned to play. Insecure-ambivalent/resistant infants (group C) showed angry behavior, such as temper tantrums, or extremely passive
behavior. These infants typically exhibited great distress, and had great difficulty being comforted. Insecure-avoidant infants (group A) avoided or ignored the parent on reunion and focused their attention on the toys or the room.

To understand how these different patterns of child attachment behavior help us to understand the child's mental model of relationships, we need to turn for a moment to Bowlby's interpretations of observed child behavior after extended separations from caregivers which provided the foundation for the development of attachment theory. Young children who had been removed from the care of their caregivers for long periods of time (two weeks or more) behaved very differently with their parents when they were reunited than they had before the separation (Robertson, 1953; Robertson & Bowlby, 1952; Heinecke & Westheimer, 1966; Robertson & Robertson, 1971). Early in a separation, children were likely to seek out their parents eagerly when they visited. As separations grew longer, children were likely to be irritable, angry and clingy on reunion with their parents. After extended separations, children would avoid their parents or turn away from them. Bowlby believed that this change in behavior toward parents reflected a change in the children's mental models of their relationship with the parent and that this change was based on their experience of the parent's physical accessibility. The children were revising their mental model of the relationship with the parent even given lack of interaction with the parent.
The reunion behaviors of children who had been separated from their parents were similar to the behaviors that Ainsworth observed in infants who had been briefly separated from their mothers during the Strange Situation. However, none of the children in Ainsworth's sample had experienced an extended separation from their parents. She concluded therefore that the organization of child behaviors in the Strange Situation was directed by the child's mental model of the parent's characteristic physical or psychological accessibility in the context of their everyday relationships. This conclusion was supported by her observation of mother-child interaction in the home. Mothers of secure infants were observed to be sensitive and responsive to their child; mothers of insecure-ambivalent/resistant infants were found to be insensitive to their child's cues but not physically or emotionally rejecting; mothers of insecure-avoidant infants were observed to be insensitive to child cues and discouraging or rejecting of physical contact and emotional expression (Ainsworth, Blehar, Waters, and Wall, 1978).

Under optimal conditions, therefore, activations of the attachment system because of danger or distress results in the child successfully seeking proximity or contact with the parent, and the child develops an unconscious mental model of the parent as accessible and a source of safety. However, all parents are not optimally accessible and therefore it is ontogenetically adaptive for the attachment system to adjust to the level of
accessibility of the parent to insure the maximum level of protection and safety for the child. Insecure-avoidant children have learned from their relationship history with the parent not to act on their subjective distress by seeking proximity or contact. Main (1977) proposes that the advantage to the child of following this course of action is that the child does not antagonize or upset the parent, so that if the danger should become greater the parent is at least minimally accessible and would likely protect the child.

Sroufe and Waters (1977) reported that avoidant infants showed an accelerated heart rate on reunion despite the fact that the child’s behavior suggested indifference about the mother’s return. This finding supports the theory that avoidant children do not experience the stress of the separation differently than their secure counterparts, despite their apparent indifference. However, they react differently to this experience of stress because their mental model of interaction based on their previous experience within this relationship contains the information that the optimal way for them to behave under conditions of stress is to minimize feelings or displays of distress and to focus their attention away from the relationship. These children develop a strategy for dealing with distress that is different from the spontaneous reaction of an infant to distress. While this is ontogenetically adaptive, it restricts the range of available behavior that the infant can engage in and therefore decreases the infant’s flexibility in responding to stress. The formation
of this mental model has served to increase the flexibility of the species in adapting to less than optimal circumstances but it decreases the flexibility of behavior for the individual child.

Insecure-ambivalent/resistant children also develop a strategy for dealing with distress that decreases the flexibility with which they can act. In contrast to both secure and insecure/avoidant children, insecure-ambivalent/resistant children are extremely sensitive and responsive to feelings of distress. As stated above, the parents of these children are not rejecting of their expressions of emotional distress. However, they are insensitive to the child's signals. These children learn from their relationship history to maximize behavioral displays of distress in order to insure that parents respond. In fact, insecure-ambivalent/resistant children often continue to express distress even under conditions which would normally promote a decrease in distressed behavior (such as contact and soothing). This is adaptive behavior, from an ontogenetic perspective, on the part of the child if the parent is unpredictably responsive. However, the unfortunate result is that these children become preoccupied with their relationship with the parent and unable to focus attention on other aspects of the environment.

Both insecure patterns of attachment behavior are therefore characterized by a restriction of behavior or attention to the aspect of the external world that is most likely to offer the child safety (Main, Kaplan, & Cassidy, 1985). This observed
restriction of attention is a clue that helps us to understand the structure of the child's unconscious mental model of relationships. The behavior of insecure-avoidant children does not appear to reflect a conscious decision to focus attention so fixedly on the environment and away from relationships nor do insecure-ambivalent/resistant infants consciously decide to be inconsolable in the face of stress. Therefore it is likely that their mental models of relationships contain elements which prescribe those behaviors as the most effective course of action.

Infant behavior on reunion with the parent thus provides a way to gain access to the child's mental model of attachment. Because secure children are sure that their caregivers will be responsive in times of distress they neither need to constantly anticipate distress, as do insecure-ambivalent/resistant children, nor ignore distress, as do insecure-avoidant children. Behavior is open, spontaneous, and uninhibited. They can explore their environment with a flexibility that the other two groups of children do not have because their mental model contains the information that there is nowhere they can go that they cannot get back from to safety. Insecure babies, however, rely on specific strategies to maximize their chances of obtaining needed protection from the caregiver and they consequently lose the flexibility of behavior that is characteristic of secure children and the freedom to explore unrestrictedly.
II. Later Childhood: Mental Models of Attachment and Thinking

Studies of attachment in later childhood reveal evidence for continuity in relationship patterns despite little evidence for stability of individual behaviors across time. The patterns of relationships that children experience in their families of origin have been shown to be carried forward into their relationships with others (see, e.g., Elicker, Englund, and Sroufe, 1992, for a more complete discussion of behaviors in later childhood associated with secure/insecure attachment classification in infancy). This continuity is predicted given the underlying hypothesis that it is unconscious mental models of relationships that drive behavior.

With infants, the way to tap their mental model of relationships is to observe their behavior. However, as children get older, they begin to use symbols to represent their relationships with others and their own role in those relationships. So, in addition to internalizing actual images of experience, children begin to be able to use and manipulate cognitive symbols, such as words, to represent their experience. Flexibility of thinking and language consequently become indicators of their mental models of relationships as well.

Rosenberg (1984) examined the imaginative thinking of 4½-year-old children and found that the fantasy play of those who had been classified as insecure-avoidant in infancy contained almost no people. This was not the case for the play of securely attached children. These results seem to suggest that the
behavioral strategy of attending to things rather than people when their attachment system is stressed during infancy, which is characteristic of the insecure-avoidant infant, predisposes preschool children to adopt a similar strategy for what they think about.

Main, Kaplan, & Cassidy (1985) asked 6-year-old children to tell a story about how children could deal with a separation from their parents and found that children who had been classified as secure in infancy were likely to be able to think and talk about this situation. In effect, they were able to explore it in their minds. Children classified as insecure or disorganized with their mother in infancy were most likely to be unable to say what the child would do if faced with a two week separation from parents.

The results of these studies seem to indicate that a mental model of secure attachment, which made it possible for infants to confidently explore their physical environment, allows children as they get older to move around easily in their internal world as well. Insecure 6-year-olds demonstrate a restriction of affect and a limited ability to explore their internal world that is akin to the restricted attention of insecure infants in the Strange Situation. The lack of flexibility that was characteristic of insecure behavior in infants had become a lack of mental flexibility at age six (Rosenberg, 1984; Main, Kaplan, and Cassidy, 1985). Unconscious mental models have become
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responsible for directing not only how an individual behaves, but also how the individual thinks.

Strage and Main (1984) documented patterns of discourse in mother-child dyads when the child was 6-year-old and were able to identify characteristic patterns of discourse that map onto the attachment classifications of the child. The interaction of secure dyads was characterized by flexibility and reciprocity. Conversations were balanced and covered all kinds of topics, with both the parent and the child inviting the other to talk and then responding in turn. Secure dyads interacted easily and spontaneously with each other and there was nothing that they could not talk about.

Dyads in which the child had been classified as insecure-avoidant talked mostly about objects and activities. Parents tended to address the child with questions that invited a "yes" or "no" answer or that expressed enthusiasm but invited no response at all (e.g., "Wow, what a great toy.") Children tended to respond minimally. For two of their subjects, Main and Strage observed that the parents did not speak to the child at all during the 3-minute reunion. The pattern of verbal interaction in these dyads was clearly restricted. There were not enough children who had received a classification of insecure-ambivalent/resistant as infants to be able to observe any clear pattern of discourse that characterized that group. However these results offer some preliminary evidence that the mental model of the relationship provides an organizational structure
for the way in which the parent and child organized their patterns of interaction with each other.

As has been shown, attachment researchers have provided much evidence to support the theoretical position that mental models are responsible for directing and organizing behavior and attention in infancy and early childhood. As cognitive psychology would predict, these mental models have been shown to have further impact on the way an individual thinks about relationships and behaves in relationships with others.

As children develop cognitively and begin to use symbols, such as words, to interact with and make sense of their world, they begin to represent the world and their relationships symbolically within their mental models as well. The units that make up the mental model change from images to symbols. However, the organization of the model remains the same (given that the child's experience of the world remains the same and the model does not become updated in new ways (Bretherton, 1985; Main, 1991; Main, Kaplan, & Cassidy, 1985)). The model continues to allow or limit access to knowledge about the self, the environment, the attachment figure and relationships. The pattern of permitting or disallowing access to this knowledge is predictable based upon the individual's experience in relationships.

III. Adulthood: Mental Models of Attachment and Language

When images make up the basic component unit of the mental model, as during infancy, the best measure of the model is
observation of behavior. Once symbols become the basic unit of construction of the mental model, the best way to gain access to the model is by looking at the organization of those symbols. Consequently, observing language and patterns of discourse in adults when they speak about relationships becomes a way to understand the structure of the mental model.

The Adult Attachment Interview (AAI: George, Kaplan, & Main, 1985) was developed to assess patterns of discourse when talking about attachment relationships in order to gather information about the organization of mental models of attachment in adults. The AAI is a semi-structured interview that asks individuals to talk about their early attachment experiences and the effects of those experiences on their adult behavior. Based on the way in which they talk about these topics, individuals are classified into groups according to their state of mind with respect to attachment.

Interviews with individuals who are classified as secure/autonomous with respect to attachment are distinguished by their coherence. These individuals have easy access to their memories of childhood, they are comfortable talking about their early relationships, and the coder of the transcript is likely to agree with them about their assessment of their childhood relationships and their state of mind with respect to them now. These subjects do not always report happy childhoods, but they can discuss and describe their childhood relationships with their attachment figures and the effects of those relationships on
themselves in a complete, convincing and non-contradictory way. There is nothing in their pattern of discourse to suggest that there are limits on their access to information about their attachment relationships. In effect, there seems to be nothing that these individual's cannot think about. The effect of this freedom of attention to attachment issues is that the individual gives the impression of cooperating with the interview, easily talking about their relationship history when the interviewer expresses a wish to explore it with them.

Individuals classified as non-autonomous with respect to attachment have difficulty talking about attachment related information in predictable ways (Main & Goldwyn, 1984). Adults classified as dismissing of attachment often have difficulty bringing to mind memories of their attachment relationships in childhood. They may tend to idealize their relationships with their parents, by describing them in very positive terms but then be unable to support those very positive descriptions with actual memories of positive events. Or, they may express scorn either for their parents or their relationship with their parents. Both strategies serve to keep the feelings associated with early attachment relationships at a distance. These adults demonstrate limited access to personal information about their experiences in childhood, especially the emotional component of those relationships. If these adults admit negative aspects to the relationship, they are unlikely to feel that those negative aspects had any effect on their own development. It is not
uncommon for these individuals to describe their relationships with attachment figures as normal and to indicate that they feel that in those relationships everything was just fine.

When interviewing these individuals, the interviewer often has the impression that they are obstructing the interview. Dismissing adults are not interested in closely examining their early attachment experiences (or, in fact, are not able to do so) and the interviewer may feel pushed away from these topics. This behavior in the interview is analogous to the behavior of avoidant infants who focus their attention away from their mother and may in fact reject her overtures during reunions in the Strange Situation. In effect, these adults behave interpersonally during the interview in a way that illustrates how they process information about relationships: they characterize the relationship information in a generally positive way, but they focus attention away from relationship topics and keep their distance.

There are three interesting features of this organization of the mental model. First, the model clearly limits access to knowledge of the feelings associated with the relationships and often even to actual memories of the relationships. Second, the model limits the individual's mental flexibility. Dismissing adults cannot ever closely evaluate their memories of experiences in attachment relationships because those memories would be unlikely to support their perceptions of the relationship as a whole as contained in the mental model.
The model itself is likely to be ontogenetically adaptive. Mary Main (personal communication, 1993) has proposed that once children have achieved the level of representation, they must pretend that the adult would be ideally responsive should a crisis occur because recognizing that the adult would not be available would leave them too vulnerable and unprotected. Therefore the mental model serves the function of providing the child/adult with the psychological feeling of safety in the absence of responsiveness on the part of the caregiver. So, when faced with a contradiction between experience and representation the individual chooses to ignore the experience rather than question the model. Thus, these individuals are unlikely to recognize that there is a contradiction between the memories of their experience and their representation of it. While individuals thus obtain a feeling of safety the price is the loss of mental flexibility and the loss of the ability to think about the personal and emotional aspects of their relationship experiences.

A third interesting aspect of the mental model of Dismissing adults is related to findings by Dozier and Kobak (1992) that these individuals, like avoidant children, display high levels of physiological arousal when asked to talk about their attachment experiences. While physiological indicators suggest that these individuals experience stress and anxiety at talking about attachment related experiences they characteristically insist that their attachment experiences are not a source of concern to
them. This result suggests that these adults have learned to tune out their subjective experience of distress. While they have been shown to experience sensory arousal they have no mental representation of it and therefore report no awareness of the distress. As Johnson-Laird (1983) has suggested, their understanding of the world and their experience of it is limited by the model that they have constructed.

Adults classified as preoccupied with or by early attachments or past experiences have difficulty organizing their responses to the adult attachment interview coherently. Their speech is often tangential and responses may be unrelated to the question. They may move back and forth frequently in their evaluation of the effect of an experience on themselves, never seeming to settle on one perspective and stick with it. Their responses are often confusing both in content and in the way the responses are constructed, perhaps containing run-on sentences, unintroduced quotes, nonsense words, or frequent references and generalizations that are unclear (such as, "that sort of thing" when the reader cannot easily tell what sort of thing). Access to information about early attachment experiences is limited by the individual's disorganization when thinking about those experiences. What is striking about this organization of the mental model is that the disorganization prevents the individual from ever moving beyond the personal or emotional aspects of the relationship. This is evident interpersonally as well as the
interviewer has great difficulty keeping the adult focused on the interview questions.

The distributed model of memory (McClelland & Rumelhart, 1985) may best describe the mechanism by which incoherence can result when individuals talk about their attachment relationships. As stated above, the distributed model proposes that images (or symbols) of experience are superimposed upon each other. These images are made up of many component units of the original experience. Mental state is actually the pattern of connection or activation over some subset of the units. Individual experiences make and strengthen the connections between component units of the model. So, when asked to talk about their attachment experiences, individuals who had been responded to inconsistently by their parents would activate mental patterns of both neglect and responsiveness, and they would consequently communicate these contradictions about their experience without being able to resolve them since neglect and responsiveness are linked in their mental model of experience. Dismissing individuals would be able to label, but not support their report of attachment experiences, because of the pattern of activation which includes positive representation of the experience but excludes affective components.

Longitudinal studies have not yet been done that link individuals' attachment classification in infancy with their state of mind with respect to attachment as measured by the AAI in adulthood, and therefore the same kind of evidence is not yet
available for continuity of organization of mental models that is
available for children from infancy through early childhood.
However, there is strong evidence for intergenerational
transmission of mental models of relationships. Researchers have
consistently reported a concordance between 75% and 82% between
adults' patterns of discourse when discussing their attachment
histories and the Strange Situation classifications of their
children when using a secure/non-secure distinction (Grossman,
Fremmer-Bombik, Rudolph, & Grossman, 1988, 77%; Ainsworth &
Eichberg, 1991, 80%; Fonagy, Steele, Steele, 1991, 75%; Ward,
Carlson, Altman, Levine, Greenberg & Kessler, 1990, 82%).

Concurrent validity of these findings has also been
demonstrated by Crowell and Feldman (1988) who observed
interaction between mothers and children in a tool-using task to
test the assumption that the behavior of an infant in the Strange
Situation is related to the interaction between the mother and
child. Their obtained results support the assumption that
mothers' mental representations of their early experiences are
reflected in the quality of care they provide for their children.
Mothers classified as autonomous were supportive of the child;
mothers classified as dismissing were distant and task focused
during the interaction; preoccupied mothers were unpredictable in
responsiveness to the child and their instructions were often
unclear or confusing.

Clearly, mental models of relationships affect not only the
way in which adults talk about their relationships with their own
attachment figures but also the way in which they behave toward their children. Main and colleagues (1985) have proposed that parents' responsiveness to their child may stem from the parents' needs to preserve a particular organization of information or state of mind.

"Attachment-relevant signals originating externally from the infant and internally from memory may be similar in the "rules" they evoke for parents who are insecure in terms of their own mental models of attachment. The need to restrict or reorganize attachment-relevant information, whether it originates internally or externally, may result in an inability to perceive and interpret the attachment signals of the infant accurately and, in some cases, in an active need either to alter infant signals or to inhibit them."
(Main, Kaplan, & Cassidy, 1985, p.100)

Thus, the organizational structure of the relationship is manifest both in the way that the parent thinks about relationships and behaves toward the child. It would appear that the parent's mental model with respect to attachment provides the mechanism for Fraiberg, Adelson, and Shapiro's (1975) "ghost in the nursery."

Bowlby proposed that there existed a complementary system to the attachment system which he called the caregiving system. The caregiving behavioral system is composed of the constellation of behaviors in adults that allow them to be available and responsive to the infant and to engage in protective behavior
whenever the infant is potentially at risk for harm. As mentioned in a previous section, Sroufe and Fleeson (1986) used observations of the intergenerational transmission of mental models of relationships to propose that children internalize both parts of relationships into their mental model. They suggest that children unconsciously learn to behave in relationships in the same way that their parents behaved toward them. The mental model which directs the behavior of the attachment system and allows or disallows certain knowledge about attachment relationships also directs the actions of the caregiving system.

In summary, the theoretical model that proposes that relationship patterns are represented internally in terms of mental models and that those models determine behavior, thought, and knowledge of the self and the world has been strongly supported by attachment researchers. In infancy, those models are best understood by observation of infant behavior and, as children grow older, the models become increasingly evident in an individual's patterns of thought and discourse. These models may develop in ways that allow different but predictable patterns of behavior based upon adaptation to less than optimal environmental contexts if necessary. This feature of mental models results in flexibility that facilitates the continuation of the species. However when the model is required to adapt to constraints in the environment the individual loses flexibility of behavior and thinking.
Trauma and Mental Models

I. Loss

As previously stated, mental models, once constructed, are stable and resistant to change. Individuals continue to relate to their attachment figures, and to seek proximity to them in the characteristic ways prescribed by their mental models, throughout the life span. Loss of an attachment figure thus requires that mental models become reorganized to reflect the loss. Such reorganization of mental models is a slow process, however. Bowlby (1980) contends that grief serves the biological function of attempting to regain proximity to the lost attachment figure, and that grief remains until the mental model has been reorganized to reflect the reality that the attachment figure is gone forever.

Because mental models are composed of both the individual's perception of the self and of the attachment figure, resolution of loss requires that an individual redefine the self in the context of having lost the attachment figure. This redefinition of the self is accomplished by confronting the loss, experiencing the feelings connected to the loss, and then reshaping the mental model of relationships to conform to the new reality that the attachment figure is gone. Bowlby (1980) has defined healthy mourning in the following way: "The successful effort of an individual to accept both that a change has occurred in his external world and that he is required to make corresponding changes in his internal, representational world and to
reorganize, and perhaps to reorient, his attachment behavior accordingly* (Main and Hesse, 1990, p.168). The bereaved individual must go through both the affective and the cognitive processes in order to effectively resolve the loss of an attachment figure.

Successful resolution of grief, then, depends upon the individual being able to access all feelings and all aspects of experience of self, other, and the relationship between self and other. It is only with this kind of mental and emotional flexibility that the reorganization of the mental model necessary for Bowlby's healthy mourning can occur. Main (personal communication, 1993) has suggested that trauma is likely to be more disruptive to insecure children and adults because there are limits to what they can think about and process.

Parkes (1985) has identified risk factors that identify individuals likely to be at risk for poor outcomes when faced with bereavement. Of the eight characteristics of individuals at risk that he delineates, six correspond to qualities characteristic of individuals with insecure attachment: 'grief-prone personality (expressed in intense clinging and pining); insecure, over-anxious (with low self esteem); excessively angry; excessively self-reproachful; previous unresolved losses; inability to express feelings (particularly with strong 'maso' self-image prohibiting expression of grief)' (Parkes, 1985, p.14). These risk factors for inability to resolve a loss described by Parkes are strikingly similar to characteristics of
individuals with mental models of the attachment relationship that limit access to certain information and feelings.

Information about an individual's lack of resolution with respect to loss or trauma to the attachment system is also contained in the AAI. Adults classified as unresolved with respect to loss or trauma respond to the interview in ways that suggest that their perception of reality is distorted. These individuals may talk in the present tense about people who have died, as if they were still alive, or may talk about reasons for traumatic attachment related events (such as loss, or abuse of the individual by a parent) or repercussions of those events in a way that may cause coders to question the ability of the person being interviewed to think clearly about these losses or traumas. In effect, the individual's ability to monitor patterns of discourse when talking about these traumatic events to the attachment system is impaired. The trauma associated with the attachment figure remains unresolved and makes contemplation of the attachment relationship inherently disorganizing (Main & Hesse, 1990).

Main (in press) proposes that individuals who demonstrate lack of resolution with respect to attachment have not been able to integrate the reality of their experience into their mental model of the relationship. The limitations on attention within the attachment relationship that are prescribed by the mental model make these experiences inaccessible to executive mental functions such as attention, memory, logic and reasoning. The
experience then is dissociated from the model, not integrated into it.

This disorganization surrounding aspects of the attachment relationship can also be transmitted from parent to child, even if the child has not personally sustained a trauma to the attachment system (Main & Hesse, 1990). A disorganized pattern of insecurity of attachment was recently proposed by Main and Solomon (1990) to explain the contradictory behaviors exhibited by some children in the Strange Situation. Children who display these behaviors have been shown to have parents with an unresolved loss in their history in low risk samples, and, in high risk samples, parents who abuse them (Main & Solomon, 1990).

What is similar about these two disparate groups is the fact that there is some behavior on the part of the parent that frightens the child. Main and Hesse (1990) have proposed that a child may be frightened of a parent because the relationship is physically unsafe (as for example in the case of abuse) or, alternatively, because there is something about the relationship with the child that frightens the parent, which in turn frightens the child and makes the relationship psychologically unsafe. For example, the parent is frightened of aggression as the result of childhood trauma and so any aggressive act on the part of the child causes a fear reaction in the parent which frightens the child, or the parent is frightened of intimacy as the result of a loss and therefore reacts with fear to a child's bids for intimacy.
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The child is therefore faced with a dilemma. The caregiver, to whom the child turns for protection when threatened, is also the source of a physically or psychologically threatening behavior. As a consequence, the child's behavior on reunion with the parent may be characterized by disorganization, temporary immobility, or the display of contradictory behavior patterns. The child experiences simultaneous contradictory impulses which cannot be integrated by the mental model. The experiences thus exist separately and simultaneously within the mental model. The child pays conscious attention only to those aspects of experience which maximize feelings of safety and therefore the traumatic experiences become unavailable to executive cognitive functions which might be able to integrate them.

Loss of an attachment figure, then, requires the reorganization of the mental model of relationships to reflect the reality that the attachment figure is gone. This reorganization is a slow process and can only be accomplished successfully if individuals go through the laborious process akin to that which was necessary to create the mental models in the first place. This process involves experiencing the feelings around the loss and restructuring one's representation of the world based upon the experience that comes from feeling those feelings. This cognitive reshaping of the mental model based on affective experience can only occur if the experiences are accessible to the executive mental functions. When the mental models themselves permit the individual limited access to
feelings about relationships or when they are focused on the experience of feelings to the extent that an individual is unable to cognitively redefine experience the models become less accessible to the reshaping necessary to achieve healthy mourning.

II. Reaction to Diagnosis of Disability in a Child

Having a child diagnosed with a disability is experienced by parents as a trauma which results in grief experiences that are similar to those experience by people mourning someone who has died (Blacher, 1984, Burden & Thomas, 1986). Pianta, Marvin, Britner, and Borowitz (submitted), in talking with parents about their experience of a diagnosis in their child confirm that parents experience this event as a crisis. In fact, there are special circumstances surrounding the diagnosis of chronic illness or a handicapping condition in a child that make it hard to imagine that complete resolution, in the sense of moving past the point of ever feeling sorrow, would occur for parents.

First, while the parent is likely grieving the loss of the healthy child that they had expected, they are continuously confronted with the disabled child who likely needs a great deal of attention (Davis, 1987). Second, the loss that parents feel at the time of a diagnosis is often loss not only of the healthy child, but also the loss of a way of life (Schwartzberg, 1992). This is an abiding condition, and may lead to anger and perhaps guilt about that anger. It may also require parents to reevaluate the course of their own future and cause grief related
to the change this loss represents for their future as well as for the child's. Third, researchers have discovered that parents reexperience the grief and fear related to the child's medical condition as the child encounters stressors or reaches the age at which other children are achieving developmental milestones (Fraley, 1986; Wikler, Wasow, & Hatfield, 1981). The common feature of these three characteristics of the loss and grief related to receiving a diagnosis of one's child is that this loss is not a single, one-time event, but must be dealt with by the parent over and over again.

Olshansky (1962) coined the term "chronic sorrow" to describe the ongoing grief process he observed in parents of mentally retarded children. He proposed that chronic sorrow was a natural state brought about by being faced on a day to day basis with the "loss of the perfect child". All parents must adjust to the realities of having a child which are likely to be different from their fantasies and expectations, and in this sense, every parent experiences the loss of the "perfect child" (Joseph Allen, personal communication, 1994). However this reconciliation of reality with expectations is even more dramatic for parents of handicapped children. According to Olshansky, it was unreasonable to assume that this loss could ever be resolved and therefore the best that clinicians could hope to do was to help parents cope with this grief. This conceptualization of the grief process in parents of handicapped children presumes that it is never possible to reorganize one's mental model in a way that
completely resolves the grief associated with having a handicapped child. If grief serves the biological function of seeking proximity to the lost person, as Bowlby proposes, then parents will never be able to stop seeking the child they 'lost' when their child was diagnosed with a chronic illness or handicapping condition.

 Nonetheless, some parents demonstrate the ability to successfully resolve a diagnosis of a handicapping condition in their child (Marvin & Pianta, submitted). While they may continue at times to feel sorrow, this sorrow does not interfere with the ability of the parent to move past the trauma and to parent the child effectively. What is it that distinguishes parents who are able to move past the trauma of a diagnosis of their child from those who are not? Attachment theory suggests that the diagnosis of a handicapping condition in one's child is information that, like loss, requires reorganization of the mental model of relationships. Successful reorganization of the mental model is indicated when parents demonstrate that they are oriented toward the present and the future in their relationship with their child rather than being caught in the past.

 As previously suggested, effective reorganization of the mental model can only occur when individuals are able to both freely experience feelings surrounding the event and to undergo the process of cognitively restructuring the mental model of relationships to reflect the reality of the relationship. In the case of a disability in one's child, this restructuring needs to
take into account new expectations for the child that realistically consider the child's condition and new understandings of what it will mean to be the parent of this child. Pianta and colleagues (submitted) propose that parents must also come to terms both with the fact that their evolutionary caregiving role as protector of the child is directly challenged by this kind of crisis (since parents have not been able to protect the child from this trauma) and at the same time their current role as caregiver to the child and perhaps their future role as well must be revised to meet caregiving demands above and beyond those placed on parents of normal children.

Pianta and Marvin (submitted) have developed the Reaction to Diagnosis Interview (RDI), to assess the extent to which parents have been able to resolve the loss and the grief associated with hearing the news of their child's diagnosis. Parents are asked about when they first heard the diagnosis, what their feelings were at the time, whether their feelings have changed over time, and how they make sense of the fact that they have a handicapped or chronically ill child. Based on their responses to these questions, parents are classified as resolved or unresolved with respect to their child's diagnosis. Parents who are resolved speak coherently and clearly about the experience of the diagnosis. They talk about a change in their feelings since the time of the diagnosis, report that they have moved past the initial mourning and crisis, accurately represent the child's
mental model, these parents attempt to ignore the experience or shape it to fit the model rather than update the model to accommodate the experience.

Marvin and Pianta (submitted) have demonstrated that there is a relation between the ability of the parent to resolve a diagnosis and the security of the mother-child attachment as measured in the Strange Situation. This is notable, but not surprising given the established relationship between a parent's state of mind with respect to attachment as measured in the AAI and the quality of attachment behavior observed in the child during the Strange Situation. As with the concordance between AAI and Strange Situation classification, the relation between a parent's reaction to diagnosis and Strange Situation classification of the child is likely related to the parent's need to maintain a characteristic pattern of mental organization. The dismissing parent needs to defensively exclude information, from both the self and the child, that might challenge that organization, while the preoccupied parent is only able to see beyond that organization when cues from the child exceed a certain threshold. The parent who is unresolved with respect to a child's diagnosis would need to preserve and image of the child as healthy. Consequently, the parent is unable to respond sensitively and reliably to the signals of the child and the child's quality of attachment is affected.
Current study

This study proposes to look at a mother's state of mind with respect to attachment, her reaction to her child's diagnosis, and attachment classification of the child to understand how they are interrelated within an individual's mental model of relationships. As stated above, previous research has established that a mother's state of mind with respect to attachment predicts her child's behavior in the Strange Situation (Van IJzendoorn, 1992), and also that a mother's ability to resolve a diagnosis of cerebral palsy is related to the child's behavior in the Strange Situation (Marvin & Pianta, submitted). The question this study proposes to explore is how state of mind with respect to attachment is related to a mother's ability to resolve a diagnosis of her child.

While there is theoretical support for assuming that this is a predictive model (i.e., that adult state of mind with respect to attachment predicts reaction to diagnosis and child security of attachment) and causal studies provide the rationale for selection of these research instruments, this study is not predictive in nature. All data was gathered concurrently, and therefore conclusions related to prediction cannot be gathered from this data. What this study hopes to do is to shed light on crucial components of mental experience that can help us to better understand the pattern of attachment relationships in families of children with special needs.
While, from an ontogenetic perspective, insecure patterns of attachment may be thought of as adaptive, this study predicts that the differing qualities of attachment will be associated with different patterns in individual functioning when faced with the external stressor of diagnosis of chronic illness or disability in one's child and that all of those patterns are not equally advantageous for the functioning of the individual. Mothers who are classified as secure with respect to their own attachment experiences in childhood will be likely to demonstrate that they have been able to resolve the grief that results when a child is given a diagnosis and the children of these mothers are likely to be demonstrate secure attachment behavior in the Strange Situation. Mothers who are classified as insecure with respect to attachment are likely to have had difficulty resolving the grief that accompanies diagnosis of their child and their children are likely to demonstrate insecure patterns of behavior in the Strange Situation.

This study, then, proposes to address the following research goals:

1) To understand more clearly the mental model of relationships in parents of children with chronic illness or handicapping conditions and its relation to child attachment behavior. This goal will be addressed by examining the relation between Adult Attachment Interview (AAI) classification and Reaction to Diagnosis Interview (RDI) classification, the relation between AAI classification and
Strange Situation classification, and the relation between RDI classification and Strange Situation classification for the mother-child dyads in this sample. Finally analyses will be conducted to determine if taking both AAI classification and RDI classification into account can lead to an understanding of Strange Situation classification that is greater than either can provide alone.

2) To provide further construct validation of the RDI by
   a) establishing its relation to the AAI, and
   b) exploring differences between groups classified as resolved or unresolved on the RDI on the AAI experience scales. These scales are based on the report of an individual's experiences of parents as loving, rejecting, neglecting, role-reversing or pressuring for achievement during childhood. If responses to the RDI are related, as proposed, to an individual's mental model of relationships, then analyses should support that is it not a parent's representation of experiences in childhood but state of mind with respect to attachment (or the way in which an individual structures and organizes those experiences) that predicts RDI classification.

3) To explore how a diagnosis of epilepsy, a chronic illness, is related to the parent's resolution of diagnosis as observed on the RDI, and to compare the results with those already obtained on parents of children with cerebral
palsy, a handicapping condition (Marvin & Pianta, submitted).

4) To compare the observed distributions of attachment classifications found in this study of special populations with distributions found in previous studies.

Method

SAMPLE

This study was conducted as part of a larger project studying attachment relationships and interpersonal functioning in families with children with special needs. Families were recruited from clinics at university medical centers, community hospitals, private medical neurology practices, parent support groups for children with special needs, and early intervention programs in Virginia, West Virginia, North Carolina, Maryland and Washington D.C. The sample used for this study consists of a subsample of 68 mother-child dyads drawn from that larger project.

Thirty-eight of the children have been diagnosed with cerebral palsy, however they were chosen because their condition does not prevent them from being functionally locomotor; they are able to move well enough to follow their caregiver around the house by walking, crawling, rolling or scooting. The child's level of motor ability was chosen as a criterion for inclusion in this study because of the importance of motor activity to the successful deactivation of the attachment system in children who do not have handicapping conditions. The remaining thirty
children have been diagnosed with epilepsy. None of the children with epilepsy have a motor impairment. Children represented in the sample have been diagnosed with a variety of seizure activity, including absence, generalized, and partial complex seizures. Seizure control as reported by the parents ranged from mild to moderate. As conditions for inclusion, all children were diagnosed with either cerebral palsy or epilepsy at least 12 months prior to data collection and all of the children were between the ages of one and four years old.

The sample consists of 62 white, 5 African American, and 1 Hispanic family with children aged 14 months to 54 months (mean of 35.3 months). For all the children in the epilepsy group, the biological mother was the primary caregiver. For children in the CP group, the primary caregiver was biological mother (N=31), adoptive mother (N=4), biological grandmother (N=2), or biological father (N=1). Mean age of mothers was 30.4 years. Mothers averaged 13.5 years of education. Annual gross family income averaged $40,063, with a median of $32,616. The two groups were similar on most demographic characteristics. Table 1 presents the demographics on these families separately for the CP and epilepsy groups.

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Insert Table 1 about here.

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Though families were matched across most variables differences exist which reflect disparities in the nature of
these childhood disabilities. Prevalence rates of CP are approximately 1-2 per 1000 births for full-term infants and 5-6 per 1000 births for low birth weight infants (Roussounis, Hubley, & Dear, 1993). Epilepsy is unrelated to birth weight. Children in the epilepsy sample averaged gestational age of 40 weeks, while children in the CP sample had a mean gestation age of 33.4 weeks ($t_{158}=-5.65, p<.001$). CP is more common in poorer and more rural populations and this difference too is reflected in this sample. The mean income for epilepsy families is $19,555 greater per year than that for CP families ($t_{144}=-2.04, p=.046$). CP families in this sample were more likely to identify the area they lived in as rural while epilepsy families were more likely to identify the location of their home as suburban ($r^2_{31,4}=8.518, p=.014$).

Finally, there was a statistical difference in time since diagnosis between the two groups ($t_{144}=3.13, p=.003$). Mothers of epilepsy children reported an average of 16.5 months from the date of diagnosis to the date of data collection and mothers of CP children reporting an average of 25.1 months since the diagnosis. There was no statistical difference between the two groups in mean child age ($t_{144}=1.46, p=.149$), which indicates that children in this sample with CP were likely to be identified and diagnosed earlier than children with epilepsy.

MEASURES AND PROCEDURES

Families were videotaped in the laboratory engaging in a variety of interviews and observational procedures, children were
administered standardized developmental assessments and parents were asked to take home and complete several self-report questionnaires. The Strange Situation was the first procedure administered during the day and, following the developmental assessment of the child, parents were administered the Reaction to Diagnosis interview and an abbreviated version of the Adult Attachment Interview as part of a series of interviews.

**Reaction to Diagnosis Interview.**

The Reaction to Diagnosis Interview (RDI: Pianta & Marvin, 1992) was developed based upon the Adult Attachment Interview (George, Kaplan & Main, 1985) and the Parent Development Interview (Aber, Slade, Berger, Bresgi & Kaplan, 1985) to assess the effects of loss or trauma associated with receiving a diagnosis of the child on the parent's representational model of caregiving. Parents were asked in the course of this interview to talk about their thoughts and feelings related to the experience of hearing that their child had been diagnosed with a medical condition, the extent to which they feel that those thoughts and feelings have changed over time, and their own personal beliefs, if any, as to why they have a child with special needs. The full reaction to diagnosis interview is presented in Table 2. All interviews were administered by an

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Insert Table 2 about here.
interviewer trained in standardized administration and all interviews were videotaped.

**Reaction to Diagnosis Classification System**

Coders viewed videotapes of the 15 minute Reaction to Diagnosis Interview, took comprehensive notes, and classified mothers as resolved (R) or unresolved (U) with respect to their child's diagnosis based upon verbal responses and nonverbal cues during the interview. Most interviews contained elements of both resolution and lack of resolution. Coders based their decision about a mother's classification as resolved or unresolved on their assessment of which elements most clearly identified the underlying organizational pattern of her responses. Once this decision had been made, coders watched the interview a final time and decided upon a subclassification within the resolved or unresolved category that best described the mother's mental organization with respect to the diagnosis of her child.

A classification of resolved was merited when the organization of a mother's responses to the interview was characterized by one or more of the following elements of resolution: recognition of a change in feelings since the diagnosis, emphasis on the present and the future rather than the past, termination of the search for a reason for the child's condition, representation of the child's abilities in an accurate and realistic way, admission of the impact of the diagnosis upon the self, and coherence and clarity when talking about the personal distress or difficulty that the diagnosis had caused the
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parent herself. Based on the most prominent strategy used to integrate her experience of receiving the diagnosis into her mental model of the relationship with the child, a resolved mother was assigned to one of the three following subclassifications:

1) Feeling Oriented. These individuals focus on their feelings surrounding the traumatic event of the diagnosis and indicate that expressing and coming to terms with their feelings was an important aspect of learning to cope with the diagnosis.

2) Action Oriented. These individuals cope with the difficulty surrounding the diagnosis of their child by concentrating on what they need to do to take care of the child.

3) Thinking Oriented. These individuals use cognitive strategies to help them cope with having received the diagnosis and are likely to talk about the beliefs or philosophies that help them to integrate the experience of the diagnosis into their mental model of their relationship with the child.

The interviews of mothers classified as unresolved contain the following elements of lack of resolution: distortions in thinking about the child's condition and prognosis or about the process of receiving the diagnosis, evidence that the parent is still actively searching for a reason why the child has special needs, evidence of emotional entanglement in the process (e.g.,
the parent is still very angry or very sad), apparent confusion while speaking of the process of the diagnosis, reported lack of memory or feelings surrounding the diagnosis, and disavowal of impact of the diagnosis upon the self. There are six subcategories within the unresolved classification that identify distinctive patterns of mental disorganization:

1) Emotionally Overwhelmed. These parents often become upset during the interview and are clearly still experiencing the process of the diagnosis as an active emotional crisis. It may feel to the coder as if they are attempting to elicit comfort and sympathy.

2) Angrily Preoccupied. Anger is a prominent theme of these interviews and may be directed at many targets, including the doctors who treated the child, the interview, the diagnosis, or other people who treat the child in a way the parent does not like. These parents often attempt to enlist the interviewer to see things from their point of view. Their tone of voice may be plaintive, sarcastic, or simply angry.

3) Neutralizing. These parents either cannot remember events surrounding the diagnosis or they seem to have no personal emotional reaction to them at all.

4) Depressed/Passively Resigned. These parents appear depressed and hopeless. Their speech is flat, their manner is listless and their responses are minimal. They are seemingly powerless against the extreme sadness they feel
and unable to cope with the difficulty of caring for the needs of their child.

5) Distorting. These parents focus on a single aspect of their experience with the child and use it to represent the whole of that experience. It is likely intolerable for them to deal with aspects of their relationship with the child or of the child himself that might challenge their perception of the situation and therefore their chosen way of coping. One distorting mother spoke of her child as a "miracle," and could acknowledge no negative aspects to the child. Another was convinced her child was a juvenile delinquent (at age 3) and could see no qualities in him or his behavior.

6) Confused. The interviews of these parents are incoherent. They may make little sense or require much interpretation on the part of the coder. In addition, these parents may ramble off onto tangents, or present unresolved contradictions.

At the major category level, across all 68 cases, there were 84 opportunities for agreement (because several interviews were coded by more than one pair of coders) and 80 agreements, for a rate of 95% agreement. Within the CP group there were 55 opportunities for agreement and 53 agreements, for a rate of 96% agreement. Within the epilepsy group, there were 29 opportunities for agreement and 27 agreements, a rate of 93% agreement. All levels of agreement were tested against chance agreement using a Chi-square test and exceeded levels of
agreement expected by chance at the $p < .05$ level. At the subcategory level across both diagnostic groups there were 67 opportunities for agreement and 59 agreements, a rate of 88% agreement. Within the CP group, there were 38 opportunities for agreement and 32 agreements, for a rate of 84% agreement. Within the epilepsy group, there were 29 opportunities for agreement at the subcategory level and 27 agreements, a rate of 93% agreement. The rates of agreement did not differ across diagnostic group at the subcategory level.

In a recent study by Marvin and Pianta (submitted) which used the same data set as this sample, the relation between classification of parents as resolved/unresolved and classification of their child in the Strange Situation as secure/insecure was 81%.

**Adult Attachment Interview**

The Adult Attachment Interview (AAI: George, Kaplan & Main, 1985) is a semi-structured interview that lasts about an hour. It is designed to elicit an individual's current thoughts and feelings about his or her childhood experiences and relationships with parents. A coder rates an individual's pattern of discourse across the interview rather than looking specifically at responses to individual questions. The interview itself was developed prior to the coding system, and therefore there are questions on the AAI that provide redundant information when coding an interview. Consequently, the interview was mildly abbreviated for this study and redundant questions were omitted.
because parents had already responded to a quite lengthy series of interviews during this day of data collection. In the judgement of the coders, the abbreviation of the interview had no effect on their ability to identify patterns of discourse or to accurately classify individuals regarding their state of mind with respect to attachment. The text of the abbreviated Adult Attachment Interview and a notation of the questions that were omitted is presented in Table 3.

During this interview, parents were asked to talk about their early childhood relationships with their own parents, to choose three words that describe those relationships and then support them with memories from childhood. They were also asked how they behaved as a child when upset, physically ill, or hurt, whether or not parents were ever threatening and if they ever felt rejected. Mothers were also asked for their perspective on their childhood experiences, if they understand why their parents behaved the way they did during their childhood and what they think the effect of their childhood experiences has been on their adult personalities. Finally, mothers were asked to talk about losses in their lives, how they experienced those losses at the time, whether their feelings have changed over time and what effect, if any, the loss has had on their adult personality or their approach to their children.
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All interviews were administered individually to parents by an interviewer trained in standardized administration and all interviews were videotaped, transferred to audiotape and transcribed from audiotape. The interviews lasted about an hour and were transcribed verbatim by four typists on the basis of transcribing guidelines provided by Mary Main (unpublished manuscript, July 1991). All interview transcripts were then proofread while watching the videotape to catch any errors or omissions in transcription.

AAI Coding System

AAIs are transcribed verbatim. Coders then rate the interview on two groups of nine-point rating scales. The first group of scales can be thought of as content focused. The coder uses information from the transcript to evaluate the quality of the individual's childhood experiences with each parent, and then rates each parent along the dimensions of loving, rejecting, involving/role-reversing, pressuring the child to achieve, and neglecting.

The second group of scales rates the individual's state of mind with respect to attachment. When coding these scales, the coder pays less attention to the content of the individual's interview, than to the coherency and structure of an individual's linguistic patterns when talking about these relationships. Individuals with highly coherent interviews speak clearly, present no unresolved contradictions and respond with information that is relevant to the question that is asked. Individuals may
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demonstrate incoherency in several ways: they may present very positive adjectives to describe their early relationships with their parents but then be unable to provide memories that support those very positive impressions; they may have little recollection of childhood at all; they may be unable to speak clearly and relevantly about their childhood experience but get carried away by their story because they still appear to be involved in some sort of emotional turmoil about their childhood relationships with their parents; or their speech may be vague, incomplete, and circumstantial.

Finally, the coder must evaluate on the basis of the transcript whether or not an individual has experienced loss or trauma and, if so, if the individual appears to have resolved the experience of that loss or trauma. Coherency of speech when an individual speaks about loss or trauma is used to evaluate whether or not an individual is unresolved. In addition to the indications of incoherencies of language mentioned above, the content of the transcript of an individual who is unresolved with respect to loss or trauma may contain bizarre contradictions that indicate that there is some disorientation in the way the person thinks about this loss. For example, the individual may speak of someone who is dead in the present tense, indicating an unconscious sense of disbelief that the person is dead.

Based primarily on the ratings from the state of mind scales, individuals can be placed into one of four categories: unresolved (U), dismissing (D), preoccupied (E), or autonomous
(F). The experience scales, while not used to classify individuals into categories, often show characteristic patterns within categories. For example, individuals classified as dismissing are likely to have experienced rejection in childhood from one or both parents, and individuals classified as preoccupied are likely to have experienced a role-reversed relationship with one or both parents. There is however no characteristic pattern of experience scales for individuals classified as secure. Some secure individuals tell of very loving and supportive experiences in childhood, whereas others may have had experiences characterized by rejection, neglect, or role-reversal but they are able to speak of them with clarity and understanding. Whenever a transcript is given a primary classification of unresolved, it is also given a best-fitting forced classification of dismissing, preoccupied, or autonomous. Within each of these forced classifications, subclassifications can also be made.

In studies of test-retest reliability, the AAI and its coding system have found relative stability of attachment classification across short periods of time (78% over two months, Bakermans-Kranenburg & Van IJzendoorn, in press; 90% over three months, Sagi, Van IJzendoorn, Scharf, Koren-Karie, Joels, & Mayseless, 1993; 90% across 1½ years, Benoit & Parker, in press). It also has discriminant validity when compared to measures of social desirability, logical reasoning and verbal fluency, style of discussing non-attachment related topics, and ability to
remember childhood experiences not related to attachment (van IJzendoorn & Bakermans-Kranenburg, in press). Van IJzendoorn and Bakermans-Kranenburg (in press) report that in 28 studies, the AAI also has demonstrated predictive validity with respect to security of the parent-child relationship and the sensitivity of the parent to the child’s signals. Given the very minor changes in the abbreviated AAI to eliminate redundancy, these results are judged to be relevant to the instrument as it was used in this study.

The author was the primary coder for the AAIs. Twenty-one cases (30%) were chosen at random for double-coding by Robert C. Plantà to establish reliability. Percentage of agreement on 21 cases was 76% (Kappa was not able to be calculated because one coder rated no interviews as preoccupied resolved.) when interviews were classified into four categories (autonomous, dismissing, preoccupied and unresolved) and 91% (kappa .84) when classification was based on three categories (autonomous, dismissing, and preoccupied). Five of six disagreements were on the U versus non-U distinction. Therefore all interviews subsequently assigned a U classification by the primary coder were double-coded and conferenced. In addition, despite the fact that interviews had been randomized for anonymity there were occasions when the primary coder was not blind to the subject. Those interviews were double-coded and conferred as well. Sixteen interviews were coded by the primary coder alone. The primary coder agreed with the conferenced major classification in
85% (kappa .76) of the cases and with the conferenced U versus non-U classification in 92% (kappa .77) of cases.

The Strange Situation

Each mother-child dyad was videotaped in the Strange Situation (Ainsworth, Blehar, Waters & Wall, 1978). Videotapes were then classified by trained coders using the Ainsworth classification system for infants (Ainsworth, et al., 1978) and the preschool attachment classification system for older children (Cassidy & Marvin, 1992). The Strange Situation is a standardized laboratory procedure consisting of eight episodes that is used to activate attachment behavior and assess the attachment classification in infants and young children (see Table 4). Observations of child behavior during reunions with the caregiver after brief three minute separations are used to classify children as insecure-avoidant (A), securely attached (B), insecure-ambivalent (C), and insecure-disorganized (D). (In preschoolers, the "D" classification is given to children who demonstrate controlling behavior. Children who were classified as insecure-disorganized in infancy are likely to demonstrate

Insert Table 4 about here.

controlling behavior as preschoolers, perhaps because they have taken upon themselves the task of bringing order to the
interaction (Cassidy & Marvin, 1992). All children who are classified as insecure-disorganized or controlling are also given a best-fitting forced classification of avoidant, secure, or ambivalent. Within each of these groups, subclassifications can also be made.

Of specific interest in coding the Strange Situation for infants are their patterns of proximity seeking of the parent, maintenance of contact with the parent once achieved, resistance to contact with the parent, and avoidance of contact with the parent. Cassidy and Marvin (1992) have developed a system for coding the Strange Situation behavior of preschoolers that, in addition to modifying the categories of behavior above to be appropriate for preschoolers, also takes into account patterns of speech and displays of emotion between parent and child. Validity and reliability of the Strange Situation as a measure of attachment in young children has been well documented (Ainsworth, et al., 1978). Of the 38 CP Strange Situations, there was initial agreement on 34, for an agreement level of 87% ($\chi^2_{(3)}=41.6, p<.001$; kappa = .74). Of the 30 Epilepsy Strange Situations, 12 were classified using the infant system. Percent agreement was 83%. Robert S. Marvin, who co-developed the preschool classification system, coded the 18 preschool Strange Situations for epilepsy children.

**The Seizure Severity Scale**

The Seizure Severity Scale is a three part questionnaire designed to elicit parent's report of the description and
severity of a child's seizures as well as some information about the parent's previous exposure to people with seizures and seizure disorders. For the purposes of this study, only the 19-item section measuring severity of seizures was used. Parents rate their children on a 4-point scale, and indicate frequency of symptoms and behaviors associated with seizures (from "1" = always to "4" = never) and their assessment of the child's degree of control over his or her seizures. A total score was computed for each child. Higher scores indicated that, according to parents' report, children had more severe seizures and less control over them. The Seizure Severity Scale can be found in Table 5.

Data Set

Results of data collection, coding, and classification will make available the following variables for data analysis. This information is summarized in Table 6.

1) AAI classification of dismissing, preoccupied, or autonomous for the mother of each child in this study. In addition, some of the mothers will have been classified as
unresolved, with a forced classification of dismissing, preoccupied, or autonomous.

2) Scores from one to nine on each of the five experience scales of the AAI coding system for both of a mother's parents for each of the subjects in the sample. The five experience scales use information from the transcript to rate each of the interviewees parents along the dimensions of loving, rejecting, involving/role-reversing, pressuring the child to achieve, and neglecting.

3) Scores from one to nine on each of three state of mind scales of the AAI coding system for both of a mother's parents for each of the subjects in the sample. These three state of mind scales reflect an adult's way of speaking about each of their parents. These three state of mind scales are: idealizing of mother and father, derogating of mother and father, and involved in ongoing anger toward mother and father.

4) Scores from one to nine on each of the nine state of mind scales of the AAI coding system for each of the subjects in the sample. The nine state of mind scales are based on the rater's evaluation of the way adults talk about their childhood attachment experiences. The nine state of mind scales are: derogation of attachment, lack of memory for attachment related experiences in childhood, metacognitive monitoring of discourse, passivity of speech, fear of loss of the child, lack of resolution with respect to loss, lack of resolution with respect to trauma, coherence of speech, and coherence of mind.
5) Strange Situation classification of secure/insecure for each of the children in the sample. In addition, some of the children will have been classified as disorganized/disoriented or controlling, with a forced classification of secure or insecure.

6) Resolution of diagnosis classifications of resolved or unresolved for each of the mothers in the sample.

7) Resolution of diagnosis subclassifications within the resolved or unresolved groups for each of the mothers in the sample.

8) Scores on the Seizure Severity Scale for children in the epilepsy group.

Results

Preliminary Analyses

Obtained Distributions Compared with Reports in the Literature

Distributions of classifications of individuals in this sample on RDI and Strange Situation are consistent with those reported in the literature. Marvin and Pianta (in press) reported that 43% of mothers of children with CP were classified as Resolved on the RDI and that 57% were classified as Unresolved. Within the epilepsy sample, 50% of mothers were classified as Resolved, and 50% classified as Unresolved.

Insert Table 7 about here.
Distributions of classifications on all three measures for the whole sample and for the CP and epilepsy subsamples are summarized in Table 7.

Van Ijzendoorn, et al, (1992) reported in their meta-analysis of attachment classification in high risk samples that, when disorganized attachment was not included, rates of security (B) were between 49% and 67%, rates of avoidant/anxious (A) attachment were between 21% and 27% and rates of anxious resistant (C) attachment were between 12% and 24%. When the disorganized (D) attachment classification was used rates of secure attachment were between 9% and 61%, rates of avoidant attachment were between 8% and 33%, rates of resistant attachment were 2% to 11% and rates of disorganized attachment were 15% to 53%. Strange situation classifications in this sample fell within these ranges.

The distribution of AAI classification is consistent with that reported in the literature for normal samples when individuals classified as unresolved are not taken separately into account. However, this sample has twice as many individuals classified as unresolved on the AAI as found in normal samples. Nevertheless, the obtained percentage of unresolved individuals on the AAI in this sample falls within the range of A, B, C, D Strange Situation distributions reported in the literature on high risk families and is consistent with the percentage of Disorganized children observed in this high risk sample.
Independence from Demographic Variables

Prior to examining associations between the primary variables of interest (Reaction to Diagnosis Classification, AAI Classification and Strange Situation Classification) and group differences, the relation between the primary variables and demographic variables was tested for independence using Chi-square and ANOVA. Reaction to Diagnosis classification (Table 8), AAI classification (Table 9), and Strange Situation classification (Table 10) were independent of group, child age, child gender, child cognitive level, age of mother, education of mother, family income, number of child hospitalizations, time since diagnosis and whether or not the child attended daycare, except in the following three cases.

Insert Tables 8, 9, and 10 about here.

1) In the Strange Situation non-secure girls were more likely to be classified as insecure, while non-secure boys were more likely to be classified as disorganized ($\chi^2=16.480, p<.001$). The distribution of secure boys and girls was roughly equivalent. This pattern held across both CP and epilepsy groups. Because of the potential contribution of child sex to Strange Situation classification, when regression analyses were conducted during the hypothesis testing phase of data analysis, child gender was entered into the regression equations as a predictor variable.
along with RDI Classification and AAI Classification. It did not improve prediction. (See Table 16.)

2) Within the CP group, there was a statistically significant difference in length of time since diagnosis between children rated as insecure and children rated disorganized in the Strange Situation ($F_{(2,33)}=3.646, p=.0371$). Disorganized children ($N=13$) had a mean time since diagnosis of 30.7 months, while insecure children ($N=9$) had a mean time since diagnosis of 17.0 months.

3) Within the epilepsy group, there was a statistically significant association between whether or not a child attended day care and Strange Situation Classification ($\chi^2_{(N=29, df=1)}=4.887, p=.027$). Of the ten children classified as secure in the epilepsy sample, eight did not attend daycare. Seven of 19 children classified as insecure or disorganized did not attend daycare and of those seven, five had mothers who were unresolved on the RDI. (Day care information was unavailable for one subject in the epilepsy sample.) Children classified as Disorganized were equally likely to attend day care or not.

Insert Table 11 about here.

However, Secure children were less likely to attend day care than were Insecure children in the epilepsy group. These results are summarized in Table 11.
Hypothesis Testing

Chi-square analyses were run to test the relation between AAI, RDI and Strange Situation classification. AAI and Strange Situation classifications were grouped in four ways: 1) The unresolved/disorganized category was ignored and individuals were arranged into two groups, secure and insecure, 2) individuals classified as unresolved/disorganized were included in the insecure group, 3) three separate groups were created, insecure, secure, and disorganized/unresolved, and 4) insecure and secure individuals were classified as organized, and disorganized/unresolved individuals were classified as disorganized.

The strongest and most consistent results of two-way chi-square analyses were obtained under condition 2 above when disorganized or unresolved individuals were included in the insecure or nonautonomous group. Results obtained using classifications grouped in that way will be reported here. Results of the analyses run under the other conditions outlined above may be found in tables in the Appendix. Results will first be reported for the sample as a whole and then the two subsamples (CP and epilepsy) will be discussed separately. One epilepsy subject was not included in analyses for the Strange Situation because the child had not demonstrated codable behaviors in the Strange Situation and had been rated "Can't Classify".
Whole Sample (N=68)

I. AAI and RDI

Strong associations were found between AAI and RDI classification when individuals classified as unresolved on the AAI were included in the nonautonomous group ($\chi^2_{(df=1)}=4.28, p=.039$). For mothers who were rated as resolved on the RDI, 48.4% (N=15) were also autonomous on the AAI while 51.6% (N=16) were non-autonomous or disorganized. However, when mothers were rated as unresolved on the RDI 75.7% (N=28) were non-autonomous on the AAI while 24.3% (N=9) were autonomous. These results are summarized in Table 12.

II. Strange Situation and RDI

Strong associations were also found between Strange Situation Classification and RDI Classification when children classified as disorganized in the Strange Situation were included in the insecure group ($\chi^2_{(df=1)}=7.30, p=.007$). Again there were more noticeable associations when classification on the RDI was unresolved. When mothers were classified as unresolved on the RDI, 75.7% (N=28) had children who demonstrated insecure or disorganized behavior in the Strange Situation. When mothers were classified as resolved on the RDI, 56.7% (N=1) had secure children and 43.3% had insecure or disorganized children. These results are summarized in Table 13.
III. AAI and Strange Situation

No significant relation was found in this sample between Strange Situation Classification and AAI Classification. Findings are summarized in Table 14.

IV. AAI, RDI and Strange Situation Classification

A three-way chi-square, controlling for AAI classification, found a weak association between RDI classification and Strange Situation classification when a mother was rated nonautonomous on the AAI ($\chi^2_{(m44, df-1)}=2.832$, $p=.092$), and a statistically significant association between RDI classification and Strange Situation classification when a mother was rated as autonomous ($\chi^2_{(m53, df-1)}=3.885$, $p=.049$). These results are presented in Table 15.

V. Multiple Regression

Multiple regression was performed with Strange Situation classification as the dependent variable and RDI, AAI, and the interaction of RDI and AAI classification as the independent
variables. The obtained $R^2 (\cdot112)$ was significantly different from zero ($F(12,64) = 4.049, p = .022$). These results were not significantly different from the obtained $R^2 (\cdot109)$ when RDI was entered into the equation alone. Child gender was also entered into the regression equation because of the observed link between child gender and Strange Situation classification in this sample. Child gender did not explain any further variance than that explained by RDI alone. Results are presented in Table 16.

Insert Table 16 about here.

VI. Exploratory t-tests, RDI by AAI Experience Scales

T-tests were performed to determine whether classification of an individual as Resolved or Unresolved on the RDI would predict different scores on the experience scales of the AAI. Mothers who convincingly described their own mothers ($t(66) = 2.97, p = .004$) and fathers ($t(62) = 2.96, p = .004$) as loving on the AAI were more likely to be resolved on the RDI. Mothers who reported childhood experiences reflecting rejecting behavior on the part of their own mothers were more likely to be unresolved on the RDI ($t(66) = -2.48, p = .016$). The difference between resolved and unresolved mothers who described their own mothers as behaving in a role-reversing way (i.e., a way that exaggerated the parent's need of the child) approached significance ($t(66) = -1.95, p = .055$). (See Table 17.) T-tests were performed to determine whether there was an association between evaluation of a parent's report
of her own childhood experiences and Strange Situation classification of her child. No significant results were obtained.

Insert Table 17 about here.

VII. Exploratory t-tests, RDI by AAI State of Mind Scales

T-tests were performed to determine whether classification of an individual as resolved or unresolved on the RDI would predict different scores on the state of mind scales of the AAI. Mothers who spoke of their attachment experience in coherent ways ($t_{(69)}=2.84$, $p=.006$) and who were judged by the coder to have coherent thought processes ($t_{(69)}=3.22$, $p=.002$) were more likely to be resolved on the RDI. Mothers who were judged as unresolved with respect to loss on the AAI were more likely to also be unresolved on the RDI ($t_{(69)}=-2.28$, $p=.026$). Mothers who spoke dismissively or disparagingly of attachment were more likely to be unresolved on the RDI ($t_{(69)}=-2.02$, $p=.048$). The difference between resolved and unresolved mothers whose speech patterns were judged to be passive approached significance ($t_{(69)}=-1.68$, $p=.099$). (See Table 19.)

Insert Table 19 about here.
Cerebral Palsy Subsample (N=38)

I. RDI and AAI

When AAI classification was compared to AAI classification at the Autonomous/Nonautonomous level, significant results were obtained ($r^2_{(N=38, df=1)} = 4.474$, $p = .034$). When mothers were classified on the RDI as resolved, 53.6% ($N=9$) were rated as autonomous on the AAI while 43.8% ($N=7$) were rated as non-autonomous or unresolved. However, when mothers were rated as unresolved on the RDI 77.3% ($N=17$) were rated nonautonomous or unresolved on the AAI and 22.7% ($N=5$) were rated autonomous. These results are summarized in Table 12.

II. RDI and Strange Situation

Marvin and Pianta (in press), have reported a strong relation between RDI and Strange Situation in this sample. This association was apparent at the secure/insecure level when children classified as disorganized in the Strange Situation were included into the insecure category ($r^2_{(N=38, df=1)} = 8.049$, $p = .005$). Mothers who were classified as unresolved on the RDI were likely to have a child classified as insecure or disorganized in the Strange Situation (11 of 16; 68.8%) and mothers classified as resolved were likely to have a child classified as secure (17 of 22; 77.3%). These results are summarized in Table 13.
III. AAI and Strange Situation

No significant relation was found in this sample between Strange Situation Classification and AAI Classification. Findings are summarized in Table 14.

IV. RDI, AAI, and Strange Situation

A three-way chi-square, controlling for AAI classification, found a weak association between RDI classification and Strange Situation classification when a mother was rated nonautonomous on the AAI ($\chi^2_{(n=24, df=1)}=2.521, p=.112$), and a statistically significant association between RDI classification and Strange Situation classification when a mother was rated as autonomous ($\chi^2_{(n=14, df=1)}=4.381, p=.036$). When a mother was rated as autonomous on the AAI, if she was resolved, she was likely to have a secure child (7 of 9 cases; 87.5%) and if she was unresolved she was likely to have an insecure or disorganized child (4 of 6 cases; 66.7%). These results are summarized in Table 15.

V. Multiple Regression

Multiple regression was performed with Strange Situation classification as the dependent variable and RDI, AAI and the interaction of RDI and AAI as the independent variables. The obtained $R^2 (\cdot218)$ was significantly different from zero ($F_{12,36}=4.882, p=.014$). This obtained $R^2$ was not greater than the $R^2 (\cdot212)$ obtained when RDI and Strange Situation were entered into the equation alone. Child gender was also entered into the regression equation because of the observed relation between child gender and Strange Situation classification. Child gender
did not explain any further variance than that explained by RDI alone. Results are summarized in Table 16.

VI. Exploratory t-tests, RDI Classification by AAI Experience Scales

T-tests were performed to determine whether classification of an individual as resolved or unresolved on the RDI would predict differences in a mother's report of her experience in childhood on the AAI. Mothers who convincingly described their own mothers ($t_{(36)}=2.21, p=.034$) and fathers ($t_{(36)}=2.87, p=.007$) as loving were more likely to be Resolved on the RDI. Mothers who described their own mothers as behaving in a role-reversing way were more likely to be Unresolved on the RDI ($t_{(36)}=-2.21, p=.034$). (See Table 17.) T-tests were also performed to determine whether there was an association between a parent's report of her own childhood experiences and Strange Situation classification of her child. No significant results were obtained.

VII. Exploratory t-tests, RDI by AAI State of Mind Scales

T-tests were performed to determine whether classification of an individual as resolved or unresolved on the RDI would predict different scores on the state of mind scales of the AAI. Mothers who spoke of their attachment experience in coherent ways ($t_{(36)}=3.32, p=.002$) and who were judged by the coder to have coherent thought processes ($t_{(36)}=3.98, p=.000$) were more likely to be resolved on the RDI. The difference in resolution with respect to loss on the AAI between mothers rated as resolved and
unresolved on the RDI approached significance \( t_{160} = -2.28, p = .093 \). The difference between resolved and unresolved mothers whose speech patterns were judged to be passive also approached significance \( t_{134} = -1.74, p = .090 \). (See Table 18.)

**Epilepsy Subsample (N=30)**

**I. RDI and AAI**

No significant associations were found when conducting two-way Chi-square analyses relating classification on the RDI and classification on the AAI. However despite the fact that the Chi-square was not significant, it was observed that mothers who were unresolved on the RDI were three times as likely to be nonautonomous or unresolved on the AAI (11 of 15 cases; 73.3%). No such correspondence was observed for mothers who were resolved on the RDI. Results are presented in Table 12.

**II. RDI and Strange Situation**

No significant associations were found when conducting two-way Chi-square analyses relating classification on the RDI and Strange Situation classification. However despite the fact that the Chi-square was not significant, it was observed that mothers who were unresolved on the RDI were three times as likely to have children who were insecure or disorganized in the Strange Situation (11 of 15 cases; 73.3%). No such correspondence was observed for mothers who were resolved on the RDI. Results are presented in Table 13.
III. **AAI and Strange Situation**

No significant relation was found in this sample between Strange Situation Classification and AAI Classification. Findings are summarized in Table 14.

IV. **3-way Chi-square and Multiple Regression Analysis**

Three-way chi-square and multiple regression analysis between RDI, AAI and Strange Situation classifications were performed for the epilepsy group. No significant results were obtained.

V. **ANOVA's, Seizure Severity Scale, RDI, AAI and Strange Situation**

ANOVA's were performed to assess the link between seizure severity (as measured by mother's responses to the Seizure Severity Scale) and RDI, AAI and Strange Situation classification. No significant results were obtained.

VI. **Exploratory t-tests, RDI by AAI Experience Scales**

In the epilepsy sample, mothers who described their own mothers as rejecting of their bids for attachment ($t_{(28)}=-2.23$, $p=.034$) or of neglecting them as children ($t_{(28)}=-2.50$, $p=.018$) were more likely to be unresolved on the RDI. (See Table 17.) Unlike in the CP sample, for mothers in the epilepsy sample there was no statistically significant association between describing one's mother as loving and being resolved on the RDI, but there was a trend in that direction ($t_{(28)}=1.89$, $p=.070$). T-tests were again performed to determine whether there was an association between a parent's report of her own childhood experiences and
Strange Situation classification of her child. No significant results were obtained.

**VII. Exploratory t-tests. RDI by AAI State of Mind Scales**

T-tests were performed to determine whether classification of an individual as resolved or unresolved on the RDI would predict different scores on the state of mind scales of the AAI. No significant differences were found. The difference between resolved and unresolved mothers who were judged to be currently angry at their mothers approached significance ($t_{(26)}=-1.95$, $p=.061$). (See Table 18.)

**Discussion**

As predicted, evidence that a mother had difficulty coming to terms with a diagnosis of illness in her child was shown in this study to be related to both the child's attachment behavior in the Strange Situation and the mother's state of mind with respect to her own attachment to her parents. Mothers who talked about the process of their child's diagnosis in ways that indicated that they had not achieved a realistic perspective of the child's limitations and abilities, who became confused or upset when talking about their response to the diagnosis or the impact of the diagnosis on themselves, or who appeared to be unable to move past this crisis point in their lives were more likely to have children who demonstrated insecure or disorganized attachment behavior in the Strange Situation. These same mothers who were classified as unresolved with respect to their child's diagnosis were also more likely to be classified as nonautonomous.
Trauma and Working Models of Relationships

(i.e., either dismissing of their own early attachment experience or preoccupied by it) or unresolved with respect to losses or traumas in their own past. This result was observed in the sample as a whole and also across both diagnostic subsamples (mothers of children with CP and mothers of children with epilepsy). Clearly, lack of resolution with respect to a child's diagnosis is linked to the risk that a mother and child will demonstrate insecure or disorganized attachment patterns as well.

When mothers were resolved with respect to their child's diagnosis (that is, they were able to realistically assess their child's capabilities, they were able to talk coherently about the process of the diagnosis and it's impact on them, and they were able to focus on the future rather than the past) children were more likely to demonstrate secure attachment behavior in the Strange Situation. However, this pattern was different when dyads were broken down by diagnostic group. In the CP subsample, there was a strong relation between secure behavior on the part of the child in the Strange Situation and a mother's resolution of diagnosis. When mothers were able to demonstrate that they had made progress in coming to terms with the child's condition, the child was likely to exhibit secure attachment behavior toward the mother in the Strange Situation. However in the epilepsy sample, there was no relation between evidence that a mother had come to resolution with respect to the diagnosis and the child's observed security of attachment. In epilepsy families, even when mothers demonstrated that they had achieved resolution with
respect to the child's diagnosis fewer children than expected were classified as secure. While non-resolution to a child's diagnosis of epilepsy is related to observed insecure attachment of the child, the ability to resolve the diagnosis does not predict that a child will demonstrate a secure pattern of attachment.

The finding that a mother's lack of resolution has a stronger association with child attachment status in the epilepsy sample than does her resolution to diagnosis is somewhat surprising. Given no other significant risk factors, resolution of diagnosis, which has been proposed to be related to a parent's ability to integrate the experience of the diagnosis into her mental model of the relationship with the child, should in theory be associated with security of attachment. Since within the epilepsy group even children of resolved mothers are at risk for insecure attachment, it is likely that there are other risk factors specific to epilepsy that are related to children's attachment classifications.

One such risk factor could be the length of time since the child was diagnosed with epilepsy. Because of the differing natures of epilepsy and CP, even though children in this sample were matched on age, children with epilepsy had been diagnosed approximately 8½ months later. Parents of children with CP had received the diagnosis 25.1 months prior to data collection, while parents of children with epilepsy had received the diagnosis only 16.5 months prior to data collection. Perhaps
disorganization created in the family by the diagnosis had not
yet settled in epilepsy families to the extent that it had in CP
families and therefore even children of resolved mothers
continued to demonstrate disorganized or insecure attachment
behaviors. Certainly, future research which evaluated children
two years rather than one year after diagnosis could test this
possible explanation for the finding that even resolved mothers
were likely to have children who behaved in ways classified as
insecure or disorganized in the Strange Situation.

Another possible factor which could explain this finding is
related to the nature of epilepsy itself. CP is a one time brain
injury. Parents of children with CP may not have specific
information about the extent to which that injury will affect the
child's ability to develop basic skills, but, for the most part,
by the average age of children in this sample, parents have a
realistic sense of the extent of their child's disability. The
child may get better but will probably not get worse. Parents of
CP children, therefore, are likely to be coping with a
predictable phenomenon. Epilepsy, however, is an ongoing
condition in which the child is likely to be subjected to
unpredictable and frightening seizures. Despite the time since
diagnosis, these families are likely to feel as if they are
coping with an ongoing crisis. This feeling of perpetual crisis
may create an environment in which even children of mothers who
have resolved the diagnosis receive contradictory, confusing or
overwhelming message from their mothers in response to their bids for attachment.

A third possible factor which could explain the fact that mothers who are resolved on the RDI are likely to have children who exhibit insecure or disorganized behaviors during the Strange Situation is that epilepsy can create neurological complications in these children. Such neurological involvement may make it difficult for these children to accurately interpret their mothers' behavior and for mothers to accurately read their children's behaviors. This potential for miscommunication between parent and child would make insecure or disorganized attachment behavior on the part of the child more likely, regardless of mother's resolution with respect to the diagnosis.

An interesting finding in the epilepsy sample was the relation between security of attachment and whether or not the child attended day care. Children classified as secure in the Strange Situation were significantly less likely to attend day care than children classified as insecure. This finding was unrelated to whether or not the mother had been classified as resolved on the RDI and it was not replicated in the CP sample. This finding suggests that, while whether or not a child attends day care is not more important than the relation between mother's resolution with respect to diagnosis and child's strange situation classification, a single relationship with a primary caregiver may be especially important to the development of secure attachment in children with epilepsy. Since a causal
relationship cannot be established given the fact that this data was all collected at a single point in time, this question will need to be explored in future research.

Overall, when AAI classification was examined for mothers classified as resolved on the RDI, there was no clear link between resolution to her child's diagnosis and the way in which a mother talked about her own attachment history. When mothers were judged to have resolved a diagnosis, the normally expected distribution of AAI classifications was obtained. This was observed for the sample as a whole and also when the sample was broken down into diagnostic groups.

Again, it is surprising that while there is a solid link between lack of resolution on the RDI and a nonautonomous or unresolved state of mind with respect to attachment, resolution on the RDI was not observed to be associated with an autonomous state of mind with respect to attachment. Theoretically, one would expect that resolution on the RDI would be more difficult to achieve if one's state of mind with respect to attachment relationships was characterized by lack of coherence or confusion, as it is in the nonautonomous and unresolved classifications, and therefore the two would be likely to be associated as has been observed in this sample. But there is a higher number than expected of nonautonomous or unresolved mothers among those mothers who were resolved with respect to the diagnosis. More research is needed to understand factors that may provide buffering effects (such as social support, parent
education about the child's illness or therapeutic intervention) and allow even parents with nonautonomous states of mind with respect to attachment to achieve resolution of their child's diagnosis.

Unlike findings in samples of children with no medical condition, no association was found between AAI classification and Strange Situation classification. RDI classification was observed to be related to both AAI classification and Strange Situation classification. This result was obtained for the sample as a whole and for both diagnostic groups. This result speaks to the importance of a mother's reaction to diagnosis in samples of children with medical conditions and the role it plays in attachment relationships. As hypothesized, the trauma of a diagnosis appears to interrupt the well-established link between AAI and Strange Situation classification.

Sroufe and Fleeson (1986) have proposed that the mechanism by which qualities of attachment are passed from generation to generation involves the internalization and representation within a mental model of both roles in a relationship. These mental models allow for unconscious behaviors that insure continuity of experience in relationships. In samples of children without disabilities, there is a correspondence between parents' attachment classifications based on the AAI and their infants' Strange Situation attachment classification in 70% to 80% of cases (Bakermans-Kranenburg and van IJzendoorn, in press). However, in situations involving a child with a chronic illness
or disability, perhaps the mental model no longer serves as an efficient source of unconscious behaviors for the parent-child relationship because the parent has never been a child with a disability. Patterns of relationships that were internalized and would have been unconsciously reproduced under normal circumstances may no longer be relied upon because the fit between the model of relationships and the actual relationship with the ill or disabled child is no longer good enough.

In addition, when the parent has been unable to resolve the diagnosis (which was the case in 43% of mothers of children with CP and 50% of mothers of children with epilepsy) the mental representation of the relationship with the child becomes contaminated by confusing, inconsistent, or emotionally overwhelming ideas that are unintegrated with the model. Consequently, parents act in ways that are confusing to the child and predictive of insecurity or disorganization of attachment, regardless of the mother's state of mind with respect to her own attachment relationships in childhood. Analyses that examined the relationship between all three primary variables (AAI classification, Strange Situation classification, and RDI classification) found that there was a strong association between RDI and child security of attachment, and that autonomy on the AAI did not contribute to the model in helping to understand child attachment classification. It would seem that the trauma of the diagnosis acts to interrupt the direct link between AAI and Strange Situation classification. Clearly further research
is called for to support or challenge this model of attachment relationships in families of children with disabilities.

This model would provide a theoretical explanation for the finding that greater rates of disorganized attachment have been observed in this sample and in other high risk samples than in normal populations (van IJzendoorn, et al, 1992). Main and Hesse (1990) propose that parents' unresolved traumatic experiences cause disruptions in a parent's caregiving behavior that result in disorganized attachment of the child. Similarly, a parent's lack of resolution with respect to a child's illness or disability could cause similar disruptions in caregiving behaviors resulting in increased rates of disorganized attachment in samples of medically involved children.

Greater rates of unresolved state of mind with respect to loss or trauma on the AAI have also been observed in mothers in this sample. Since all data in this sample was collected at a single point in time, it is impossible to establish a causal relation between this variable and lack of resolution with respect to diagnosis. The increased rates of lack of resolution on the AAI may be an artifact of this sample. A mother who was unresolved with respect to loss or trauma by definition would have elements of her own attachment experience unintegrated or split off from her mental representation of attachment relationships. It is likely that she would consequently have difficulty integrating the reality of a diagnosis into her mental model of her relationship with her child, which would result in
the observed relation between lack of resolution on the AAI and lack of resolution on the RDI. An alternative explanation of the link between lack of resolution on the AAI and the RDI is that the mental disorganization created by the trauma of a diagnosis of one's child may make a mother more vulnerable to disorganization around issues of loss or trauma in her past.

AAI classifications are determined by examining the way in which people talk about their history of attachment relationships rather than the content of that history. Nonetheless, there tend to be associations between people's reports of their childhood and their AAI classification. For example, dismissing individuals are likely to describe their parents as rejecting or neglecting, while preoccupied individuals are likely to describe their parents as role reversing, although these descriptions are not necessary or sufficient for classification (Main and Goldwyn, in press). Within this sample, RDI classification was compared with AAI experience scale ratings in order to explore the possible link between a mother's report of her childhood experiences with her own parents and her demonstrated resolution to a diagnosis of her child. For the sample as a whole, mothers who rated their own mothers and fathers as loving were likely to be resolved. However, when AAI classification is compared to AAI experience scales, rating one's own parents as loving is significantly associated with security of attachment, (see Table 19) and therefore this result simply echoes the finding that RDI classification and AAI classification are related.
Additionally, however, RDI classification was found to be related to reports of childhood experience with one's mother as rejecting and role reversing. These results differed by diagnostic group. Mothers in the CP sample who were rated as resolved on the RDI convincingly reported that their mothers and fathers were loving, but also that their mothers were less likely to be role reversing than the mothers of those who were rated as unresolved on the RDI. In the epilepsy sample, there was no relation between reports of parents loving behavior and resolution on the RDI. However, mothers classified as unresolved were more likely to report that their mothers were rejecting or neglecting. These results suggest that mothers who represent their relationships with their own mothers as role reversing, rejecting or neglecting have difficulty resolving a diagnosis in their child irrespective of their state of mind with respect to attachment. Whether or not parents have been able to develop an integrated mental model of relationships that accurately reflects their childhood experiences, it appears to be more difficult to resolve the trauma of having a child diagnosed with an illness or disability if one's experiences in childhood were characterized by relationships with one's parents that devalued or overvalued one's attachment to them.

When exploratory analyses were done looking at RDI classification by AAI State of Mind scales, the results were in the expected direction. Coherence on the AAI was related to resolution on the RDI. Since the ability to express oneself
coherently is a requirement for classification as resolved on the RDI, this result is not surprising. This result bears out the theory that an integrated mental model of relationships will be apparent across contexts. In counterpoint, lack of resolution with respect to loss was related to lack of resolution on the RDI. Clearly, lack of integration within the mental model is also apparent across contexts.

A major contribution of this study is that it provides further construct validation of the RDI. The obtained results suggest that the RDI is a reliable and valid procedure for assessing a mother's success in coping with the grief and crisis regarding her child's diagnosis. The demonstrated link between a mother's state of mind with respect to attachment and RDI build on the work of Marvin and Pianta (in press) which demonstrated a link between Strange Situation classification of the child and mother's RDI classification.

A further contribution of this study is that it both helps us to describe factors that make up mental models of relationships in adults and to understand the relatedness of mental models of relationships in mothers and children with illnesses or handicapping conditions. While this study does not have predictive power, its great value is in helping to identify and understand factors that play a part in the attachment process in families of children with special needs. Certainly, causal links that have been established in the literature between AAI classification and Strange Situation classification allow us to
speculate that the RDI may have predictive validity, a speculation that will need to be tested through future research. However the first step in creating a predictive model is to have a full understanding of all of the factors that likely contribute to outcome. This study identifies RDI as an important factor in the attachment equation and demonstrates that it can be measured reliably, which adds to our understanding of the complexity of the mechanisms of attachment in families of children with special needs.

The results of this study highlight the importance of understanding a parent's reaction to a child's diagnosis and it's relation to the parent's mental model of relationships in order to fully understanding attachment relationships in families of children with special needs. When children and families become medically involved, the models necessary to explain relationships and behavior become increasingly complex. The consequences of childhood illness and its effect the parent-child relationship is a rich and fruitful area for continued research.
References


Trauma and Working Models of Relationships


Trauma and Working Models of Relationships


Trauma and Working Models of Relationships (Eds.). Attachment across the life cycle (pp. 127-159). London: Routledge.


Trauma and Working Models of Relationships


Pianta, R.C., Marvin, R.S., Britner, P.A., IV, & Borowitz, K.C. (submitted). Experiencing the diagnosis of disability or chronic illness in a child: Trauma to the caregiving system. *Infant Mental Health.*


Wikler, L., Wasow, M., & Hatfield, E. (1981). Chronic sorrow revisited: Parent vs. professional depiction of the adjustment of
Table 1

Sample Demographics: Means (Standard Deviations)

<table>
<thead>
<tr>
<th>Variable</th>
<th>CP Group</th>
<th>Epilepsy Group</th>
</tr>
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<tbody>
<tr>
<td>Child Age [months]</td>
<td>37.03 (10.04)</td>
<td>33.07 (12.33)</td>
</tr>
<tr>
<td>Gestational Age [weeks]</td>
<td>33.39 (5.88)</td>
<td>40.04 (2.16)*</td>
</tr>
<tr>
<td>Child Race [% white/black/hispanic]</td>
<td>86.8/10.5/2.6</td>
<td>96.7/3.3/0.0</td>
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<tr>
<td>Child Sex [% female]</td>
<td>34.2</td>
<td>56.7</td>
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<tr>
<td>Child Cognitive Level [mental age in months]</td>
<td>24.64 (11.23)</td>
<td>27.97 (14.91)</td>
</tr>
<tr>
<td>Mother Age [years]</td>
<td>30.68 (6.82)</td>
<td>29.97 (5.15)</td>
</tr>
<tr>
<td>Mother Education [years]</td>
<td>13.23 (2.22)</td>
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</tr>
<tr>
<td>Mother Employment [hours/week]</td>
<td>14.32 (18.68)</td>
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</tr>
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<td>Family Income [thousands; yearly gross]</td>
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<td>$51.3 (52.4)**</td>
</tr>
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<td>Mother length of marriage or relationship [months]</td>
<td>73.19 (48.45)</td>
<td>71.31 (46.90)</td>
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<td>Neighborhood [% rural]</td>
<td>42.9</td>
<td>30.8*</td>
</tr>
<tr>
<td>Children in Day Care [%]</td>
<td>51.3</td>
<td>46.7</td>
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<tr>
<td>Length of Time in Day Care [months]</td>
<td>6.90 (12.53)</td>
<td>9.32 (13.03)</td>
</tr>
<tr>
<td>Hours Per Week in Day Care</td>
<td>12.94 (15.78)</td>
<td>10.97 (16.60)</td>
</tr>
<tr>
<td>Time Since Diagnosis [months]</td>
<td>25.08 (12.22)</td>
<td>16.53 (9.43)***</td>
</tr>
<tr>
<td>Number of Hospitalizations</td>
<td>3.37 (2.92)</td>
<td>3.50 (2.11)</td>
</tr>
</tbody>
</table>

*  \( t_{(57)} = -5.65, \ p < .001 \)

**  \( t_{(64)} = -2.04, \ p < .05 \)

***  \( t_{(54)} = 3.13, \ p < .01 \)

*  \( t_{(61, \ df=2)} = 8.518, \ p < .05 \)

Note: All other group differences were non-significant at \( p < .05 \).
Table 2

Reaction to Diagnosis Interview (Planta, R.C., & Marvin, R.S. (submitted). Measuring and classifying parents' reactions to their child's diagnosis: Reliability and description. Journal of Consulting Clinical Psychology.)

1. When did you first realize that your child had a medical problem?

2. What were your feelings at the time of this realization?

3. How have these feelings changed over time?

4. Tell me exactly what happened when you learned of your child's diagnosis. Where were you, who else was there, what were you feeling and thinking at that moment?

5. Parents sometimes wonder or have ideas about why they have a child with special needs. Do you have anything like that which you wonder about?
Table 3

**Abbreviated Adult Attachment Interview** (George, C., Kaplan, N., & Main, M. (1985). *An adult attachment interview*. Unpublished manuscript, University of California at Berkeley.)

Let's start by having you tell me about your family growing up. Who was in your family, what were the ages of the children, what occupations did you parents have, where did you live, did you move around a lot?

1. **Tell me about your relationship with your mom when you were a little child (age 4, 5 and 6).**
   
   Now I'd like you to choose three words that tell about your relationship with your mother when you were a little child. For each one, give me a specific experience, or a particular day or incident. [On the unabbreviated AAI, parents are asked for five adjectives.]

2. **Tell me about your relationship with your dad when you were a little child (age 4, 5 and 6).**
   
   Now I'd like you to choose three words that tell about your relationship with your father when you were a little child. For each one, give me a specific experience, or a particular day or incident. [On the unabbreviated AAI, parents are asked for five adjectives.]

3. **Which of your parents did you feel closest to? Why? Why not your other parent?**

4. **a.** When you were upset emotionally as a young child (ages 4, 5, and 6) what would you do? Please describe a specific incident.

   **b.** When you were physically hurt? Please describe a specific incident.

   **c.** When you were ill, what would happen? (Specific incident.)

   [Question omitted: What is the first time you remember being separated from your parents? How did you or they respond? Are there other separations that stand out in your mind?]

5. **Did you ever feel rejected as a young child? Of course, looking back on it now, you may realize it was not really rejection, but what I'm trying to ask about here is whether you remember ever having felt rejected in childhood.**
   
   -- How old were you when you first felt this way and what did you do?

   -- Why do you think your parents did those things; do you think he/she realized he/she was rejecting you?

6. **a.** Were your parents ever threatening in any way, maybe for discipline or maybe jokingly? Some of our parents have memories of some kind of abuse in the family. Did anything like that happen to you or in your family?
   
   -- How old were you?

   -- How severe? How frequent?
Table 3  (continued)

Abbreviated Adult Attachment Interview (George, C., Kaplan, N., & Main, M. (1985). An adult attachment interview. Unpublished manuscript, University of California at Berkeley.)

--- Does it affect your approach to (your child)?

b. Did your parents ever threaten to leave you or send you away from home? [If yes, use follow-up questions above.]

7. We've talked about the things your parents did when you were growing up. Why do you think your parents behaved as they did during your childhood?

8. How do you think your childhood experiences with your parents have affected your adult personality? [On the unabbreviated AAI, individuals would then be asked if they feel that any aspects of these early experiences were set-backs in their development.]

9. When you were growing up, was there any other adult, besides your parents, to whom you felt particularly close? Who?

What was that relationship like?

10. a. Did you experience the loss of a parent or other close loved one (sibling, grandparent, close friend, etc.) as a child?

--- How old were you?

--- What were the circumstances (sudden or expected)?

--- How did you respond at the time?

--- Did you attend the funeral?

--- Have your feelings regarding this death changed over time?

--- What was the effect on your remaining parent (siblings, etc.)?

--- How did this loss effect your adult personality?

--- Has it affected your approach to (child's name)?

b. Did you experience other losses in childhood? [Follow-up as above.]

[Question omitted: Have there been changes in your relationship with your parents (or remaining parent) since childhood?]

11. What is your relationship with your parents like now for you as an adult? [If different from childhood, ask how the change happened.]

[Question omitted: How do you respond now, in terms of feelings, when you separate from your child?]

12. Was there any one thing you learned from your own childhood experience? What would you hope (child's name) learns from his/her experience of being parented by you?
13. If you could have one wish for (child's name) for 20 years from now, what would it be? I'm wondering about what kind of future you'd like to see for your child.
Table 4


Episode 1 Mother and child enter and settle into the room.

Episode 2 (3 minutes) Child plays. Mother sits quietly, and responds to the child if approached but has been asked by the investigators not to initiate interaction with the child.

Episode 3 (3 minutes) An unfamiliar woman enters. She engages in conversation with the mother for the first two minutes and then plays with the child for the final minute. (This step has been modified for this data set. The original Ainsworth instructions require the unfamiliar woman to sit quietly for the first minute, engage the mother in conversation for the second minute, and interact with the child for the third minute.)

Episode 4 (3 minutes) Mother leaves the room, leaving the child with the unfamiliar woman. If the child becomes upset, the unfamiliar woman attempts to soothe and distract. However if the child cannot be soothed, this episode may be cut short.

Episode 5 (3 minutes) Mother returns and comforts and settles the child if necessary. The unfamiliar woman leaves the room.

Episode 6 (3 minutes) Mother leaves a second time. This time the child is alone in the room. If the child becomes upset, this episode may also be cut short.

Episode 7 (3 minutes) The unfamiliar woman returns to the room, comforts and settles the child if necessary, and then returns to her chair, responding to the child but not initiating interaction. If the child is not easily soothed, this episode may also be cut short.

Episode 8 (3 minutes) The mother returns and again comforts and settles the child if necessary. She then interacts with the child in whatever way seems most natural.
Table 5  Seizure Severity Scale

We would like you to answer some questions about your child's seizures. If you child has more than one kind of seizure, we will be asking you to respond to these questions for each kind of seizure. Some of the questions will refer to auras or warnings. An aura or warning is a feeling that the child might experience such as a tummy ache or fuzzy head, which might occur on its own but suggests that a seizure is likely to follow.

Description of Seizure/s:
1. How many different kinds of seizures has your child had in the past four months?
2. How many seizures of the first kind has your child had in the past four months?
3. Describe the first kind of seizure beginning with what happens just prior to the seizure and ending with when the child's behavior returns to normal.
4. How many seizures of the second kind has your child had in the past four months?
5. Describe the second kind of seizure beginning with what happens just prior to the seizure and ending with when the child's behavior returns to normal.

MEASUREMENT OF SEIZURE SEVERITY
Please answer the questions with reference to the seizures your child has experienced in the past four months. If your child has had more than one kind of seizure, please fill out the multiple choice questions twice, filling in the blanks for both Seizure 1 and Seizure 2. If your child has had only one type of seizure, please fill in only the blanks for Seizure 1.

1. Over the past four months, how often have your child's seizures occurred at a particular time of day or night (for example, when s/he wakes up)?
   a) always  b) usually  c) sometimes  d) never or can occur at any time of day or night

2. Over the past four months when your child has had a seizure, how often has he/she been able to tell you when a seizure was going to occur?
   a) always  b) usually  c) sometimes  d) never

3. Over the past four months, how often do you think your child has been able to stop a seizure from happening?
   a) always  b) usually  c) sometimes  d) never

4. Over the last four months, how often has your child had an aura or a warning with his/her seizures (an aura can be any sensations such as tummy aches, funny feelings, fuzzy heads)?
   a) always  b) usually  c) sometimes  d) never
Table 5  Seizure Severity Scale (continued)

5. How much control do you feel your child has over his/her seizures?
   a) very good control  b) moderate control  c) little control  d) no control at all

6. Over the past four months, how often has your child had seizures in clusters (a few seizures close together with a seizure-free period in between)?
   a) always  b) usually  c) sometimes  d) never

7. Over the past four months, how often have your child's seizures occurred during sleep?
   a) always  b) usually  c) sometimes  d) never

8. Over the past four months, how many things that your child wanted to do have been stopped because of seizures?
   a) all of the things were stopped because of seizures
   b) a lot of things were stopped because of seizures
   c) a few things were stopped because of seizures
   d) seizures did not stop my child from doing anything s/he wanted to do

9. How severe have your child's seizures been over the past four months?
   a) very severe  b) moderately severe  c) mild
   d) very mild

10. If your child has passed out during seizures over the past four months, how long has it commonly lasted?
   a) does not or does so for less than 1 minute
   b) between 1 and 2 minutes
   c) between 2 and 5 minutes
   d) for more than 5 minutes

11. Over the past four months, how confused has your child commonly been after his/her seizures?
    a) very confused  b) moderately confused  c) slightly confused
    d) not confused at all

12. In the past four months if your child has been confused after a seizure, how long has the confusion commonly lasted?
    a) none or less than 1 minute  b) between 1 and 5 minutes
    c) between 6 minutes and 1 hour  d) 1 hour or more

13. Over the past four months, how often has your child fallen to the ground during a seizure?
    a) always  b) usually  c) sometimes  d) never

14. During the past four months, how often has your child reported or appeared to have a headache after seizures?
Table 5  Seizure Severity Scale (continued)

a) always  b) usually  c) sometimes  d) never

15. During the past four months, how often has your child reported feeling sleepy or appeared to be sleepy after seizures?
   a) always  b) usually  c) sometimes  d) never

16. During the past four months, how often has your child wet himself/herself during the seizure?
   a) always  b) usually  c) sometimes  d) never

17. During the past four months, how often has your child bitten his/her tongue during a seizure?
   a) always  b) usually  c) sometimes  d) never

18. During the past four months, how often has your child injured himself/herself other than tongue biting?
   a) always  b) usually  c) sometimes  d) never

19. In the past four months, how long has it usually been before your child can return to what s/he was doing before the seizure?
   a) immediate return or less than 1 minute
   b) between 1 and 5 minutes
   c) between 6 minutes and 1 hour
   d) 1 hour or more

Please answer separately for mother and for father.

20. Did you have any experience or know anyone with seizures before your child was diagnosed?
   yes  no

   b. If yes, what was that person's relation to you (e.g., cousin, uncle, childhood friend, child of friend)?

   c. What is your understanding of how well that person's (those persons') seizures were controlled?
      poor control  fair control  good control

21. After your child was diagnosed with a seizure disorder did you learn (heard for the first time) about anyone else who had a seizure disorder?
   yes  no

   b. If yes, what is this person's (these persons') relation to you?

   c. What is your understanding of how well that person's (those persons') seizures were controlled?
      poor control  fair control  good control
Table 6

Variables Available for Data Analysis
The following variables will be available for each case.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Reaction To Diagnosis</th>
<th>Strange Situation</th>
<th>Seizure Severity Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Attachment Interview (Parent)</td>
<td>(Parent)</td>
<td>(Parent)</td>
<td>(Child)</td>
</tr>
<tr>
<td>Major Classification (autonomous, dismissing, or preoccupied)</td>
<td>Resolved or Unresolved</td>
<td>Major Classification (secure, avoidant or ambivalent)</td>
<td>Severity Score (for epilepsy sample only)</td>
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<tr>
<td>Resolved or Unresolved with Respect to Trauma/Loss</td>
<td>Subclassification</td>
<td>Disorganized/ Controlling or Not</td>
<td></td>
</tr>
</tbody>
</table>

Experience Scales: scored 1-9 on each scale for each parent (loving, rejecting, role-reversing, neglecting, pressure to achieve)

State of Mind Scales: scored 1-9 on each scale for each parent (idealizing, angry, derogating)

State of Mind Scales: scored 1-9 on each scale for each subject (lack of memory, derogation of attachment, passivity of speech, metacognitive monitoring, fear of loss, unresolved/loss, unresolved/trauma, coherence of speech, coherence of mind)
<table>
<thead>
<tr>
<th>Measure</th>
<th>Code</th>
<th>Percent Obtained</th>
<th>Percent Reported</th>
<th>( \chi^2 )</th>
<th>( p )</th>
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</thead>
<tbody>
<tr>
<td>Reaction to Diagnosis Interview*</td>
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<td></td>
<td>Unresolved</td>
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<td>57.0</td>
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<td></td>
<td>Ambivalent</td>
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<td></td>
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<td>36.8</td>
<td>16.9</td>
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</tbody>
</table>

* Marvin and Pianta (in press)
** Van IJzendoorn, Goldberg, Kroonenberg, and Frankel (1992)
*** Bakermans-Kranenburg and van IJzendoorn (in press)
Table 8

Independence of RDI Classification from Demographic Variables. Mean (Standard Deviation)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Resolved (R)</th>
<th>Total Unresolved (U)</th>
<th>CP R</th>
<th>CP U</th>
<th>Epilepsy R</th>
<th>Epilepsy U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group [% CP]</td>
<td>51.6</td>
<td>59.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Age [months]</td>
<td>34.29 (12.13)</td>
<td>36.11 (10.45)</td>
<td>37.06 (9.64)</td>
<td>37.00 (10.54)</td>
<td>31.33 (14.06)</td>
<td>34.80 (10.53)</td>
</tr>
<tr>
<td>Child Sex [% female]</td>
<td>41.9</td>
<td>45.9</td>
<td>31.3</td>
<td>36.4</td>
<td>53.3</td>
<td>60.0</td>
</tr>
<tr>
<td>Cognitive Level [mental age in months]</td>
<td>25.63 (14.21)</td>
<td>26.54 (12.06)</td>
<td>26.56 (13.18)</td>
<td>23.10 (9.46)</td>
<td>24.57 (15.75)</td>
<td>31.33 (13.86)</td>
</tr>
<tr>
<td>Mother Age [years]</td>
<td>29.97 (6.13)</td>
<td>30.70 (6.12)</td>
<td>30.27 (6.77)</td>
<td>31.00 (7.02)</td>
<td>29.64 (5.60)</td>
<td>30.29 (4.86)</td>
</tr>
<tr>
<td>Mother Education [years]</td>
<td>13.43 (2.40)</td>
<td>13.53 (2.48)</td>
<td>13.00 (2.13)</td>
<td>13.41 (2.32)</td>
<td>13.93 (2.67)</td>
<td>13.72 (2.79)</td>
</tr>
<tr>
<td>Family Income [thousands per year]</td>
<td>$30.5 (17.2)</td>
<td>$48.0 (50.1)</td>
<td>$27.7 (20.2)</td>
<td>$34.7 (26.3)</td>
<td>$33.8 (13.1)</td>
<td>$68.9 (69.7)</td>
</tr>
<tr>
<td>Children in Day Care [%]</td>
<td>48.4</td>
<td>50.0</td>
<td>43.8</td>
<td>57.1</td>
<td>53.3</td>
<td>40.0</td>
</tr>
<tr>
<td>Time Since Diagnosis [months]</td>
<td>19.71 (11.52)</td>
<td>22.51 (12.00)</td>
<td>24.81 (11.69)</td>
<td>25.30 (12.93)</td>
<td>14.27 (8.74)</td>
<td>18.80 (9.84)</td>
</tr>
<tr>
<td>Number of Hospitalizations</td>
<td>3.39 (1.78)</td>
<td>3.46 (3.11)</td>
<td>3.38</td>
<td>3.36</td>
<td>3.40</td>
<td>3.60</td>
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</tbody>
</table>

Note: All group differences were non-significant at p < .05.
### Table 9

Independence of AAI Classification from Demographic Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>U</th>
<th>F</th>
<th>D/E</th>
<th>U</th>
<th>F</th>
<th>D/E</th>
<th>U</th>
<th>F</th>
<th>D/E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group [% CP]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Age</td>
<td>36.5/10.8</td>
<td>33.8/11.0</td>
<td>35.6/12.3</td>
<td>38.2/11.0</td>
<td>36.2/7.3</td>
<td>36.9/10.9</td>
<td>34.9/14.5</td>
<td>30.4/14.5</td>
<td>33.4/12.9</td>
</tr>
<tr>
<td>Child Sex %</td>
<td>48.0/41.7</td>
<td>41.7/28.6</td>
<td>53.8/33.3</td>
<td>60.0/10.9</td>
<td>53.8/18.4</td>
<td>57.1/18.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog. Level</td>
<td>28.0/9.1</td>
<td>23.0/7.6</td>
<td>27.4/16.8</td>
<td>25.9/7.6</td>
<td>22.9/8.3</td>
<td>25.3/16.4</td>
<td>29.7/10.1</td>
<td>23.1/5.0</td>
<td>31.0/5.4</td>
</tr>
<tr>
<td>Mother Age</td>
<td>30.5/6.0</td>
<td>29.4/7.2</td>
<td>31.3/4.3</td>
<td>31.1/7.2</td>
<td>29.1/4.3</td>
<td>32.2/8.8</td>
<td>30.1/5.0</td>
<td>29.9/5.9</td>
<td>29.9/5.4</td>
</tr>
<tr>
<td>Mother Educ.</td>
<td>13.6/2.6</td>
<td>13.4/1.5</td>
<td>13.5/2.2</td>
<td>13.1/1.5</td>
<td>12.9/2.2</td>
<td>13.8/2.9</td>
<td>14.1/3.3</td>
<td>14.1/2.0</td>
<td>13.0/2.1</td>
</tr>
<tr>
<td>Family Income</td>
<td>$49.1/56.9</td>
<td>$33.9/19.3</td>
<td>$35.4/26.4</td>
<td>$32.5/20.5</td>
<td>$27.0/18.5</td>
<td>$36.6/32.2</td>
<td>$64.4/74.5</td>
<td>$45.8/14.9</td>
<td>$33.3/13.8</td>
</tr>
<tr>
<td>Child % in Day</td>
<td>52.0/21.4</td>
<td>47.8/20.5</td>
<td>47.4/13.8</td>
<td>58.3/11.3</td>
<td>38.5/11.4</td>
<td>53.8/14.7</td>
<td>46.2/9.2</td>
<td>60.0/8.3</td>
<td>28.6/12.4</td>
</tr>
<tr>
<td>Care Time Since</td>
<td>11.7/4.1</td>
<td>10.6/3.2</td>
<td>13.8/2.8</td>
<td>27.5/4.7</td>
<td>23.5/2.9</td>
<td>24.3/1.5</td>
<td>15.8/4.5</td>
<td>16.5/1.8</td>
<td>18.0/1.8</td>
</tr>
<tr>
<td>DX months</td>
<td>13.8/3.5</td>
<td>11.4/1.8</td>
<td>14.7/1.8</td>
<td>11.3/4.5</td>
<td>11.4/1.5</td>
<td>14.7/1.8</td>
<td>9.2/2.3</td>
<td>8.3/2.2</td>
<td>12.4/1.6</td>
</tr>
<tr>
<td>Number of Hosps.</td>
<td>21.8/4.7</td>
<td>23.5/4.7</td>
<td>24.3/2.7</td>
<td>27.5/2.7</td>
<td>23.5/2.9</td>
<td>24.3/1.8</td>
<td>15.8/3.6</td>
<td>16.5/3.7</td>
<td>18.0/3.0</td>
</tr>
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</table>

**Mental Age in Months**  
**Thousand of Dollars per Year**  
**Number of Hospitalizations**

Note: All group differences were non-significant at p < .05.
Trauma and Working Models of Relationships

Table 10

Independence of Strange Situation Classification from Demographic Variables. (Mean/Standard Deviation)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>CP</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D (B)</td>
<td>A/C (D)</td>
<td></td>
</tr>
<tr>
<td>Group [% CP]</td>
<td>61.9/61.5</td>
<td>45.0/44.5</td>
<td></td>
</tr>
<tr>
<td>Child</td>
<td>40.1/33.1</td>
<td>34.0/32.9</td>
<td>41.9/39.8</td>
</tr>
<tr>
<td>Age months</td>
<td>9.5/11.1</td>
<td>11.6/10.8</td>
<td>8.9/8.4</td>
</tr>
<tr>
<td>Child</td>
<td>19.0</td>
<td>38.5/35.0</td>
<td>80.0/77.8</td>
</tr>
<tr>
<td>Sex %</td>
<td>26.7/24.4</td>
<td>28.8/27.4</td>
<td>30.1/28.4</td>
</tr>
<tr>
<td>Female</td>
<td>9.6/14.2</td>
<td>14.0/10.7</td>
<td>9.7/7.3</td>
</tr>
<tr>
<td>Cog. Level</td>
<td>30.2/28.9</td>
<td>33.2/30.9</td>
<td>30.1/29.4</td>
</tr>
<tr>
<td>Mother</td>
<td>5.8/4.8</td>
<td>6.9/6.4</td>
<td>6.9/6.4</td>
</tr>
<tr>
<td>Age years</td>
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<td>14.1/13.8</td>
<td>12.9/12.8</td>
</tr>
<tr>
<td>Mother</td>
<td>2.2/2.5</td>
<td>2.6/2.3</td>
<td>2.5/2.3</td>
</tr>
<tr>
<td>Educ. years</td>
<td>45.5/39.3</td>
<td>34.7/34.9</td>
<td>34.9/34.7</td>
</tr>
<tr>
<td>Income $$</td>
<td>63.1/58.0</td>
<td>18.5/17.5</td>
<td>21.9/21.0</td>
</tr>
<tr>
<td>Family</td>
<td>57.1/52.0</td>
<td>65.0/60.5</td>
<td>65.0/60.0</td>
</tr>
<tr>
<td>% In Day Care</td>
<td>26.6/25.5</td>
<td>16.2/15.1</td>
<td>25.8/24.7</td>
</tr>
<tr>
<td>Time since DX months</td>
<td>12.9/11.1</td>
<td>9.6/9.1</td>
<td>12.5/11.5</td>
</tr>
<tr>
<td>Number of Hosps.</td>
<td>3.8/3.3</td>
<td>3.1/2.8</td>
<td>3.1/2.8</td>
</tr>
<tr>
<td>***</td>
<td>16.076, p&lt;.001</td>
<td>10.240, p&lt;.01</td>
<td>5.845, p=.054</td>
</tr>
</tbody>
</table>

Note: All other group differences were non-significant at p < .05.
Table 11
Epilepsy Group
Number of children who attend day care: broken down by Strange Situation classification

<table>
<thead>
<tr>
<th>Group</th>
<th>Attend Daycare?</th>
<th>D</th>
<th>B</th>
<th>A/C</th>
<th>B</th>
<th>A/C/D</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Epilepsy Children</td>
<td>No</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Mother Resolved on RDI</td>
<td>No</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Mother Unresolved on RDI</td>
<td>No</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>6</td>
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</tbody>
</table>
Table 12
Chi-square AAI classification by RDI classification

<table>
<thead>
<tr>
<th>RDI Classification</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D/E/U</td>
<td>F</td>
<td>D/E/U</td>
</tr>
<tr>
<td>Resolved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>16</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Row %</td>
<td>51.6</td>
<td>48.4</td>
<td>43.8</td>
</tr>
<tr>
<td>Column %</td>
<td>36.4</td>
<td>62.5</td>
<td>29.2</td>
</tr>
<tr>
<td>Unresolved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>28</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Row %</td>
<td>75.7</td>
<td>24.3</td>
<td>77.3</td>
</tr>
<tr>
<td>Column %</td>
<td>63.6</td>
<td>37.5</td>
<td>70.8</td>
</tr>
<tr>
<td>Tests of Significance</td>
<td></td>
<td>( \chi^2 ) df=1</td>
<td>4.28</td>
</tr>
<tr>
<td></td>
<td>( p )</td>
<td>.039</td>
<td>.034</td>
</tr>
</tbody>
</table>
Table 13
Chi-square
Strange Situation classification by RDI classification

<table>
<thead>
<tr>
<th>RDI Classification</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A/C/D</td>
<td>B</td>
<td>A/C/D</td>
</tr>
<tr>
<td>Resolved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>13</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Row %</td>
<td>43.3</td>
<td>56.7</td>
<td>31.3</td>
</tr>
<tr>
<td>Column %</td>
<td>31.7</td>
<td>65.4</td>
<td>22.7</td>
</tr>
<tr>
<td>Unresolved</td>
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</tr>
<tr>
<td>Frequency</td>
<td>28</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Row %</td>
<td>75.7</td>
<td>24.3</td>
<td>77.3</td>
</tr>
<tr>
<td>Column %</td>
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<td>34.6</td>
<td>77.3</td>
</tr>
<tr>
<td>Tests of Significance</td>
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<td></td>
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<tr>
<td>( \chi^2 ) df=1</td>
<td>7.30</td>
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<td>8.05</td>
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<tr>
<td>( p )</td>
<td>.007</td>
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<td>.005</td>
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### Table 14

Chi-square
Strange Situation classification by AAI classification

<table>
<thead>
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<th>AAI Classification</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A/C/D</td>
<td>B</td>
<td>A/C/D</td>
</tr>
<tr>
<td>D/E/U Frequency</td>
<td>29</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Row %</td>
<td>65.9</td>
<td>34.1</td>
<td>66.7</td>
</tr>
<tr>
<td>Column %</td>
<td>70.7</td>
<td>57.7</td>
<td>72.7</td>
</tr>
<tr>
<td>F Frequency</td>
<td>12</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Row %</td>
<td>52.2</td>
<td>47.8</td>
<td>42.9</td>
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<tr>
<td>Column %</td>
<td>29.3</td>
<td>42.3</td>
<td>27.3</td>
</tr>
<tr>
<td>Tests of Significance</td>
<td>$^2$ df=1</td>
<td>1.20</td>
<td>2.06</td>
</tr>
<tr>
<td>$p$</td>
<td>0.273</td>
<td>0.152</td>
<td>0.930</td>
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</table>
### Table 15

Three-way Chi-square: RDI by Strange Situation, controlling for AAI

<table>
<thead>
<tr>
<th>AAI= D/E/U</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A/C/D</td>
<td>B</td>
<td>A/C/D</td>
</tr>
<tr>
<td>RDI Classification</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Resolved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Column %</td>
<td>27.6</td>
<td>53.3</td>
<td>18.8</td>
</tr>
<tr>
<td>Row %</td>
<td>50.0</td>
<td>50.0</td>
<td>42.9</td>
</tr>
<tr>
<td>Unresolved</td>
<td></td>
<td></td>
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<tr>
<td>Frequency</td>
<td>21</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Column %</td>
<td>72.4</td>
<td>46.7</td>
<td>81.3</td>
</tr>
<tr>
<td>Row %</td>
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<td>25.0</td>
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</tr>
<tr>
<td>$\chi^2$ df=1</td>
<td>2.83</td>
<td>2.52</td>
<td>.642</td>
</tr>
<tr>
<td>$p$</td>
<td>.092</td>
<td>.112</td>
<td>.423</td>
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<td>AAI=F</td>
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<tr>
<td>RDI Classification</td>
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</tr>
<tr>
<td>Resolved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>5</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Column %</td>
<td>41.7</td>
<td>81.8</td>
<td>33.3</td>
</tr>
<tr>
<td>Row %</td>
<td>35.7</td>
<td>64.3</td>
<td>22.2</td>
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<tr>
<td>Unresolved</td>
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<td></td>
</tr>
<tr>
<td>Frequency</td>
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<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Column %</td>
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<td>18.2</td>
<td>66.7</td>
</tr>
<tr>
<td>Row %</td>
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<td>22.2</td>
<td>80.0</td>
</tr>
<tr>
<td>Tests of Significance</td>
<td></td>
<td></td>
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</tr>
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<td>$\chi^2$ df=1</td>
<td>3.89</td>
<td>4.38</td>
<td>.225</td>
</tr>
<tr>
<td>$p$</td>
<td>.049</td>
<td>.063</td>
<td>.365</td>
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</table>
Table 16
Hierarchical Regression of RDI classification and AAI classification on Strange Situation Classification

<table>
<thead>
<tr>
<th>Group</th>
<th>Independent Variables</th>
<th>cum $R^2$</th>
<th>$F$</th>
<th>df</th>
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<tr>
<td>Total Sample</td>
<td>RDI, AAI</td>
<td>.11231</td>
<td>.0221</td>
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</tr>
<tr>
<td></td>
<td>RDI, AAI, RDI x AAI</td>
<td>.11883</td>
<td>.0454*</td>
<td>3.63</td>
</tr>
<tr>
<td></td>
<td>RDI, AAI, RDI x AAI, Child Gender</td>
<td>.12560</td>
<td>.0763</td>
<td>4.62</td>
</tr>
<tr>
<td>Cerebral Palsy</td>
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<td>.0135</td>
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<td>RDI, AAI, RDI x AAI</td>
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<td>.0289**</td>
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<tr>
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<td>RDI, AAI, RDI x AAI, Child Gender</td>
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* Addition of the interaction variable to the equation did not reliably improve $R^2$. $T_{(interaction)}=-.683$, $p=.4973$.

** Addition of the interaction variable to the equation did not reliably improve $R^2$. $T_{(interaction)}=-.737$, $p=.4662$.

*** Addition of Child Gender to the equation did not reliably improve $R^2$. $T_{(child gender)}=.813$, $p=.4219$. 
Table 17
Exploratory t-tests: RDI by AAI Experience Scales

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Mother Loving</th>
<th>Mother Rejecting</th>
<th>Mother Role-Reversing</th>
<th>Mother Neglecting</th>
<th>Father Loving</th>
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<td>4.24</td>
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Table 18

T-tests: AAI Experience Scales by AAI Classification

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<td>.000</td>
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<td>.001</td>
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Table 19

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<th>Coherent Mind</th>
<th>Loss Unresolved</th>
<th>Passivity</th>
<th>Derogation</th>
<th>Anger</th>
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<td></td>
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</tbody>
</table>

* R = Resolved, U=Unresolved on the RDI
### APPENDIX

Chi-square: AAI classification by RDI classification

**Condition 1:** The unresolved/disorganized category was ignored and individuals were arranged into two groups, secure and insecure.

<table>
<thead>
<tr>
<th>RDI Classification</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D/E</td>
<td>F</td>
<td>D/E</td>
</tr>
<tr>
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<td>Frequency</td>
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<td>19</td>
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<tr>
<td></td>
<td>Row %</td>
<td>38.7</td>
<td>61.3</td>
</tr>
<tr>
<td></td>
<td>Column %</td>
<td>35.3</td>
<td>55.9</td>
</tr>
<tr>
<td>Unresolved</td>
<td>Frequency</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Row %</td>
<td>59.5</td>
<td>40.5</td>
</tr>
<tr>
<td></td>
<td>Column %</td>
<td>64.7</td>
<td>44.1</td>
</tr>
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<td>0.013</td>
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</table>

**Condition 3:** Three separate groups were created, insecure, secure, and disorganized/unresolved.

<table>
<thead>
<tr>
<th>RDI Class</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U</td>
<td>F</td>
<td>D/E</td>
</tr>
<tr>
<td>Resolved</td>
<td>Freq</td>
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<td>15</td>
</tr>
<tr>
<td></td>
<td>Row %</td>
<td>22.6</td>
<td>48.4</td>
</tr>
<tr>
<td></td>
<td>Col %</td>
<td>28.0</td>
<td>62.5</td>
</tr>
<tr>
<td>Unresolved</td>
<td>Freq</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Row %</td>
<td>48.6</td>
<td>24.3</td>
</tr>
<tr>
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<td>Col %</td>
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<tr>
<td></td>
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</tbody>
</table>
# APPENDIX

Chi-square: AAI classification by RDI classification
Condition 4: Insecure and secure individuals were classified as organized, and disorganized/unresolved individuals were classified as disorganized.

<table>
<thead>
<tr>
<th>RDI Classification</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D/E/F U</td>
<td>D/E/F U</td>
<td>D/E/F U</td>
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<tr>
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<td>Frequency 7</td>
<td>24 3 13 4 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Row % 22.6</td>
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<td>26.7 73.3</td>
</tr>
<tr>
<td></td>
<td>Column % 28.0</td>
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<td>30.8 64.7</td>
</tr>
<tr>
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<td>Frequency 18</td>
<td>19 9 13 9 6</td>
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<td>Row % 48.6</td>
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Chi-square: Strange Situation classification by RDI classification
Condition 1: The unresolved/disorganized category was ignored and individuals were arranged into two groups, secure and insecure.

<table>
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<th>RDI Classification</th>
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<td>A/C B</td>
<td>A/C B</td>
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<td>46.7 53.3</td>
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<td>Column % 36.4</td>
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<td>46.7 53.3</td>
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<td>53.3 46.7</td>
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APPENDIX

Condition 3: Three separate groups were created, insecure, secure, and disorganized/unresolved.

<table>
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<th>RDI Class</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
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</tr>
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<td>7</td>
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<tr>
<td>Col%</td>
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<td>65.4</td>
<td>35.0</td>
</tr>
<tr>
<td>Unresolved</td>
<td>15</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Row%</td>
<td>40.5</td>
<td>24.3</td>
<td>35.1</td>
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<tr>
<td>Col%</td>
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<td>65.0</td>
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Condition 4: Insecure and secure individuals were classified as organized, and disorganized/unresolved individuals were classified as disorganized.

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<td>Column %</td>
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<td>45.5</td>
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<td>Column %</td>
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### APPENDIX

**Chi-square: Strange Situation classification by AAI classification**

**Condition 1:** The unresolved/disorganized category was ignored and individuals were arranged into two groups, secure and insecure.

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<th>AAI Classification</th>
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<td>A/C</td>
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<td><strong>Tests of Significance</strong></td>
<td>( \chi^2 \text{ df}=1 )</td>
<td>0.02</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>( P )</td>
<td>.901</td>
<td>.582</td>
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</table>

**Condition 3:** Three separate groups were created, insecure, secure, and disorganized/unresolved.

<table>
<thead>
<tr>
<th>AAI Class</th>
<th>Total Sample</th>
<th>Cerebral Palsy</th>
<th>Epilepsy</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>D</td>
<td>B</td>
<td>A/C</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td></td>
<td></td>
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<tr>
<td>Freq</td>
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<td>8</td>
<td>9</td>
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<tr>
<td>Row %</td>
<td>32.0</td>
<td>32.0</td>
<td>36.0</td>
</tr>
<tr>
<td>Col %</td>
<td>38.1</td>
<td>30.8</td>
<td>45.0</td>
</tr>
<tr>
<td><strong>F</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freq</td>
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<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Row %</td>
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<td>36.8</td>
<td>26.3</td>
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<tr>
<td>Col %</td>
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<td>26.9</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>D/E</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Freq</td>
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<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Row %</td>
<td>26.1</td>
<td>47.8</td>
<td>26.1</td>
</tr>
<tr>
<td>Col %</td>
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<td>42.3</td>
<td>30.0</td>
</tr>
<tr>
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<td>( \chi^2 \text{ df}=1 )</td>
<td>1.69</td>
<td>3.77</td>
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<td></td>
<td>( P )</td>
<td>.792</td>
<td>.439</td>
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APPENDIX

Condition 4: Insecure and secure individuals were classified as organized, and disorganized/unresolved individuals were classified as disorganized.

<table>
<thead>
<tr>
<th>AAI Classification</th>
<th>Total Sample</th>
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<th>Epilepsy</th>
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<td>D</td>
<td>A/B/C</td>
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<tr>
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<td>9</td>
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<tr>
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<td></td>
<td>$P$</td>
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