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REPRESENTATION, VIOLENCE AND PARENTING: AN EXAMINATION OF THE IMPACT OF DOMESTIC VIOLENCE AND PRENATAL MATERNAL REPRESENTATIONS ON PARENTING BEHAVIORS DURING TODDLERHOOD

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By

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ABSTRACT

REPRESENTATION, VIOLENCE AND PARENTING:
AN EXAMINATION OF THE IMPACT OF DOMESTIC VIOLENCE
AND PRENATAL MATERNAL REPRESENTATIONS
ON PARENTING BEHAVIORS DURING TODDLERHOOD

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The attachment literature suggests that a mother's internal representation of her child will significantly impact her developing relationship with that child. Using a longitudinal design, the present study examined the relation of a mother's (N = 168) prenatal representation of her child and her actual parenting behavior with that child at one year of age in a combined sample of women endorsing a history of domestic violence and women without a history of partner violence. Representational typology was assessed using a semi-structured interview format. Parenting was assessed via direct observation of mother-child interactive behavior in a laboratory setting. The six parenting variables were factor analyzed and found to represent three primary factors: positive parenting, over-controlling parenting and hostile parenting. ANOVA analyses revealed that prenatal representational typology was significantly related to parenting behavior at the one year birth date. Exposure to domestic violence did not impact parenting behavior in this sample. These findings suggest that mothers develop internalized representations of their infants even before birth and that these templates impact their parenting behavior with their children in significant and theoretically consistent ways during the first year of life.

To my family.

Their extraordinary help and support made this project possible.
Their enduring love makes it meaningful.

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INTRODUCTION

> "I suggest, as you know I do, and I suppose everyone agrees, that ordinarily the woman enters into a phase, a phase from which she ordinarily recovers in the weeks and months after the baby's birth, in which to a large extent she is the baby and the baby is her. There is nothing mystical about this. After all, she was a baby once, and she has in her the memories of being a baby; she also has memories of being cared for, and these memories either help or hinder her in her own experiences as a mother."
>
> Winnicott, 1966 (cited in Winnicott, 1987)

From the earliest days of Freud's work, psychoanalytic theorists along with their colleagues in multiple disciplines have attempted to determine the basic elements which contribute to healthy child development, including the role of parenting in this process. Certainly, they are not alone. Deeply embedded in every human culture is a template for the important work of raising the next generation. Within this overarching framework of cultural consistency, however, exists the normal, expected variations of parenting behaviors at the individual and family system levels. Understanding these variations and their links to child development is the focus of much current research in the field of developmental psychology.

The importance of the parent-child relationship in infancy and early childhood as a primary contributor to child development and child mental health outcomes has been well-established in the literature (Sameroff & Emde, 1989). Considerable research efforts have been expended in an effort to understand and define the factors which lead to competent parenting during the early months and years of life. Examinations of the impact of various environmental factors on an adult's ability to parent effectively are prevalent in the literature (Fitzgerald, Lester, & Zuckerman, 1995). Less well studied,

however, are the more proximal, intra-psychic factors which directly influence parents' relationships and behaviors with their young children.

Beginning with the development of attachment theory (Bowlby, 1969/1982), and continuing to the current emphasis in the child development field on developmental psychopathology, there has been an increasing theoretical interest in the impact of the parent's (usually the mother's) mental representation of her child on her actual behavior with that child. It has been suggested that parental representations of offspring develop during pregnancy and shape maternal caretaking behaviors from birth (Vizziello, Antonioli, Cocci, & Invernizzi, 1993; Zeanah, Keener, Stewart, & Anders, 1985). Empirical support for this hypothesis, however, has been sparse. The present investigation will extend the literature in this area by examining the link between a mother's internal representation, or "working model," of her unborn child during the third trimester of pregnancy and her actual parenting behavior with that child when the child is one year of age. Furthermore, given the empirical support in the literature for the contention that domestic violence has a powerful impact on parenting behaviors, this investigation will examine the effect of maternal exposure to domestic violence on parenting behaviors at the one year birth date. To date, much of the research examining the link between domestic violence and parenting has been carried out with parents of latency-aged and adolescent children. Thus, this study will extend our understanding of this relationship by examining its impact during infancy.

Inherent in the examination of parent-infant relationships is the longitudinal and inter-generational nature of the constructs under consideration. The mother, as Winnicott declared, brings to the relationship with her newborn infant her own history of past

caretaking relationships. Thus, the following review emphasizes a developmental approach to understanding the etiology of representations of relationships as they unfold over time for any given individual. First considered is the construct of internal representations of relationships as it is currently understood in the literature. The importance of these representations for adults making the transition into parenting is highlighted followed by a review of the literature in the area of parental representations of individual children and the importance of the formation of these representations during pregnancy. Finally, a review of the critical role of domestic violence as it relates to parenting young children is considered.

Working models: Representing relationships and guiding behavior throughout development

The construct of internal representation as it is currently described in the literature is derived primarily from attachment theory. Drawing on psychoanalytic theory, object relations theory and the cognitive theories of the day, Bowlby used the term "working model" in a general manner to describe the process by which individuals construct and revise mental templates of many facets of their environments including relationships (Bowlby, 1969/1982). Of special significance to the emotional development of the infant are the concepts of the working models of self and other within relationships. It is this construct of the representation of relationships which was most carefully articulated by Bowlby and is central to much contemporary analysis of relationship development throughout the lifespan (Bartholomew & Perlman, 1994).

A contemporary of Bowlby, Ainsworth provided empirical support for the theoretical construct of the working model (Ainsworth, Blehar, Waters, & Wall, 1978). In her seminal work documenting infant attachment strategy in the laboratory and maternal caretaking behavior in the home environment she found that by one year of age infants had developed behavioral patterns which seemed to be based on their internalized expectations, or *representations*, of the ways in which their mothers tended to interact with them. Consequent to repeated daily interactions with their mothers, the infants in Ainsworth's study had developed behavioral strategies which maximized the likelihood that the mother would remain emotionally available. In other words, the development of their attachment strategies seemed to be driven by their internal representations, or working models, of their relationships with their mothers which were themselves driven by actual daily interactions with her.

One significant limitation of Ainsworth's original study was that her sample size linking laboratory and home behavior was small ($n = 23$). Despite this small sample size, however, her exacting and unprecedented documentation of maternal behavior in the home revealed the underlying mechanism through which the infant's attachment strategy developed. In fact, given the low statistical power a sample of this size affords, the fact that she identified a main effect is especially compelling.

Beyond cognitive structures, an infant's working model of relationships also incorporates affective components (Crittenden, 1990) and has historically been thought to be a specialized template of the primary caregiving relationship. Rather than reflecting specific interactions or lived events per se, working models are instead thought to be generalized templates based on many interactions experienced over time and, in effect,

averaged into a general model (Bretherton, 1985). Thus, throughout infancy and early childhood in an ongoing and, more importantly, a *dynamic* process, the child begins to construct a model of what to expect in the context of a relationship.

Once developed, working models are powerful psychological constructs in that they not only reflect lived experience but also serve as a guide to future behavior. For example, in Ainsworth's Baltimore Study (Ainsworth et al., 1978), infants categorized as *anxious-avoidant* demonstrated a striking pattern of emotional deactivation in the laboratory wherein they appeared to not need the comfort of their mothers at all. They played independently and often seemed impervious to their mother's presence or absence. At home, the mothers of these infants tended to demonstrate a rejecting behavioral pattern, especially when their infants expressed negative affect. Additionally, they seemed to dislike and avoid physical contact with their infants (Ainsworth et al., 1978). In the case of these dyads, the infants' behavioral strategies in the laboratory situation were understood as an effort to maintain proximity to the mother by deactivating their emotional responses due to their mother's inability to tolerate them (Hazan & Shaver, 1987; Weinfield, Sroufe, Egeland, & Carlson, 1999). Their laboratory behavior reflected their representation of their relationship with their mother as necessarily distant which then served to guide their behavior when in her presence.

While this finding is consistent with the theoretical model of attachment behavior, more recent psychophysiological research has cast doubt on the internal psychobiological manifestation of attachment behavior especially regarding the anxious-avoidant type. Specifically, it has been theorized that infants displaying an anxious-avoidant attachment style are, in fact, experiencing internal levels of distress but are masking their external

behavioral manifestations of this distress in an attempt to keep the mother in close proximity. However, contrary to this hypothesis, Hertsgaard, Gunnar, Erickson and Nachimias (1995), examined cortisol levels during the strange situation protocol and found that infants displaying anxious-avoidant attachment behaviors did not evince elevated cortisol levels during this protocol. This suggests that their internal experience of separation from the mother may not be distressing to them. This study was itself limited by a small sample size (n = 34) and methodological difficulties including a lack of baseline measures of cortisol for the infants under study. However, while more work in this area is clearly needed, this study is notable in its challenge to current conceptualizations of the internal psychological experiences of infants with insecure attachment strategies, especially those demonstrating the anxious-avoidant type.

As children move into adulthood, it is hypothesized that these internal working models become increasingly stable templates which individuals use to understand and organize their interpersonal relationships (Collins & Read, 1994; Zeanah, Benoit, Hirshberg, & Barton, 1993). They are thought to operate largely outside of conscious awareness and over time shift from being primarily a quality of a specific relationship to representing a more permanent personality trait of the individual. The adult attachment literature supports this view, finding patterns similar to Ainsworth's attachment styles of deactivating and hyper-activating emotional styles in addition to a similar "secure" adult category in adults' narratives of their childhood relationships with their own parents (Main & Goldwyn, 1984) and their current adult relationships with friends and romantic partners (Hazan & Shaver, 1987).

In fact, the majority of empirical support for the working model construct comes from the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985). The AAI is a semi-structured interview designed to assess an adult's "state of mind" with regard to attachment style and uses a categorical coding system which parallels the infant attachment categories. It is notable that while the widespread use of the AAI in the literature has resulted in the ability to produce replication studies and to compare findings across a variety of populations, it is also a limitation within the literature that other measures have not been actively pursued which can demonstrate the convergent and divergent validity issues associated with the measurement of this construct.

Administration of the AAI involves asking respondents to describe various aspects of their past relationship with their primary caregivers (usually the parents) as well as their current thoughts and feelings about these relationships. Beyond a simple content analysis, the process features of the narrative such as coherence and organization are critical in understanding the adult's representation of their relationships. Specifically, the ability to psychologically access and coherently articulate affectively charged thoughts and events without the need to minimize (as in the dismissing category) or distort (as in the preoccupied category) the information is necessary for a narrative to be scored autonomous (secure) (Main & Goldwyn, 1984). Thus, regardless of the specific content of the childhood events being reported (e.g., abuse or neglect versus love and support in childhood), the critical factor is the level of flexibility the adult demonstrates in his or her narrative report of past events. Whereas the autonomous narrative evinces a flexible ability to access painful as well as joyful information, the insecure narratives tend

either to defensively exclude or distort emotionally charged information, resulting in an incoherent narrative account of past events.

Expanding on work done by Tulving (1979), Crittenden (1995) has argued that three types of memory systems are especially salient to the working model construct: procedural, semantic and episodic memories. The latter two of these become manifest in individual narratives of past caretaking relationships. Procedural memory, as she describes it, is composed of behavioral patterns which are elicited consistently by similar situations. These memories are likely the first to develop in the infant, prior to the acquisition of language. They are thought to be a generalization of behavioral sequences such as an infant's raised arms responding to her mother stooping to pick her up. Semantic memory is composed of linguistically encoded facts and generalizations about the individual's environment, including relationship-specific information. Semantic memories may include assertions made by others and accepted as true or they may be based on actual lived experience. For example an individual who has been told by his mother that his father, "is a good man and means well," in spite of the fact that he was terribly abusive, may semantically represent that information based on the assertion of his mother. Alternatively, the same individual may represent the memory based on actual experience as, "People cannot be trusted and relationships are usually dangerous." Finally, episodic memories represent the encoding of specific events or experiences and can be encoded visually or linguistically. Examples in this case might include a picture in ones mind of a parent walking away during a separation or a linguistically encoded memory such as, "I remember *the time when* my mom left for a weekend and my dad stayed home to take care of me."

Memory system typology as it relates to the encoding of relationship-specific information is thought to be differentially related to the insecure attachment strategies (Crittenden, 1995; Main & Goldwyn, 1984). For example, adults scored as dismissing on the AAI tend to rely on semantic memories and they often idealize past caretakers. When asked to give specific (i.e., episodic) support for their summary statements ("My mother was very good to me") they tend either to contradict their semantic statements or to be unable to produce any episodic support for their statement at all. Individuals scored as preoccupied on the AAI, in contrast, tend to rely on episodic memories. They also may contradict themselves but tend to provide an abundance of episodic memories without the ability to generalize to a semantic understanding of events. Their narratives are often wandering and confusing. Autonomous narratives, however, generally include both semantic and episodic memory systems which are presented in balanced, well-organized fashion (Main & Goldwyn, 1984).

Collins and Read (1994) have stressed the adaptive relevance of a flexible working model of relationships. They argue that, in general, representations serve as a guides in future and ongoing relationships such that one can understand and process the behaviors of others internally and function in novel situations and environments without having to, "re-think each one from the beginning" (p. 56). In essence, representations allow the individual to mentally organize incoming information, consider various courses of action and then choose a course based on their assessment of the situation (Bretherton & Munholland, 1999). Secure (autonomous) representations allow individuals to experience relationships in their entirety and to remain open to new experiences as they unfold within relationships. The insecure types, on the other hand, restrict or distort

incoming information such that the individual is tied to a more narrow and rigid pattern of understanding and responding to relationship salient information. While some theorists have argued that extreme environmental circumstances often require a more narrow processing of information in order to be adaptive (George & Solomon, 1999), there is widespread agreement that the flexible strategy is the ideal.

The working model of the child: The child as held in the mind of the mother

By adulthood, working models which are based on the individual's attachment experiences are thought to have been consolidated and assumed to be functioning in a relatively stable, consistent, and relatively unconscious manner. It seems likely, then, that one's relationship history would play a powerful role in the formation of a relationship with one's own child. In fact, there is a now well-established literature demonstrating a correspondence of adult attachment "state of mind" as measured by the Adult Attachment Interview (George et al., 1985) and the attachment strategy of the child of that adult as measured by the Strange Situation Protocol (Van IJzendoorn, 1995).

As adults make the transition into parenthood, however, they are required to make what George and Solomon (1999) have identified as a critical shift from activation of the attachment behavioral system which supports the goal of being protected to activation of the caregiving behavioral system in which they strive to be the provider of protection to their child. They argue, as did Bowlby (1969/1982), that the caregiving system functions in a similar manner to the attachment system in that it is a "goal-corrected" behavioral system which functions in a coordinated manner to achieve specific goals and is activated and terminated by both endogenous and environmental cues. Furthermore, like the

attachment system, it is guided and organized at the level of representation through working models. In any given dyad the caregiving system of the parent works in tandem with the attachment system of the infant such that the activation of one system (e.g., the infant crying in response to a perceived environmental threat) tends to activate the other (e.g., the parent picking the child up and comforting her).

The caregiving system as George and Solomon have articulated it, however, is a relatively global construct which their research has suggested is formed in early to middle adolescence prior to the birth of the first child (George & Solomon, 1999). In adulthood it is likely that a parent's representation of a particular child will influence the specific ways in which her caregiving system is activated. As Aber, Belsky, Slade and Crnic (1999) explain, "... just as the motivation to seek care leads children to develop a representation of their relationship with their caregiver, so will the motivation to provide care lead parents to develop a representation of their relationship with their child. These representations function to guide parents' expectations and behaviors in the relationship and influence patterns of parenting" (p. 1040).

Thus, it seems likely that parents would maintain separate and specific working models for each of their children. In each case a part of this working model is likely to reflect the parent's own relationship history (e.g., their AAI classification), as well as their generalized caregiving representation and behavioral strategy. Another part, however, is almost certainly more directly related to factors specific to each child. These factors may include features such as birth order, gender, appearance, child temperament and major events in the life of the mother occurring simultaneous to the gestation and birth of that child. Empirical support for this distinction between representation of the

caregiving system and representation of the specific relationship with an individual child is evident in a study examining prenatal representations of the self as mother and of the infant in primiparous women (Ammaniti et al., 1992). Using adjective lists based on the semantic differential model, these investigators found that women in their seventh month of pregnancy demonstrated distinct models of self as mother and of the infant. They also found evidence that these representations were complementary such that mothers whose representations of self-as-mother were, for example, protective, affectionate and amenable, tended to hold representations of their unborn child as calm, easygoing and intelligent. Methodological weaknesses of this study, however, limit its generalizability. These include a very small sample size (n = 23), composed of middle-class, two-parent families in Italy. In addition, the representational interview used in these analyses is unique to this research group and has not been widely adopted in the literature. Despite these limitations, these data provide preliminary support for the hypothesis that a woman forms a representation of her infant during the prenatal period and that this representation is distinct from her view of herself as a mother.

In the last two decades research efforts have been focused on examining parents' internal representations of relationships which are specific to individual children (Zeanah & Barton, 1989; Zeanah et al., 1993). A number of research teams have developed comprehensive measures which yield an integrated picture of multiple aspects of a parent's working model of one particular child (Aber, Slade, Berger, Bresgi, & Kaplan, 1985; Bretherton, Biringen, Ridgeway, Maslin, & et al., 1989; Zeanah et al., 1993). Two measures in particular, have been designed for use in the prenatal and/or infancy period. The Parent Development Interview (PDI) (Pianta, O'Connor, & Marvin, 1993; Slade,

Belsky, Aber, & Phelps, 1999) is a 45-question interview which asks parents to describe their own experiences and their impressions of their child's experiences at times when they are engaged in pleasurable interaction and at times when they are in conflict. The PDI is scored dimensionally using both organizational and affective features of the narrative. It does not yield categorical typologies but instead uses multiple codes (e.g., joy-pleasure, coherence, richness of perceptions) to assess three primary features of the representation: the parental representation of the affective experience of parenting; the parental representation of the child's affective experience; and the parental state of mind in relation to the child. The Working Model of the Child Interview (WMCI; (Zeanah et al., 1993), in contrast, yields typological categories as well as scores on multiple subscales. Parents are asked to describe in detail their child's individual characteristics, personality and development, as well as characteristics of their relationship with their child. Parents are assigned to one typological category (Balanced, Disengaged or Distorted) based upon the constellation of their subscale scores which include the affective coloring of the interview (e.g., anger, sadness, joy), narrative coherence (e.g., coherence), and relationship dimensions (e.g., intensity of involvement, richness of perception). While the PDI yields dimensional data which are arguably richer in their capacity to capture a more comprehensive clinical picture of each dyad, the WMCI yields categorical data in terms of the typological main categories which lend themselves to clearly interpretable statistical analyses. In addition, subscale analyses of the WMCI adds a level of clinical richness to the interpretation of data from this measure.

Projections from pregnancy: Forming the representation

While it is likely that most individuals begin the process of psychological preparation for parenting while they are still children (e.g., playing with dolls, pretending to be married to playmates), the majority of adults enter into an intensely heightened phase of emotional preparedness for parenting during the forty-week gestational period of pregnancy (Cohen & Slade, 2000). For women this psychological transition is in part driven by the intense physiologic transformations they experience internally as their bodies begin to change in fundamental and profound ways. Not surprisingly, the psychological transformations women undergo during this period have historically been understood as coinciding directly with the physiologic stages of the pregnancy (Benedek, 1970).

During the first trimester of a medically normal pregnancy women experience varying degrees of physical discomfort associated with the enormous hormonal changes of early pregnancy (Cohen & Slade, 2000). However, despite the fact that their bodies are undergoing profound physiologic changes and they are likely experiencing some physical symptoms (e.g., nausea, exhaustion), these changes are not tied in any direct experiential manner to the existence of a baby (Leifer, 1977). That is, the mother can not yet feel the presence of the baby inside her body. Consequently, the emotional experience of early pregnancy often includes a sense of unreality in regard to the existence of the baby. Instead there tends to be a predominant focus on the physiologic experience of the self during this period (Lumley, 1982). A dramatic change occurs, however, during the second trimester when the expansion of the abdominal area and the experience of quickening serve to confirm the reality of the presence of the baby

(Bradford, 1998). These physical manifestations trigger a psychological shift as well (Leifer, 1977). Cohen and Slade (2000) note that at this point in pregnancy, "the psychological transition accelerates; not only is she becoming a mother physically, she is now evolving into one psychologically (p. 23)." By the third trimester, the mother's body is expanding rapidly as the fetus enters a phase primarily of growth and refinement of its major organs which underwent their structural development in the earlier weeks of pregnancy (Bradford, 1998). Winnicott (1956) referred to this as the beginning of the phase of, "primary maternal preoccupation." In his view women at this stage of pregnancy begin to turn inward psychologically and a primary focus on the impending birth of the baby becomes manifest. While a certain level of ambivalence and emotional lability is common during this phase, the third trimester generally heralds the beginning of a heightened sense of emotional attunement with and connection to the baby.

An inherent component of this maternal-fetal connection is the development of specific detailed representations of the growing baby inside her (Zeanah, Zeanah, & Stewart, 1990). Given that the information which can be authentically known about the infant at this stage of development is minimal (e.g., level of fetal activity, images from an ultrasound), the majority of the representation must necessarily be based on the mother's psychological projections onto the infant. As has been previously discussed, these are likely based in part on her own relationship history as well as idiosyncratic features of this pregnancy which might include factors such as birth order, major life events occurring simultaneous to the conception or pregnancy of this infant and relationship with the father of the infant, among others. As Cohen and Slade (2000) point out: "In pregnancy, there is no known baby and mother, there is only an imagined baby and

mother. Thus, these representations are truly creations, based not on reality but on an amalgam of the mother's projections, hopes, dreams, attributions, and unconscious fantasies (p. 29)." Assessment of representational models during pregnancy, then, offers a unique window into the essentially "pure" form of the developing maternal working model based solely on the psychological contributions of the mother. Following the birth of the infant many other factors have been posited to impact the mother-infant relationship (and presumably the representation) such as the temperament of the infant (Crockenberg & Leerkes, 2000) and the quality of the birth experience (Green, Coupland, & Kitzinger, 1990). Thus, it is only through the assessment of maternal representations of the infant prenatally that we can obtain an understanding of her emotional connection to the infant while it is still relatively unfettered by actual experiences with the infant.

Early empirical work examining prenatal representational models began as a result of the speculation by some research groups that parent-reported child temperament questionnaires included significant rater bias and were in fact reflecting parental projections about infant temperament rather than objective infant qualities (Zeanah & Benoit, 1995). In a series of studies examining the stability of parental ratings of infant temperament assessed prenatally and then again postnatally, Zeanah and colleagues found a striking pattern of concordance between these two time periods (Zeanah, Keener, & Anders, 1986a, 1986b; Zeanah, Keener, Anders, & Vieira-Baker, 1987; Zeanah et al., 1985). Each of these studies used one of two well-validated measures of infant temperament in order to assess temperament before and after birth. The measures used were the Infant Temperament Questionnaire (Carey & McDevitt, 1978) or the Infant Characteristics Questionnaire (Bates, Freeland, & Lounsbury, 1979). However, sample

sizes were very small for all of these studies, ranging from 21 to 34 participants and samples were drawn either from extremely high-risk groups (i.e. pregnant adolescents) or from extremely low-risk groups (i.e. middle- to upper-class, educated, married couples). Thus, the generalizability of these data is limited. Despite these methodological limitations, however, the data are compelling. The investigators have interpreted these findings as support for the view that parental representations are manifest during pregnancy and profoundly shape the way in which parents view their infants after birth. In explaining this phenomenon they contend that during pregnancy, "objective information is minimal, and yet parents must construct an internal representation of an individual of enormous psychological significance to them (p. 192)" (Zeanah et al., 1990).

Given the power of internal representations to guide behavior at an unconscious level it is likely that prenatal representations have a profound effect on the ways in which a new mother interacts with her newborn infant beginning with the first moments of contact. The literature linking AAI typologies to Strange Situation categories would seem to confirm this hypothesis (Van IJzendoorn, 1995). In fact, preliminary work in this area has provided confirmatory evidence for the proposition that the mother's prenatal representation holds significant meaning for the developing mother-infant relationship. For instance in a study of 85 middle-class, Caucasian mother-infant dyads, Benoit, Parker and Zeanah (1997) found a 74% concordance rate (54% expected by chance) between maternal representations assessed prenatally and Strange Situation category assessed when the infants were 12 months of age. The sample size of 96 participants is greater than much of the work done previously in this area. However, the authors report an attrition rate of 16% and analyses comparing the mothers who

completed the study and those who did not revealed that completers were older, reported higher levels of education and came from more affluent SES groups when compared with non-completers. This difference coupled with the lack of diversity in the sample as a whole, limits the generalizability of these results. More recently, using a sample of domestic violence victims and a non-abused community sample, Huth-Bocks (2002) found a 60% concordance of prenatal representations as assessed by the WMCI and Strange Situation categories at one year of age. The heterogeneity of this sample and the larger sample size (n = 206), make these results more compelling in terms of the generalizability of the findings. Thus, there is preliminary evidence that prenatal representations do influence the mother-infant relationship. Presumably this is a directional association wherein the mother's prenatal representation of her child impacts her interactions with that child right from birth. Much more research is needed in this area, however, to support this hypothesis.

Parenting behaviors: Representations influence the next generation

While there is a relative paucity of research linking prenatal representations with postnatal relationship quality, current research is beginning to document the influence of concurrently-assessed parental representations of individual children on the parent-child relationship and actual parenting behaviors within these relationships (Slade et al., 1999). Benoit, Zeanah, Parker, Nicholson and Coolbear (1997), for example, summarized their findings from a multi-site collaborative project. Aggragating the data from three participating studies (n = 99), they found that mothers of infants with clinical diagnoses (e.g., failure to thrive, sleep disorder) were significantly more likely than mothers of

control group infants to hold representations of their infants as either disengaged or distorted as measured by the WMCI. 91% of these mothers received a non-balanced rating using this measure in contrast to 62% of the mothers in the control group. Participants in this study represented a wide range of SES backgrounds from extremely impoverished families to families from the upper-class. In addition, child ages ranged from two weeks to 67 months of age. Given this high level of heterogeneity, the investigators examined potential differences between the clinical and control groups and found no statistically significant differences on measures of maternal age, maternal levels of education, marital status, infant age, infant gender or infant birth order. The control group in this study consisted in part of infants who were hospitalized for non-psychiatric related illnesses. The high levels of stress involved in having a hospitalized infant could account for a lapse in healthy functioning of these parents and therefore may account for the relatively high non-balanced rate which was evident in the control group. Similarly, Coolbear and Benoit (1999) found that mothers of failure to thrive (FTT) infants (n = 30) were significantly more likely than mothers of normally developing infants (n = 27) to hold non-balanced representations of their infants as measured by the WMCI. In this study 86% of mothers of FTT infants had non-balanced working models versus 45% of the mothers of normally developing infants. No significant differences were found between the two groups on measures of maternal age, maternal education, SES, marital status, number of children in the family, infant age, infant gender or infant birth order. While these studies do not explicate the causality of the relationship, they do begin to shed light on the nature of maternal representations of individual children as they manifest in a relational context.

In an analysis of the impact of representations on actual parenting behavior, Slade, Belsky, Aber and Phelps (1999) examined maternal state of mind with regard to attachment as assessed by the AAI, maternal representations of the relationship with the toddler as assessed by the PDI and actual parenting behavior in a sample of 125 first born sons and their mothers. Participants were all martially intact, Caucasian families from working- and middle-class backgrounds. A principal-components analysis of the 16 PDI variables generated three factors (joy-pleasure/coherence, anger, and guilt) and findings indicated that AAI typology was significantly related to these PDI factors. This finding lends support to the hypothesis that a parent's representational model of an individual child should in part be related to her own past relationship history. Additionally, both the PDI and the AAI were found to be related to actual positive and negative parenting behavior. Using a factor analytic approach, these researchers defined positive parenting as composed of positive loadings on the variables positive affect, sensitivity, and cognitive stimulation and a negative loading on detachment. Negative parenting was defined as positive loadings on negative affect and intrusiveness. Specifically, mothers who scored higher on the joy-pleasure/coherence factor of the PDI tended to demonstrate more positive and less negative parenting behaviors and mothers who scored higher on the anger factor tended to engage in less positive mothering. Similarly, mothers rated as autonomous on the AAI tended to demonstrate less negative parenting behaviors. Contrary to the authors' predictions, however, the PDI was not found to be statistically significant in the mediational model testing the effect of the AAI on parenting behaviors. This is an important finding and suggests that these constructs are explaining different parts of the variance and may be uniquely contributing to actual parenting behaviors.

Furthermore, these results appear to support the work of vanIjzendoorn (1995). In his meta-analysis of studies examining the link between AAI and maternal responsiveness he found only a modest effect size linking these two constructs. Taken together, these studies suggest that measures which capture the unique parental representation of a specific child may in fact provide additional explanatory power in our understanding of actual parenting behaviors with that child.

More recently, researchers have begun to examine the impact of maternal representations in special populations. Specifically, Sayre, Pianta, Marvin and Saft (2001) used a modified version of the PDI to examine the impact of maternal representations of children with cerebral palsy on feeding sensitivity and expressed maternal delight during feeding sessions (n = 58). Children ranged in age from 16 to 52 months and carried diagnoses of mild to severe cerebral palsy. Sensitivity and maternal delight were rated using 7-point global rating scales and overall interrater reliability was adequate (i.e., 81% agreement within one point on the 7-point scale). Results indicated that a mother's representation of her child was related to feeding sensitivity and expressions of maternal delight during feeding sessions and that this finding was statistically independent of the impact of the child's developmental skills and abilities on maternal sensitivity. Button, Pianta, and Marvin (2001) report similar results in a sample of chronically ill (e.g., cerebral palsy and epileptic; n = 77) and normally developing (n = 35) children using an adapted version of the PDI (Pianta et al., 1993). Child ages ranged from 14 to 52 months in a primarily Caucasian sample. Maternal parenting behavior was rated using 7-point global rating scales during a problem-solving task and overall interrater reliability was adequate (i.e., >80% agreement within one point on the 7-point scale). Their findings

suggested that maternal representations of individual children were significantly related to maternal behavior with that child during a problem solving task. Both of these studies highlight the importance of the parent's working model of the child to actual behaviors with that child in various contexts.

The importance of context: The impact of domestic violence on parenting behaviors

While the research examining representational models of relationships continues to substantiate the theoretical position that internal representations of children are powerful predictors of parental behaviors with those children (Aber et al., 1999; Slade et al., 1999; Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994), equally compelling data exist in the literature documenting the overwhelming effect of various psycho-social risk factors on parenting behaviors (Fitzgerald et al., 1995). Among these is the often devastating impact of domestic violence on a mother's ability to parent her children (DeVoe & Smith, 2002; Levendosky, Lynch, & Graham-Bermann, 2000). In fact, given the profoundly negative effects that violence of this nature can have on a woman's mental health and daily functioning (Astin, Lawrence, & Foy, 1993; Astin, Ogland Hand, Coleman, & Foy, 1995; Vitanza, Vogel, & Marshall, 1995), it is likely that a woman's experience of domestic violence will also have a significant impact on her parenting behaviors with a given child. Thus, it is hypothesized here that, in addition to the role of representations on maternal parenting behaviors, domestic violence will also significantly impact the ability of mothers to parent effectively.

Levendosky and Graham-Bermann (2001) have articulated a compelling theoretical argument which supports this hypothesis. In a review of the literature on the

impact of violence in general, and domestic violence in particular, on the adaptive functioning of women they conclude that, "Trauma perpetrated by another person, as opposed to experiencing severe illness or natural disasters, is simultaneously a psychological, physiological and relational event (p. 29)." Referencing Herman's (1992) seminal work postulating the overwhelming negative effects violence has on a person's ego capacity to self-regulate, they also cite the growing body of evidence indicating that prolonged exposure to violence has enduring effects on the human hypothalamic-pituitary-adrenal axis and the neurotransmitters within this system. Additionally, they explicate the relational crisis that violence, and especially violence perpetrated from within a relationship, creates. Specifically, they discuss Kuleshynk's (1984) notion of traumatic bonding to a captor as being particularly important in considering the extreme interpersonal dynamics which can evolve in the face of ongoing abuse and forced isolation. Thus, these authors theorize that the combined impact of these factors on a woman's overall functioning and specifically her parenting ability is likely to be quite powerful.

The empirical evidence testing this hypothesis to date, however, has largely been limited by small sample sizes and results have been mixed. A few studies have examined parenting stress in families experiencing domestic violence and have found both higher levels of stress in these families versus families not experiencing violence as well as an association of these variables with child behavior problems (Holden & Ritchie, 1991; Levendosky & Graham-Bermann, 1998; Wolfe, Jaffe, Wilson, & Zak, 1985). In a similar finding, Levendosky and Graham-Bermann (2001), applied an ecological model to their analysis and found that domestic violence was related to parenting style. However, this

relationship was mediated by psychological functioning and marital satisfaction. In a much larger study, McCloskey, Figueredo, and Koss (1995) examined a sample of 365 mothers of school aged children and found that within families experiencing domestic violence mothers tended to demonstrate less warmth with their children compared to non-violent families. They also found that children whose mothers were battered were at greater risk for child abuse. In contrast to these findings, evidence also exists which suggests that women can in some cases maintain positive parenting behaviors even in the context of abuse (Holden, Stein, Ritchie, Harris, & Jouriles, 1998; Levendosky et al., 2000; Sullivan et al., 1997). Holden and Ritchie (1991), for example, in a sample of 37 mothers living in domestic violence shelters and 37 community matched mothers, failed to find differences between battered and non-battered women in several domains of parenting including physical affection and punishment.

To date, much of the literature documenting the relation between domestic violence and parenting behavior has used maternal self-report data as the primary parenting measure. This poses methodologic problems in that many factors may impact a mother's assessment of her own parenting including social desirability and maternal self-esteem level (Levendosky & Graham-Bermann, 2000). More recently researchers have begun to use behavioral observation measures in an effort to obtain a more objective assessment of parenting outcomes in domestic violence populations (Levendosky & Graham-Bermann, 2000). In an innovative study using this methodology, Levendosky and Graham-Bermann (2000) coded mother-child interactions in 95 families with latency-aged children. They found that battered women demonstrated significantly less warmth during a semi-structured interaction task than their non-battered counterparts.

Using similar methodology, Ritchie and Holden (1998) observed mother child interactions in a sample of 58 battered and non-battered, low income mothers of 3 to 7 year old children. They found that battered women, unlike non-battered women, did not demonstrate higher levels of physical affection in response to lower levels of self-reported parenting stress. That is, battered women demonstrated similar levels of physical affection (e.g., warmth) toward their children regardless of whether they were experiencing high or low levels of parenting stress. In explaining this finding, the authors hypothesize that mothers experiencing domestic violence may demonstrate a kind of pseudo-warmth toward their children which is designed to alleviate the mother's anxiety and but is not likely to be beneficial to the children. They argue that whereas the capacity to demonstrate genuine warmth is likely tied to levels of stress in a mother's life and consequently the psychological resources the mother has available, "pseudo-warmth" does not require the availability of such resources and therefore is unaffected by parenting stress level. An alternative explanation of this finding, however, may be that the coding system designed and utilized by these researchers failed to capture "warmth" and, instead, captured a different construct than is implied by the term "warmth." That is, the construct they have termed "pseudo-warmth" may be entirely distinct from the construct of interpersonal parental warmth. In that case, a revision of their coding scheme may have yielded different results.

A further neglected area in the study of the impact of domestic violence on parenting behaviors is the specific role played by psychological abuse in this process. This leaves a significant gap in our understanding of the impact of various forms of abuse on parenting behaviors. While physical abuse has received much more attention in the

literature than psychological abuse, it is widely accepted that these two forms of abuse co-occur at high rates (Follingstad, Rutledge, Berg, Hause, & Polek, 1990; O'Leary, 1999). Furthermore, women frequently report that the psychological abuse they have endured has a much more negative impact than the physical abuse (Follingstad et al., 1990). Psychological abuse has been shown in the literature to induce a diverse range of negative symptoms including overwhelming feelings of fear and shame, stress reactions, substance abuse, depression, PTSD and anxiety (Aguilar & Nightingale, 1994; Arias, 1999; Arias & Pape, 1999; Dutton, Goodman, & Bennett, 1999; Follingstad et al., 1990; Kahn, Welch, & Zillmer, 1993; Marshall, 1996; Sackett & Saunders, 1999). Thus, it is likely that the experience of psychological abuse impacts a woman's ability to parent in unique and powerful ways.

Despite the relative paucity of quantitative empirical research in this area, it is clear from the qualitative data analyses that women who are victims of domestic violence are acutely and painfully aware of the impact of the abuse on their parenting and their children (DeVoe & Smith, 2002; Levendosky et al., 2000). In their qualitative study of women's reports of the impact of domestic violence on their parenting Levendosky, Lynch and Graham-Bermann (2000), provide a quote from one mother who states, "I think it [the abuse] has hindered it [her parenting]. I'd be upset with him [partner], and sometimes take it out on Lisa when I shouldn't. If she got me mad, I'd yell at her or get upset (p. 255)." This evidence for a conscious awareness of the impact of the abuse on their parenting and their children for domestic violence victims is especially relevant to the present investigation. While an expectant mother may, in what is likely a universal phenomenon, wish for a positive relationship with her child and possibly even form a

relatively healthy prenatal representation of that child, the reality of the abusive situation and its impact on the developing infant will likely become painfully evident in the post-partum period.

Hypothesis and rationale of present investigation

The present investigation will contribute to the literature in the early parenting and infant mental health fields by examining the impact of prenatal working models on observed parenting behaviors at the one year birth date. There is a relative paucity in the literature of examinations of parental representations of children at any age, and research efforts which focus on prenatal representations are especially rare. Similarly, studies utilizing observer-rated parenting measures are also rare. This poses methodological issues in that the use of parent-reported measures of parenting behavior are subject to social desirability effects. This study uses observer-rating methodology thereby eliminating the social desirability factor. In addition, parenting behaviors were assessed in a laboratory setting which affords a greater level of standardization compared to home observations. Finally, this study provides a unique contribution to the literature in that it examines the relation between prenatal representation and parenting behavior using a prospective, longitudinal approach.

Additionally, this investigation will extend the current work in the domestic violence literature by examining the effects of domestic violence on parenting behaviors during the infancy period. The vast majority of the empirical work in this area has been conducted with school-aged and adolescent children and has also used parent-reported measures of parenting behavior. This study thus offers a unique contribution to this area

of the literature by focusing on parenting in the infancy period using observer-reported methodology.

It is hypothesized here that a mother's internal working model of her unborn infant and her level of exposure to domestic violence will be related to her observed parenting behaviors at one year of age. Specifically, it is hypothesized that there will be 1) a main effect wherein the prenatal maternal representational typology as measured by the WMCI (Zeanah et al., 1994) will predict to maternal parenting behavior in a laboratory free-play protocol at one year of age; 2) a main effect wherein specific subscale domains of the prenatal representational model as measured by the WMCI (Zeanah et al., 1994) will predict to parenting behavior in a laboratory setting at one year of age; and 3) a main effect of both physical abuse and psychological abuse as measured by the SVAWS (Marshall, 1992) and PMWI (Tolman, 1999), respectively, on parenting behavior in a laboratory setting at one year of age.

METHOD

Participants

Participants of the current study included 168 women who are a subsample of a larger, longitudinal study examining child risk and protective factors in a group of mothers approximately half of whom reported experiencing domestic violence at the Time 1 interview. The Time 1 wave of data collection included pregnant women who were recruited through flyers posted at local agencies and clinics in a medium-sized, Midwestern city. Adult women in their last trimester of pregnancy who were between 16 and 40 years of age were invited to participate in the study. Potential participants were screened to insure that they had been involved in a romantic relationship for at least six weeks during the pregnancy and that they were able to speak and understand English well enough to complete the questionnaires and participate in the interviews. Participants represented a range of cultural and ethnic groups. Sixty-one percent of the women were Caucasian, 27% were African-American, 5% were Latina/Hispanic, 5% were Bi-racial, and 3% were other minority groups.

The Time 2 wave of data collection was conducted when the children were approximately one year of age. At the Time 2 interview 44% of the sample were single women who had never been married, while 44% of the women were married, and 12% were separated or divorced. The average age of the mother at the Time 2 interview was 26.6 years (SD = 4.9), and the average age of the child was 1.1 years (SD = .11). Participants also represented a range of educational and socio-economic groups. Thirty-nine percent of women had a high school education or less, 33% had some college, 13% had a trade school or associates degree, 8% had a bachelor's degree, and 7% had some

graduate school experience or a graduate degree. Monthly incomes ranged from $267 to $10,000 (mean = $2168; *SD* = $1697).

Of the 38 participants who participated in the Time 1 wave of data collection but not the Time 2 wave, six refused further participation in the study, ten could not be located, eleven were unable to complete the laboratory portion of the protocol and, in one case, the child died. In addition ten of the videotaped sessions could not be coded due to technical difficulties in the video recording process. T-tests and chi-square analyses were conducted to test for demographic differences between the 38 participants from the ongoing longitudinal study who did not participate in the present study and the 168 participants who did participate in the current study. No significant differences were found in marital status, ethnicity, maternal age, or level of education between the two groups. In addition, the groups did not differ in terms of reported exposure to domestic violence at the time of the Time 1 interview. However, the women who participated in this study (n = 168) tended to have higher monthly incomes at Time 1 compared to women who did not participate in this study but were enrolled in the larger longitudinal study (n = 38; p = .03). Specifically, participants in the present analysis had an average monthly income of $1920 (*SD* = 1530) whereas non-participants (n = 38) had an average monthly income of $1380 (*SD* = 1335). Thus, the women participating in this study represent a higher level of socio-economic status relative to the women who did not participate in the Time 2 protocol.

Procedures

Initial Screening

Brief phone screenings were conducted by trained research assistants during the initial contact by the potential research participant with the project office. The screening included an assessment of the woman's age, relationship status and domestic violence status. Following the recruitment of approximately 50% of the sample, the Conflict Tactics Scale (Straus, 1979) was administered during the initial screening contact. Ultimately, this screen was used to exclude women who had not experienced domestic violence during pregnancy in order to ensure an over-sampling of women experiencing domestic violence. There were no demographic differences between the excluded women and the research participants.

Time 1: Pregnancy Interview

When the woman was in her last trimester of pregnancy the Time 1 interview was conducted in either the research office or in her home, according to her preference. Participants were informed about anonymity and confidentiality and completed an informed consent form. A semi-structured interview (described below) was then administered by a trained research assistant. Interviews were audio-recorded and transcribed. Women were paid $50.00 for their participation at Time 1. The Working Model of the Child Interview (WMCI) was administered at this time.

Retention Procedures

Participant retention efforts began with a phone call approximately one week after the infant's due date to confirm each infant's date of birth. Subsequently, participants were contacted by mail every 90 days between interviews. Mail correspondence included a letter and a form which was completed by the participant with their current address, phone number, and names and numbers of friends or family members who could be contacted in the event that we could not reach the participant. A self-addressed and stamped envelope was included in this mailing. In addition, a contract with the US Post Office was established such that they generated and sent a postcard with current addresses for those participants who had moved and registered a new address. When participants did not return their information sheet within three weeks, they were contacted by phone. In the event that the participant could not be reached directly by phone, we contacted the friends and/or family members who had been identified by the participant for recontact purposes. Participants received ten dollars in monetary compensation for returning their information forms at each recontact time point.

Time 2: Mothers and their One-Year Olds

When their infants were approximately 12 months old, women were contacted to schedule the Time 2 interview. Mothers and infants were interviewed at the laboratory for the Time 2 procedures. Observations of mother-infant interaction behaviors were conducted at this time. In addition, both the SVAWS and the PMWI were administered. Trained research assistants administered the maternal interviews while the infants were

cared for in a separate playroom. Women were paid $75.00 and given a baby gift worth $8.00 after completion of the Time 2 interview.

Measures

Maternal Representation of the Infant

The Working Model of the Child Interview (WMCI) (Appendix B) (Zeanah et al., 1990) was used to assess the maternal representation of her unborn child. The WMCI is a semi-structured interview designed to capture a parent's internalized perceptions and subjective experience of their child's personality and relationship with that child. In the present investigation the WMCI was modified for use in the third trimester of pregnancy by changing the wording of the interview from present to future tense. Benoit (1997) has demonstrated the validity and reliability of this interview for use in the prenatal period. The WMCI required an average of one hour to administer and interviews were audio-taped and transcribed for coding purposes.

The coding scheme used in this investigation was drawn primarily from the system developed by Zeanah and Benoit (1993) (Appendix A) for use with the WMCI. Each subscale coded from the narrative transcripts was scored along a 5-point interval scale reflecting the characteristic level of that quality across the entire interview. In general scales were scored such that higher values reflected the greater presence of that quality. The one exception was the Maternal Self Efficacy scale. As described below, a score of 3 on this subscale represents the ideal level of the construct.

In addition to the representational typology rating, fourteen scales were scored, each falling into one of three broad categories. 1) *Qualitative codes* are essentially content-free and are designed to capture specific aspects (both manifest and latent) of the parent/infant relationship; 2) *Content codes* are based on specific details and information the mother provides about her infant's future behavior and her thoughts and feelings related to parenting her infant; and finally, 3) *Affective tone codes* reflect the differential "affective coloring" of the representation.

Two graduate-level research assistants received specialized training in coding the WMCI using a coding system developed by the authors of this measure (Zeanah et al., 1994). The subscale data were rated on five-point interval scales. Thus, inter-rater reliability was calculated using Pierson's *r* correlation coefficients for all subscale data. However, ratings of representational classifications were rated using a categorical coding scheme. Accordingly, both percent agreement and Cohen's kappa were calculated for typology classifications. Reliability analyses were completed on 26 interviews (13% of the sample). Pearson *r* correlation coefficients for the subscales ranged from .44 to .87 as follows: Richness of Perception = .70, Openness to Change = .58, Intensity of Involvement = .87, Coherence = .64, Acceptance = .83, Caregiving Sensitivity = .75, Infant Difficulty = .72, Fear for Infant's Safety = .44, Maternal Self Efficacy = .55, Joy = .64, Anger = .74, Anxiety = .59, Indifference = .39, Depressive Affect = .83. Percent agreement for typology classification was 96%, yielding a kappa of .94. Differences in both subscale ratings and typological classifications were resolved by conferencing, and the resulting consensus ratings and classifications were used in the analyses. The use of conferencing as a resolution technique has been established in the literature as best-

practice protocol in this field (Benoit, Parker et al., 1997). The following is a brief description of each of the WMCI scales being used in the present investigation.

Richness of Perceptions. This scale is designed to measure the degree to which the infant seems to be known to the caregiver. Beyond a simple quantitative word-count, the scale captures the degree to which a parent elaborates a picture of who the infant is. Thus, caregivers may provide a rich but succinct description of their infant and would therefore score at the high end of this scale. Alternatively, caregivers who are verbose, but ultimately shallow, in their descriptions would score at the low end of this scale.

Openness to Change. The openness to change dimension measures the level of flexibility the caregiver demonstrates in her ability to be open to new information about the infant. The frequent, and sometimes profound, normative shifts inherent in infancy require a certain level of flexibility on the part of the caregiver to incorporate new information in her understanding of her child and her ability to relate to her child. Thus, an ongoing process of discovery on the part of the caregiver is a critical component of the parent-infant relationship.

Intensity of Involvement. The overall level of caregiver psychological preoccupation is captured with this scale. Like the other scales in this section, this scale is content-free in that many factors (e.g., the health status of the infant, overwhelming life circumstances of the caregiver) may influence its manifestation. However, these are not coded per se. Instead, the scale captures the overall level of involvement of the caregiver to the infant regardless of the specific circumstances surrounding the involvement and regardless of the affective valence of the involvement (e.g., anger, joyfulness). Caregivers scoring at the high end of the scale may seem emotionally enmeshed or

joyfully engrossed with their infant. Caregivers scoring at the low end may seem to be reacting to the infant's needs by detaching emotionally from the infant or may be so preoccupied with other issues that they are unable to attend psychologically to the infant.

Coherence. The coherence scale captures the degree to which the caregiver relates information and stories about the infant in a manner which is logically presented and easy to follow. Caregivers scoring high on this dimension provide a well organized flow of ideas and emotions about the infant and the relationship. Caregivers whose narratives are contradictory, unintegrated, and difficult to understand are scored at the low end of this scale. Additionally, caregivers who are unable to support their global descriptions with congruent specific examples, or who provide contradictory information, are scored at the low end of this scale.

Acceptance. The caregiver's acceptance of the infant's behaviors and needs are measured here. Infancy is inherently a time of intense neediness on the part of the infant and caregivers must be able to subordinate their own needs to those of the infant. This scale captures the degree to which the caregiver is successful in accomplishing this. Caregivers who describe pushing the infant to behave in a certain way (e.g., more or less independent) or who seem to reject the infant as a person would score at the low end of this scale. Alternatively, parents who can tolerate the challenges of early parenting while maintaining a positive sense of the infant as a person would score at the high end of this scale.

Caregiving Sensitivity. Caregiving sensitivity captures both the caregiver's recognition of and responses to the needs of the infant. This code in part reflects the caregiver's ability to recognize that the infant will have a variety of emotional states and

experiences. Parents scoring at the low end of this scale may either be unaware of or indifferent to the needs and experiences of the infant. Alternatively, parents scoring at the high end of this scale will describe an ability to be tuned into and responsive to the many physical and emotional needs of their young infant.

Infant Difficulty. This scale captures the caregiver's perception of how difficult this infant will be to take care of and relate to. As in the richness of perception scale, no effort is made to determine the objective difficulty this particular infant might present to a caregiver. Rather, it is the caregiver's subjective view of the difficulty of the infant which is measured here. Ratings at the low end of this scale reflect a view of the infant as easy to care for, while ratings at the high end reflect a view that the infant will be a burden to care for.

Fear for Safety. Captured in this scale are the irrational fears on the part of the caregiver of the potential loss of the infant. Descriptions of caregiver "worry" about the infant are reflected in this code. At the high end of this scale are caregivers who are preoccupied with worries and fears about the safety of the child. At the low end are caregivers who have no fears or very few fears about the safety and well-being of the child.

Maternal Self-Efficacy. Adapted from Slade, et al.'s (1994) *Confidence and Competence* scale, this code captures maternal levels of competence and self-efficacy in her role as a mother. In contrast to the other subscales used in this analysis, the midpoint of this scale (i.e., a score of 3) represents the ideal, or most healthy and adaptive, representation for this construct. Mothers receiving scores in the midrange of this scale are able to recognize and identify both strengths and limitations of their mothering

abilities but, overall, express feelings of competence in this role. In contrast, low scores on this scale represent a lack of maternal confidence in the parenting role whereas high scores indicate inflated and unrealistic levels of self confidence which are presumed to be defensive responses to underlying feelings of inefficacy. In the present analyses, codes of 2 and 4 were collapsed and codes of 1 and 5 were collapsed so that the highest possible code was a 3, which represented the most adaptive representations of self as mother.

Joy, Anger, Anxiety, Indifference, Depressive Affect. The affective tone of the interview is captured through the coding of these five affective scales. In each case the score reflects the degree to which the rater perceives the particular affective tone "colors" the caregiver's representation of the infant. Low scores reflect the absence of the affective quality in the narrative, while high scores reflect extreme coloring of the representation by the particular affective quality. Scores are not based on what the parent says per se, but rather, the rater's perception that the representation is characterized by each particular affective quality.

Typology

In addition to the fourteen individual scales, each narrative was assigned to one of three categories, which reflect different representational typologies.

Balanced. Balanced representations are typified by emotional warmth and acceptance. Parents scored in this category can imagine and describe being sensitively responsive to the needs of their infant. Their narratives are coherent and easy for the reader to follow. Descriptions of their infants are richly detailed and they seem to have access to a range of emotional material concerning their infants. Frequently parents in

this category will describe normative feelings of the anticipation of some degree of difficulty and challenge in their relationship with their infant. However, these concerns do not overwhelm their ability to think about parenting the infant in a sensitive manner and do not dominate their overall perception of their infant. On the whole, these parents seem to "know" their infant in an essential way, and provide convincing details which convey their involvement in the relationship and delight in the infant.

Disengaged. Disengaged representations are characterized by an emotional aloofness and distance from the infant. Descriptions of the infant are frequently shallow and give the impression that the parent does not view the infant as a person in her own right. Parents in this category tend to demonstrate an emotional deactivation when it comes to their relationship with the infant. While the parent may describe the infant in a manner which idealizes the infant or the relationship, they are often unable to provide convincing support for these descriptions with specific episodic memory accounts. Repressed hostility is often evident in the descriptions of the infant but takes the form of cool distancing and rejection of the infant and her needs.

Distorted. Distorted representations reflect a pervasive distortion in the representation of the infant or the relationship with the infant. Distorted narratives tend to be incoherent, in the sense of providing confused, contradictory, or bizarre descriptions of the infant and the relationship. Parents scored in this category tend to be confused and unsure about their relationship with the infant. Alternatively, they may demonstrate overwhelming anxiety in response to the infants' perceived needs and experiences.

Assessment of Domestic Violence

Psychological Maltreatment of Women Inventory (PMWI - Short Version) (Tolman, 1999) (Appendix C)

The PMWI is designed to assess the level of psychological abuse the woman is experiencing from her partner. The current study used a modified version of the PMWI which consists of a shortened version of the original 58-item scale. The PMWI-S is composed of 14 items, including two scales: isolation/domination and verbal/emotional. Examples of items include "my partner used our money or made important financial decisions without talking to me about it" and "my partner blamed for his problems." Respondents are instructed to rate the frequency of their experiences of abuse on a 5-point scale ranging from "Never" to "Very Frequently." Tolman (1999) reported coefficient alphas of .88 for the isolation/domination subscale and .92 for the verbal/emotional subscale. Using the entire scale, coefficient alphas for the current sample were .94 for the current or most recent partner and .97 for the next most recent partner.

Severity of Violence Against Women Scales (SVAWS) (Marshall, 1992) (Appendix D)

The SVAWS is a 46-item questionnaire designed to assess both violent behaviors and threats the woman has experienced from her partner. The scale is composed of nine categories of abuse including symbolic violence, threats of mild violence, threats of minor violence, threats of moderate violence, threats of serious violence, mild violence, minor violence, moderate violence, serious violence, and sexual violence. Examples of items include "destroyed something belonging to you," "punched you," and "demanded

sex whether you wanted to or not." Respondents are instructed to rate their experiences of abuse on a 4-point scale ranging from "Never" to "Many Times." Using a community sample, Marshall (1992) reported coefficient alphas ranging from .86 for symbolic violence to .96 for mild and serious violence. Coefficient alphas for this sample were .95 for the current or most recent partner and .99 for the next most recent partner.

Assessment of Parenting Behaviors (Appendix E)

Four behavioral and two affective domains of maternal parenting behavior during an unstructured free-play segment of the laboratory session were assessed using the following scales: Sensitivity, Disengagement, Interfering Manipulation, Covert Hostility, Warmth, and Joy. All scales were scored using a five-point, interval, anchored rating system. Scales were designed such that higher scores reflected higher levels of that particular construct. Scales were adapted from three primary sources: Ainsworth (1971, 1974, 1978); Lyons-Ruth (1983) and Crittenden (1981). The Free Play segment lasted twelve minutes and was videotaped. However, only the last ten minutes of the segment were used for coding purposes in order to allow the dyads time to get settled with their possessions in the room (e.g., diaper bag, infant toys from home, etc.).

Coders were undergraduate students who received intensive training and ongoing supervision by a lead graduate student (C.D.) who served as the gold standard. Maternal parenting behaviors were rated on interval scales. Thus, all reliability measurements were calculated using Pierson's *r* correlation coefficients. Initial reliability was calculated for the five-point scales using a sub-sample of 23 taped segments and ranged from .83 to .88. After establishing initial reliability, double coding was conducted at

regular intervals to minimize rater drift. In the cases where drift became evident, additional segments were double coded until a high level of reliability was re-established. Final reliabilities ranged from .81 to .83 for the six variables as follows: Sensitivity = .83; Disengagement = .81; Over-controlling/Interfering/ Intrusiveness =.83; Covert Hostility =.83; Warmth = .82; and Joy = .81.

Sensitivity. Sensitivity reflects the mother's ability to perceive and accurately interpret the infant's signals and to respond to them appropriately and promptly. Sensitivity requires not only that the mother is physically and emotionally accessible to the infant, rather than ignoring or neglecting, but that she is alert to subtle aspects of the infant's signals. Sensitive responses are well-timed, reflect empathy with the infant's needs and feelings, and even when limit setting is called for, involve behavior that will enhance infant's security, comfort, and development. In this manner, a sensitive mother provides a "supportive presence" for her infant.

Disengagement. This is primarily a behavioral code and measures the degree to which the mother is disconnected from or lacks of involvement with the baby and the play interaction. This behavioral domain becomes manifest and is observed through the mother's ability to pace her interactions with those of the infant (e.g., responds to infant's cues in a timely manner), her body position with regard to the infant, and the degree to which she attempts to initiate activities with the infant or follow the infant's lead (versus leaving the infant to "fend for herself"). Note that quality of involvement is not rated here such that a mother who handles her baby roughly throughout the session would receive a similar score as the mother who is consistently attentive to her infant's cues during the session.

Over-controlling/Interfering Manipulation/Intrusiveness. This scale does not refer to appropriate limit-setting or structuring, but instead measures the degree to which the mother's behavior interferes with rather than facilitates the infant's goals. Mothers scoring at the high end of this scale may exhibit controlling behavior such as forcing the infant's hand to push a shape through the shape-sorter or intrusive behavior such as roughly manipulating the infant's body. Verbal behavior is coded here if it is used in a way which is either unusually loud and intrusive to the infant or if the mother makes frequent demands on the infant to follow the mother's lead.

Covert Hostility. This scale measures the degree to which the mother's communications to and interactions with the infant express covert hostility. Examples of this may include sarcastic comments, mocking the child, teasing behaviors which frustrate the child and/or do not end in allowing the child to achieve the goal, and discrepant communications. Discrepant communications involve a discrepancy between aspects of mother's behavior. Mother may demonstrate an abrupt change in behavior such as showing a false or exaggerated smile followed in quick succession by a look of anger or disgust or hostility. Frequently, mothers who demonstrate these kinds of behaviors will demonstrate signs of feeling rejected by the infant or needs for the infant to emotionally support her. Examples are comments such as, "you don't want to play with me do you," and repeated demands that the child kiss her or play with her.

Warmth. This scale measures the quality of mother's affection toward the infant. It captures the degree to which the mother expresses affection toward the infant in a way that brings pleasure to the baby. This can be manifest in the mother's tone, the content of her verbalizations, her gentle patting or stroking of the infant, as well as hugging, kissing,

and facial expressions (appropriate smiles). Extent is defined in terms of both intensity and frequency. Mother's scoring at the high end of this scale tend to exhibit a strong degree of enthusiasm in interacting with the infant and pride in their infant's behaviors.

Joy. This scale measures the amount and quality of the mother's joyfulness during the interaction with the baby. Although somewhat related to warmth, this scale emphasizes slightly different qualities than warmth. The emphasis in this domain is on the degree of smiling, laughing, playing, enthusiasm, and "pure" enjoyment that the mother displays. Mothers that score high on this scale should show high levels of playfulness, glee, excitement, wonder, or amazement while interacting with the infant. Observers may get a sense that the mother can really share in the infant's excitement and joy over the toys—like she is a kid again. One example of the difference between Warmth and Joy is that a mother may be consistently tender and affectionate (and therefore high on warmth), but demonstrate more subdued or muted joyful affect or subdued playfulness or enthusiasm (and therefore lower on joy).

RESULTS

Four sets of results are presented. Initially, the dependent variable which included six maternal interactive behaviors was factor analyzed both for data-reduction purposes and as a response to the multi-colinearity present among these variables. Three factors emerged from this analysis. Secondly, using these factors, ANOVA analyses were conducted to test the hypothesis that prenatal working models were related to maternal interactive behaviors at one year of age. Thirdly, regression analyses were employed to test the hypothesis that specific representational subscales would be related to maternal behaviors. Fourthly, the variables of both physical and psychological abuse were regressed in three independent analyses onto the parenting behavior factors. Throughout these analyses, missing data were accounted for using listwise deletion.

Factor analysis of maternal interactive behaviors

Correlations among the six maternal interactive variables were calculated and ranged from -.55 to .80 (see Table 1). As summarized in Tables 2 through 4, an exploratory factor analysis was employed using a principal component analysis with varimax rotation. Communalities ranged from .72 to .96 among the 6 parenting variables. Examination of the scree plot solution revealed three primary factors. Eigenvalues were 2.88, 1.64, and .58 for factors 1 through 3, respectively. Factor 1 represents a positive parenting construct and includes the engagement, joy, warmth and sensitivity variables. Scores for this factor were derived by averaging the four scale scores. Factor 2 represents a controlling parenting construct and includes only the controlling/interfering/ intrusiveness variable. Similarly, factor 3 represents a hostile parenting construct and

includes only the covert hostility variable. Internal consistency for the positive parenting factor was measured using Cronbach's Alpha and yielded a coefficient of .82. Factors 2 and 3 were single-variable factors and, thus, reliability analyses were not conducted on these factors. Overall, the three variables accounted for 85% of the variance in the 6 behavioral codes. Factor 1 scores were created by averaging the component scale scores.

Table 1

Correlations Among Maternal Interactive Behaviors

	Sensitivity	Engagement	Controlling	Covert Hostility	Warmth	Joy
Sensitivity	1.0					
Engagement	.44**	1.0				
Controlling	- .37**	.32**	1.0			
Covert Hostility	- .55**	.02	.36**	1.0		
Warmth	.80**	.44**	- .27**	- .54**	1.0	
Joy	.47**	.46**	.15	- .10	.55**	1.0

** *correlation is significant at the 0.01 level*

Table 2

Unrotated Factor Ratings and Communalities of Maternal Interactive Behaviors

	Factors			
	1 Positive Parenting	2 Over-Controlling Parenting	3 Hostile Parenting	Communalities *Extraction* (*Initial* set at 1.0)
Sensitivity	.92	-.11	-.01	.86
Engagement	.54	.68	.00	.75
Controlling/Interfering/ Intrusiveness	-.29	.81	-.45	.95
Covert Hostility	-.62	.51	.56	.96
Warmth	.93	.00	.00	.86
Joy	.64	.49	.24	.72

Figure 1

Scree Plot Representing Factor Solution for Parenting Variables

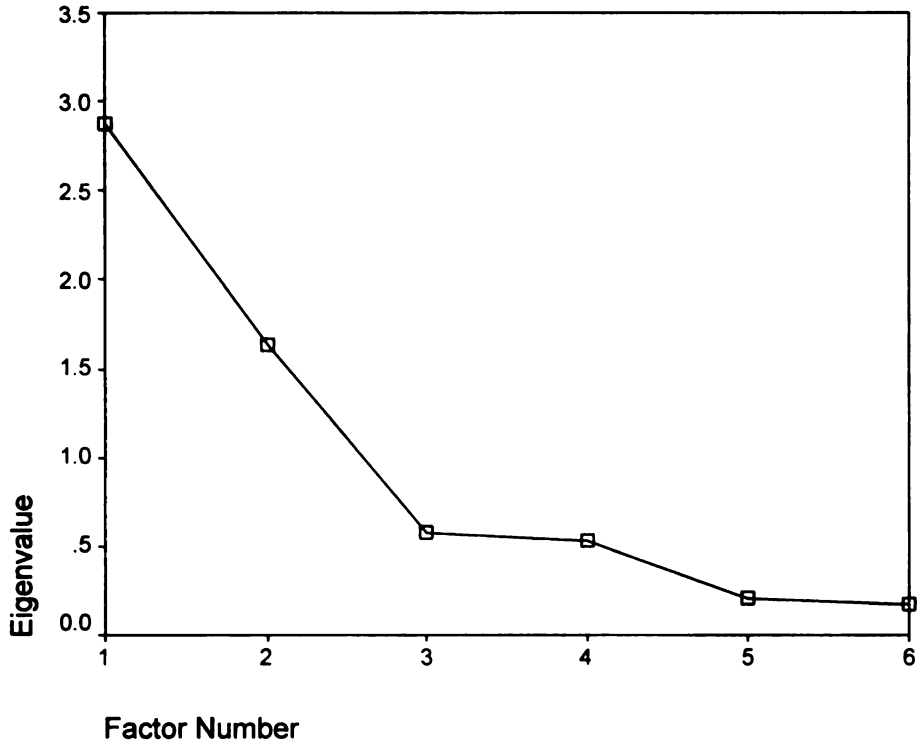


Table 3

Rotated Factor Ratings of Maternal Interactive Behaviors*

	Factors		
	1 Positive Parenting	**2** Over-Controlling Parenting	**3** Hostile Parenting
Sensitivity	**.68**	-.54	-.34
Engagement	**.77**	.00	.39
Controlling/Interfering/Intrusiveness	.01	.21	**.95**
Covert Hostility	-00	**.97**	.15
Warmth	**.72**	-.53	-.25
Joy	**.85**	.00	.00
Eigenvalue	2.88	1.64	0.58
% Variance Explained	47.9	27.3	9.7

* Items in bold are included in the factor scores.

Relation of representational typology and maternal interactive behaviors

Next three one-way analyses of variance (ANOVA's) were conducted to test the hypothesis that mothers holding distinct prenatal representations of their unborn infants (i.e., balanced, disengaged or distorted) would differ in terms of their behavioral interactions with those children at one year of age (see Table 4). Specifically, it was hypothesized that mothers holding balanced representations would display more positive parenting behaviors with their children as compared to mothers holding either distorted or disengaged representations. In addition, it was predicted that mothers holding disengaged representations would display higher levels of controlling behaviors and that mothers holding distorted representations would display higher levels of hostile behaviors with their children. Of the 164 women, 86 were categorized as holding a balanced representation of their child, while 46 were found to hold a disengaged representation and 32 were found to hold a distorted representation.

Table 4

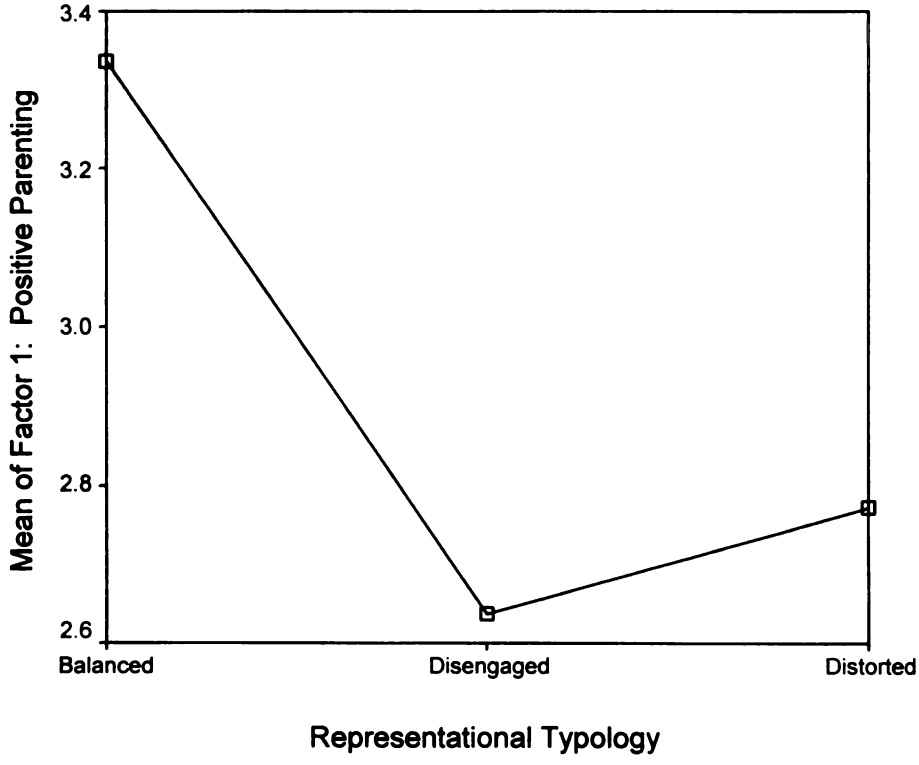
ANOVA Comparing Parenting Factors
with Representational Typology

		Sum of Squares	df	Mean Square	F	Significance	Eta Squared
Positive Parenting							**.12**
	Between Groups	**17.37**	**2**	**8.68**	**12.04**	**.007**	
	Within Groups	116.104	161	.72			
	Total	133.47	163				
Controlling Parenting							**.04**
	Between Groups	**15.44**	**2**	**7.72**	**3.97**	**.021**	
	Within Groups	3.12	161	1.94			
	Total	328.39	163				
Hostile Parenting							**.06**
	Between Groups	**14.56**	**2**	**7.23**	**5.73**	**.004**	
	Within Groups	204.67	161	1.27			
	Total	219.22	163				

Positive Parenting. The omnibus F test was used to determine whether differences in positive parenting were evident among women holding distinct prenatal representations. This model was significant at the .05 level (F=12.04). A Bonferroni post-hoc analysis revealed that mothers with balanced representations tended to display more positive parenting than mothers holding either disengaged or distorted representations ($\bar{x}$ balanced = 3.34, $\bar{x}$ disengaged = 2.64, $\bar{x}$ distorted = 2.77, $p<.05$) (see Figure 2). However, no differences were found in positive parenting between the distorted and disengaged groups in the post-hoc analyses.

Figure 2

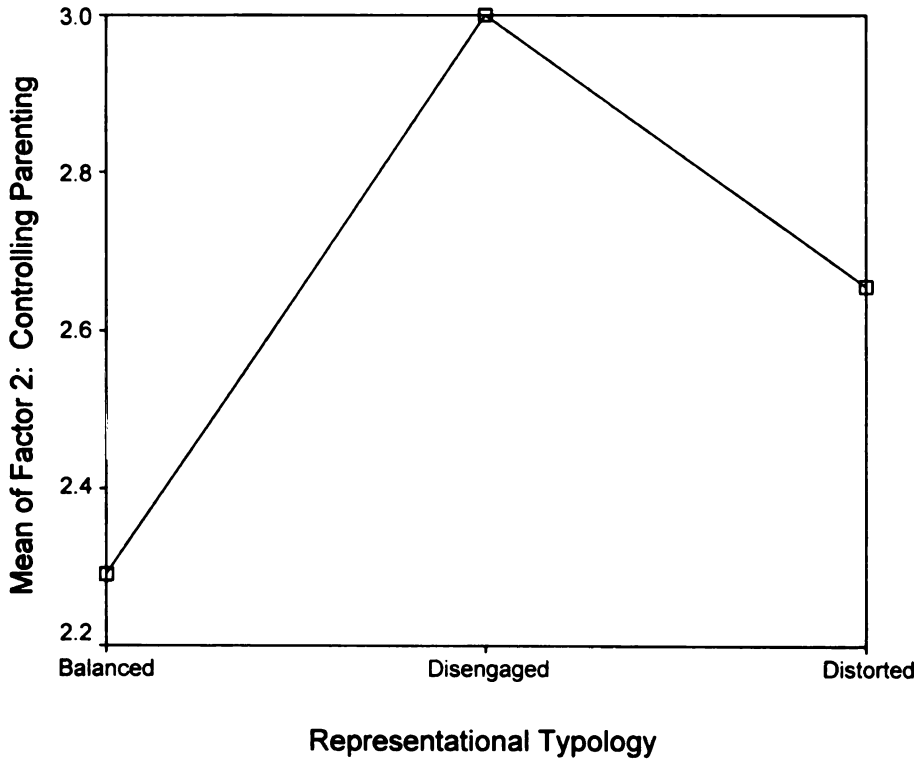
Means Plot of Positive Parenting Factor by Representational Typology



Controlling Parenting. Similarly, the omnibus F test was used to determine whether differences in controlling parenting were evident among women holding distinct prenatal representations. This model was also significant at the .05 level (F=3.97). A Bonferroni post-hoc analysis of this model revealed that mothers with disengaged representations tended to display higher levels of controlling parenting than mothers holding balanced representations ($\bar{x}$ balanced = 2.29, $\bar{x}$ disengaged = 2.66)(see Figure 3). No differences were found, however, between the balanced and distorted or between the distorted and disengaged groups.

Figure 3

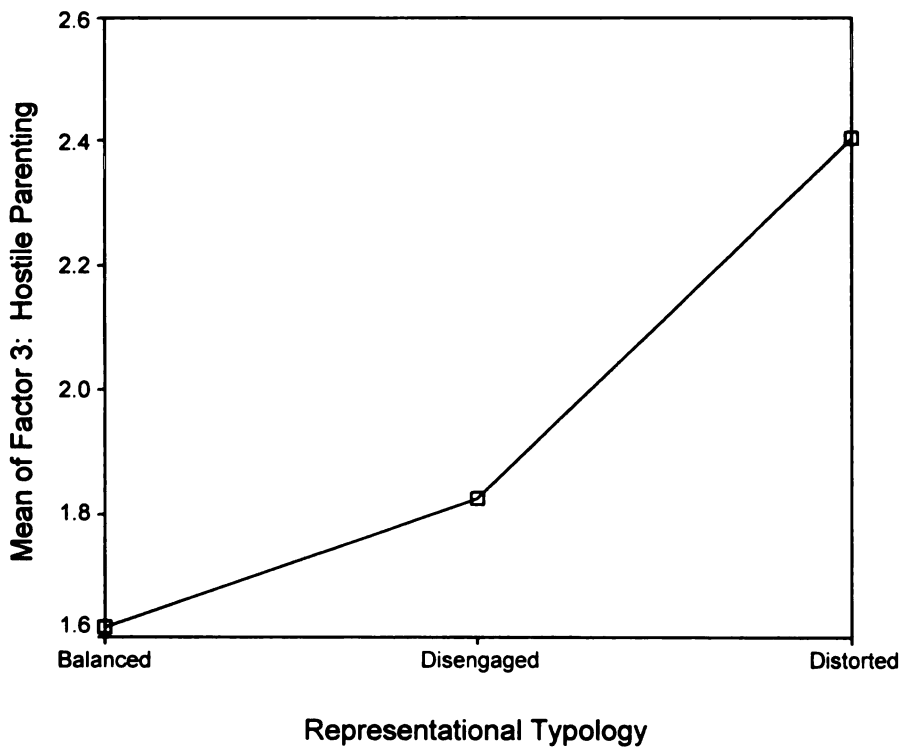
Means Plot of Controlling Parenting Factor by Representational Typology



Hostile Parenting. In a third ANOVA analysis, the omnibus F test was used to determine whether differences in hostile parenting were evident among women holding distinct prenatal representations. This model was also significant at the .05 level (F=5.73). A Bonferroni post-hoc analysis of this model revealed that mothers with distorted representations tended to display higher levels of hostile parenting than mothers holding balanced representations ($\bar{x}$ balanced = 1.62, $\bar{x}$ distorted = 2.41)(see Figure 4). Additionally, there was a trend in the data suggesting that mothers holding distorted representations tended to display higher levels of hostile parenting when compared to disengaged representations ($\bar{x}$ disengaged = 1.83, p=.08). No differences were found between the balanced and disengaged groups.

Figure 4

Means Plot of Hostile Parenting Factor by Representational Typology



Relation of select representational subscales and maternal interactive behaviors

Three multiple regression analyses were conducted to test the hypotheses that select representational subscales would impact maternal behavioral interactions with their one year old child (Table 8). In the first model the subscales of richness of perceptions, openness to change, acceptance, caregiving sensitivity and joy were regressed onto the positive parenting factor. While the overall model was significant at the .05 level (F=7.1, adjusted r^2 = .16), none of the beta coefficients reached levels of significance. In the second model, the subscales of fear for infant safety and maternal expressed anxiety were regressed onto the controlling parenting factor. This model was not found to be significant. Finally, in the third model, the subscales of infant difficulty and maternal expressed anger were regressed onto the hostile parenting factor. Like the first model, the overall model was found to be significant at the .05 level (F = 3.29, adjusted r^2 = .03). However, none of the beta coefficients reached levels of significance.

Relation of domestic violence exposure and maternal interactive behaviors

Three multiple regression analyses were conducted to test the hypotheses that exposure to physical and psychological abuse during the first year of their child's life would impact maternal interactions with their one year old child. Both the physical and psychological abuse variables were modeled continuously and regressed, in separate analyses, on all three of the parenting factors. None of the models reached levels of significance, suggesting that neither physical nor psychological abuse was associated with parenting behaviors in a free-play laboratory session in this sample.

DISCUSSION

Given the complexity of the parent-child relationship it is likely that many factors contribute to a mother's parenting behaviors with any one given child. This study examined the impact of both intra-psychic (maternal mental representation) and exogenous (exposure to domestic violence) factors on a mother's parenting behaviors with her one year old child in a laboratory, free-play setting. Using a factor analytic approach, the parenting outcome variables were analyzed and found to represent three primary parenting factors; positive parenting, controlling parenting and hostile parenting. The central findings which emerged from these data suggest that maternal representation as measured by *composite typological categories* during the prenatal period are related to observer-rated maternal interactions with that child at one year of age. However, maternal representation as measured by *independent subscale scores* was not found to be related to maternal interactions. Thus, when the representational typology was "deconstructed" into its subscale components, the relation with maternal behavior was lost. A second central set of analyses in this investigation concerned the impact of physical and psychological abuse on parenting behaviors in a laboratory, free-play setting. Contrary to the hypothesis made here, results revealed that exposure to physical or psychological abuse at some point during the first year of the child's life, did not impact parenting behaviors for this sample.

Prenatal representations and observed parenting in infancy

Drawing from the rich literature in both the child and adult attachment fields, the empirical work examining parental representations of young children emerged initially

from the temperament-environment debates (Wok, Zeanah, Garcia-Coll, & Carr, 1992). At that time temperament was measured almost exclusively using parent-report data of infant behavior. Consequently, a number of researchers began to test the hypothesis that the construct being described in the literature as early manifestations of infant "temperament" was, in fact, the manifestation of powerful psychological projections of parents onto their unborn children. Zeanah and colleagues (Zeanah et al., 1986a; Zeanah et al., 1987; Zeanah et al., 1990) were some of the first to examine this question and their early work demonstrated a correspondence of parental ratings of their infant's temperament as assessed prenatally, with later parental ratings of infant temperament measured several months after birth.

In more recent years, the theoretical construct of parental representations has been empirically tested by examining the links between representations and observer-rated measurements of actual parenting behaviors. The resulting data have demonstrated significant correspondences between these two constructs as measured longitudinally in infancy (Slade et al., 1999) and also as measured concurrently in special populations (Button et al., 2001; Sayre et al., 2001). While no studies to date have examined the working model construct in a sample of victims of domestic violence, the finding that prenatal representational typology is related to parenting behaviors at one year of age is consistent with the literature linking maternal representations of their toddler-aged children with maternal parenting behaviors in non-abused groups (Aber et al., 1999; Button et al., 2001; Sayre et al., 2001; Slade et al., 1999). Specifically, the present analyses found that in this sample of both abused and non-abused women, mothers holding balanced representations of their unborn infants tended to display more positive

parenting behaviors than mothers holding disengaged or distorted representations. In addition, mothers holding disengaged representations tended to display more controlling parenting behaviors with their children while mothers holding distorted representations tended to display more hostility in their interactions with their children.

Representation as measured in these analyses is defined such that mothers who hold balanced representations of their infants tend to describe their relationship with their infant as loving and nurturing. Mothers in this group tend also to describe their infant in a manner which conveys to the listener that they view their infant as having a distinct personality and that they are open to discovering new information about their infant as the child grows and develops. In addition, mothers holding balanced representations of their infants tend to describe a positive emotional connection which includes an element of joyful emotional engagement with them. Mothers holding disengaged representations of their infants, in contrast, tend to describe an affectively deactivated representation in their narratives. While they may idealize the infant in their descriptions, they are unable to support this idealized view with concrete examples of their infant's personality or of their relationship with the infant. Instead, there is a marked degree of emotional disconnection from the child and they seem to lack a sense of attunement to the child's own needs and desires. On the other extreme of emotional engagement, mothers holding distorted representations tend to describe a high level of emotional activation with regard to their infant and their relationship with their infant. Generally, however, the emotional lability they demonstrate in response to questions about their child, has little to do with the nature of their child's genuine personality. Instead, their narrative descriptions leave the listener with the impression that the child's real self is lost in the storm of the

mother's emotions and, at times, is the lightening rod which inadvertently catches the powerful energy the mother is emitting. These mothers too, seem to lack a level of attunement to the genuine needs and desires of the child.

Thus, the finding that mothers who are rated as holding balanced representations of their infants tended to exhibit higher levels of positive parenting behaviors is both theoretically consistent and intuitively clear. In these analyses, positive parenting is defined as parenting which is warm, sensitive, joyful and engaged. By definition, balanced representations, unlike disengaged and distorted representations, allow for an open and flexible conceptualization of the child. It is this flexibility which allows a parent to be attuned to the genuine emotions and behaviors of the child and then to react behaviorally in a manner which is consistent with what the child needs at that moment. The non-balanced types, in contrast, are more rigidly constructed and will likely restrict the ability of the parent to respond in an adaptive manner relative to the child's behaviors because the representational "lens" screens out information which is not consistent with the parent's predetermined view of the child. Thus, parents are limited in their ability to perceive the genuine needs of the child and, consequently, their ability to respond in an attuned manner to those needs. Sensitivity, by definition, requires this ability, and interpersonal warmth too, in its genuine manifestation, is dependent on an ability to be emotionally open to the needs of another.

Slade (Slade et al., 1999) reported findings similar to these in a sample of 125 mothers and their firstborn infants. In that study mothers scoring high on the Joy/Pleasure/Coherence factor of the PDI which is the most similar to the balanced category of the WMCI, tended to demonstrate more positive parenting behaviors with

their children than mothers who earned low scores on that factor. Additionally, mothers in that study who earned elevated scores on the Anger factor which is most similar to the distorted category of the WMCI, were found to demonstrate lower levels of positive parenting behaviors with their children compared to those receiving lower scores on this factor. This finding is consistent with the findings in the present study in which differences were found between the balanced and non-balanced groups on positive parenting.

The second finding in this set of analyses was that mothers holding disengaged representations of their infants tended to be more controlling with them as compared to mothers holding balanced representations. In other words, mothers who, by definition, are emotionally *disengaged* in terms of their representation of their infant tended to be behaviorally *overly engaged* with them. While this finding seems counterintuitive, it is, in fact, theoretically consistent. That is, mothers who earned high scores on the controlling/interfering/intrusiveness subscale tended to take more of a *teaching* stance when interacting with their infants. They frequently spent a good deal of time showing their child how to "correctly" use the toys in the playroom and were relatively unwilling to follow the child's lead in play. Thus, while they were clearly behaviorally engaged with their children, these mothers did not evince high levels of emotional engagement and, in fact, did not seem to be attuned to the desires and needs of their children in this unstructured play session.

In contrast with the disengaged group, mothers holding distorted representations of their infants did evince a high level of emotional engagement with them. However, the nature of their engagement was hostile and angry. Thus, the emotional activation and

anger which is a salient feature of the narratives of mothers holding distorted representations was also evident in their behavioral interactions with their children. In addition, there was a trend in these data such mothers holding distorted representations were more likely to express covert hostility when compared to mothers holding disengaged representations. It is possible that with a larger sample size this finding may have reached a level of statistical significance. Overall, these findings are similar to results published by Slade (Slade et al., 1999), wherein they found that mothers with low scores on their PDI joy/pleasure/coherence factor tended to be more negative in their parenting compared to mothers with elevated scores on this factor.

It is notable that the present analyses were conducted on a sample of both abused and non-abused mothers, many of whom come from low socioeconomic status backgrounds. This is especially important given the finding that mothers holding representational typologies which tend to contain anger as an inherent component of the representation also tended to display more covert hostility in their interactions with their children. It is possible that exposure to violence within the context of the romantic relationship and the hardships involved in raising a child or children under impoverished conditions could have had an impact on both the internal representations and the subsequent parenting behaviors of these mothers. While this study did not examine these questions, future research should attempt to discern the impact of domestic violence and socioeconomic status on these constructs.

To date there have been no published studies which examine maternal representations as measured prenatally and their links to later observed parenting behaviors. Thus, in addition to its contribution to the understudied field of parenting in

the context of domestic violence, this study also offers a significant contribution to the literature in this area by examining the relations between these important constructs.

The results reported here are consistent with the theoretical construct of internal representations as they have been conceptualized and described in the literature. Specifically, working models are thought to be relatively stable templates which guide thoughts, feelings and behaviors within relationships (Collins & Read, 1994). The dynamics of this process are partly driven by an individual's expectancies about how the other person in the relationship is likely to behave. In the present analysis pregnant mothers' representational "expectancies" (i.e., representations) of how their infants would behave after birth were found to be significantly related to their observed parenting behaviors with those children fully one year after the birth of the child. While the data reported here are correlational in nature and can not reveal underlying causal relationships, the fact that the maternal representation was measured during pregnancy and thus prior to the mother having any actual interactions with the infant lends support to the hypothesis that there may be a causal relationship in this process.

Deconstructing the representation

In contrast to the analyses examining the relation between WMCI typology and parenting behaviors, the regression analyses using WMCI *subscale data* in relation to parenting behaviors yielded no significant findings in any of the three models. It is possible that the structural design of the WMCI measure itself may account for the lack of significant findings in these analyses. Unlike the PDI which does not yield typological categories, but is instead composed of multiple scales scored dimensionally and then

combined using factor analytic methodology, data from the WMCI is scored independently at both the subscale and typology levels. While each subscale is theoretically related to each of the typological categories, the relation of any one given subscale composite to the representational typology is not formulaic. That is, distinct combinations and statistical "weights" (i.e., beta weights) of subscale scores may form unique composites which warrant the same typological rating. For example, while narratives from mothers scored as distorted at the typology level of analysis almost always contain relatively high levels of affectively charged material, they may or may not receive high scores on the fear for infant safety subscale or the openness to change subscale. Therefore, two mothers could each be rated as holding distorted representations and yet their subscale score composition may be markedly different. Thus, while the current study yielded results which demonstrate a relation between prenatal representational typology and parenting behavior at one year of age, the subscale level of analysis using regression methodology failed to demonstrate a similar relation. In sum, while no empirical data currently exist in the literature examining representational data at the subscale level of analysis, this finding is consistent with the structural makeup of this particular measure. Although the combination of subscales which were regressed on the parenting factors in this analysis are theoretically related to each factor, the fact that the subscale composite is distinct for each individual mother may mean that one particular subscale combination and their relative beta weights can never adequately capture the variance of the sample as a whole.

Similar to the previously described findings, it is also possible that the nature of the sample characteristics of this study (e.g., domestic violence exposure and low

socioeconomic status), had a bearing on the lack of findings in these analyses. Specifically, it is possible that if this sample were subdivided into distinct groups relative to domestic violence exposure (i.e., abused versus non-abused) or relative to socioeconomic status, that clusters of subscales would emerge as significant for the various groups. For example, fear for infant safety may be a particularly salient and common factor in the representations of women who are living with domestic violence, and this may well impact their parenting interactions with that child. While these analyses are beyond the scope of this investigation, future research should explore these issues as well.

Domestic violence and representations

The set of analyses which were conducted in an effort to explicate the relation between domestic violence and parenting behaviors failed to demonstrate a statistically significant relationship between these constructs. Specifically, two independent regression analyses were conducted which regressed both the physical abuse and the psychological abuse variables onto each of the parenting factors. Neither physical nor psychological abuse was found to be related to any of the three parenting factors.

The literature examining the relation between exposure to domestic violence and parenting behaviors is extremely limited and has been fraught with methodological problems including small sample sizes and the use of self-report measures of parenting abilities. However, in one notable study conducted by Levendosky and Graham-Bermann (2000) they found that among mothers of latency-aged children (n = 95), women who had been exposed to domestic violence displayed less observer-rated

parental warmth than did mothers who had not been exposed. McCloskey, Figueredo, and Koss (1995) reported similar findings in a sample of school aged children (n = 365). They also reported that mothers exposed to domestic violence in their sample tended to demonstrate less maternal warmth than did mothers who had not experienced domestic violence. However, the construct of maternal warmth in this study was measured using child reports of their mother's behaviors. In contrast to these findings, Holden and Ritchie (1991) reported no differences between battered women and non-battered women in multiple domains of parenting including physical affection and punishment. In sum, the limited empirical research which has been conducted in this area has yielded mixed results.

In contrast, the qualitative research conducted in this area has demonstrated that women are quite aware of the impact of domestic violence on their parenting abilities and that they struggle to parent effectively despite this abuse (DeVoe & Smith, 2002; Levendosky et al., 2000). Thus, the finding that exposure to domestic violence was not related to either positive or negative parenting in this sample is striking. One significant methodological limitation of this study which may have contributed to the lack of findings in this area is the lack of temporal precision in the measurement of domestic violence exposure. That is, the measures utilized in these analyses simply assessed whether the woman had been exposed to abuse in the year preceding the interview; the timing of the abuse was not assessed. Thus, one woman could have been abused eleven months prior to her child's first birthday and then left that relationship, whereas another woman may have been currently in an abusive relationship. The measure captured the number and type of abusive events; it did not assess its recency. Therefore, in the case of

this example, if both of these women had been exposed to the same level of abuse, they would have received the same domestic violence score, even though it is likely that the impact of the abuse on current parenting behavior would have been stronger for the woman who remained in an abusive relationship.

A second methodological limitation of this study was that parenting behavior was assessed for a very short period of time (i.e., ten minutes) in a laboratory setting. While the nature of the sample made this a necessity, it is possible that women were able to exhibit their highest level of parental functioning in this setting for this limited period of time. It may be that had observations been conducted for longer periods of time in the home environments of these families, different results would have emerged.

Despite these limitations, the current study contributes to the literature in this field in several ways. Firstly, methodological problems which have existed in previous studies were overcome through the use of a larger sample size and the direct measurement of parenting behaviors versus the use of self-report measures. Secondly, this study extends the examination of parenting behaviors by examining this construct in the infant-toddler period of development whereas previous studies have focused exclusively on older children. And, finally, this study examined the relation of both physical and psychological abuse to parenting.

Limitations

The present study used a sample of convenience which was manipulated to ensure equal numbers of abused versus non-abused participants and, therefore, random sampling of participants was not a part of the methodology utilized in this analysis. Thus, the

sample of women who participated in this study represent a unique segment of the population in terms of both their domestic violence status and their socioeconomic status. Consequently, these results cannot necessarily be generalized to other segments of the population.

In addition, as described above, the observational data included in these analyses were collected in a laboratory setting and not in the family's home environment. Thus, the demand characteristics of the setting itself may be a factor in the mother's and child's behaviors. That is, it is possible that some mothers and children felt uncomfortable in this unfamiliar setting and that their behaviors when interacting with each other were impacted as a result. The balance between standardization of procedures and naturalistic observation is always an issue in this type of research. In the current study, the risk to the experimenter of obtaining observational data in many homes where domestic violence was occurring precluded the ability to obtain naturalistic data.

Clinical and policy implications

The findings from this study are relevant both to clinical work with the families of young children and to the policy level of intervention. Most importantly, it is clear from these data that women form representations of their infant children during pregnancy and that these early representations are related to their behavior with those children one year later. Thus, it seems especially important that professionals working in the early intervention field understand this important window of time in the life of a mother and strive to intervene with pregnant women who show signs of being at-risk for attachment difficulties with their infants *prior* to the birth of those infants. At the policy level this

might be achieved by funding mental health professionals to work collaboratively with obstetricians to identify and treat women at risk for relationship problems with their unborn infants. This would necessitate the development of screening tools which could be based, in part, on the Working Model of the Child Interview (Zeanah et al., 1993). While the relation between maternal exposure to domestic violence and increased incidence of child abuse (i.e., extreme negative parenting) has been documented in the literature (McCloskey et al., 1995), the finding in this study that such exposure has implications for a mother's ability to provide *positive* parenting is less well-documented but has significant clinical implications. Specifically, it is widely accepted in the infant mental health literature that a parent's ability to experience a joyful connection with her infant is critical to the healthy development of that infant (Stern, 1985). Therefore, the finding that the experience of domestic violence interrupts this parenting process is of critical importance to professionals working with mothers who are raising young children in the context of exposure to domestic violence. This finding suggests that a clinical focus on the mother's ability to engage with her infant in a joyful manner may be necessary in situations of domestic violence. At the policy level, these data suggest that funding for domestic violence shelters should include a focus on parenting interventions which move beyond the didactic teaching of basic "parenting skills." Instead, programs which encourage mothers to find ways to connect with and enjoy their infants and young children are necessary.

APPENDICES

APPENDIX A

MOTHER-INFANT STUDY WORKING MODEL OF THE CHILD INTERVIEW CODING MANUAL

(1/25/96)

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QUALITATIVE (CONTENT FREE) FEATURES OF THE REPRESENTATION

There are six scales that are used to characterize the qualitative features of the caregiver's representation of the infant: (1) richness of detail, (2) openness to change, (3) intensity of involvement, (4) coherence, (5) caregiving sensitivity, and (6) acceptance. These scales are largely content free, in the sense that they do not concern the specific characteristics the caregiver perceives and describes about the infant, but rather, the coder's judgment about how these characteristics are reflected in the narrative. These scales also describe features of the representation that may have a variety of different affective tones.

One of the most important considerations in using these scales is adapting the ratings to the age of the infant being described. Descriptions receiving the highest ratings on the richness of detail scale will be much fuller about a thirty month old than about a two month old, for instance. Similarly, descriptions of the personality of a young infant ought to be more open to change than the same descriptions about an older toddler. Thus, ratings on these scales are made relative to what might be expected of other infants of the same age.

RICHNESS OF PERCEPTIONS

This scale is used to measure the poverty or richness of the caregiver' s perceptions of the infant and the relationship with the infant. Rather than merely a count of the number of words used, it is also how much the words are used to elaborate a sense of "who" the infant is. Caregivers who succinctly but richly describe details about their infants score at the high end of the scale, in contrast to caregivers who say a lot that does not convey much about the infant' s personality, feelings, and behavior and who score at the lower end of the scale. Caregivers scoring at the higher end of the scale seem to be attentive to their infants' preferences and characteristics, to have thought about their infants, and to know their infants in some essential way. Caregivers descriptions at the lower end of the scale lack variety and may seem repetitive, narrowly focused, or uninformative because they do not add to the general picture of the infant. N.B. No attempt is made to determine whether or not the caregiver is describing the "real" infant. Richly detailed descriptions that seem fantasy-based score high on this scale.

1-None

Poverty of detail about the infant' s personality, feelings, and behavior is striking throughout the interview. There is a pervasive sense of the infant as unknown, either because the caregiver has little or nothing to say about the infant in response to probes (e.g., "I don' t know" without elaboration in response to direct questions about the infant) or because despite saying a great deal, the caregiver has little to say about his/her perceptions of the infant.

2-Limited

Details about the baby are few or relatively unelaborated, or seem stereotyped in quality. The caregiver seems to know the infant somewhat, although not to have thought much or noticed much about the infant' s characteristics as an individual. Therefore, adjectives and stories about the infant are limited. The caregiver may also be extremely focused on only one or two narrow domains of the infant' s personality and behavior. Caregivers who provide voluminous detail, but only about the infant' s feeding behavior or irritability and crying, would be included in this rating.

3-Moderate

A moderate amount and variety of richness about the baby throughout, or despite variability at various points in the interview, there is a moderate amount of richness and variety overall.

4-Considerable

The infant is described in detail as an individual. Details about the infant add fullness to the general sense of the infant and the caregiver' s relationship with the infant. Adjectives to describe the infant and the caregiver' s relationship with the infant are provided. Richly detailed perceptions, even if not convincingly derived from objective characteristics and behaviors of the infant, score at least this high on this scale.

5-Extreme

Richness of perceptions and elaboration of detail about the infant in a variety of domains are striking and consistent features of the caregiver' s descriptions of the infant. The infant is noticed and described as an individual in full and rich detail throughout the interview.

OPENNESS TO CHANGE

This scale is used to measure the flexibility of the representation to accommodate the new information about the infant. Given the ambiguity of infant behavior and the rapid changes accompanying development in the first few years of life, openness to change in the representation of the infant is an important part of the parental process of discovery. Ratings at the high end of the scale indicate that the descriptions of the infant convey an openness to change and modification in the light of new information about the infant. Caregivers may even develop and incorporate new insights about the infant during the interview itself. Flexibility is not equivalent to uncertainty: the descriptions may be sure and still open. At the lower end of the scale are descriptions that are rigid and seem closed off to the possibility of change and accommodation.

1-None

Rigidity of descriptions of the infant is striking and consistent throughout. There is a sense that new information is or would be actively resisted in the service of maintaining a particular view of the infant and the caregiver' s relationship with the infant. No real evidence of malleability is apparent.

2-Limited

Although not completely closed off to the possibility of change, descriptions of the infant are still stereotyped and/or rigid and seem likely to be relatively impervious to new information.

3-Moderate

Descriptions of the infant and the caregiver' s relationship with the infant are neither unusually rigid nor usually open. There is simply a moderate amount of flexibility and openness throughout, but no real sense of discovering the infant.

4-Considerable

In general, there is some sense of an active process of discovery of the infant by the caregiver. This process seems to include the possibility of modifying descriptions of the infant as new information becomes available. There may be examples of the caregiver developing a new understanding of, appreciation for, or perspective on the infant as the interview progresses.

5-Extreme

Openness to change is a striking and consistent feature of descriptions of the infant. There is a sense that new information about the infant will be welcomed and accommodated, even if the descriptions are otherwise assured. A new understanding of, appreciation for, or a new perspective on the infant results during the interview itself.

INTENSITY OF INVOLVEMENT

This scale is used to assess the amount of caregiver psychological preoccupation with the infant and/or the caregiver' s psychological immersion in the relationship with the infant. Obviously, many factors may influence intensity of involvement (e.g., presence of siblings or health status of the infant), but these factors are not taken into consideration when rating caregiver intensity of involvement. As with the other scales, the variable in question is not a direct measure of caregiver behavior with the infant, but instead an attempt to determine the intensity of psychological involvement. At the high end of the scale, caregivers convey a clear sense of psychological involvement with their infants. The affective tone of this high involvement may vary from anxious preoccupation to joyful intoxication, but there is no mistaking the caregiver' s psychological involvement. At the lower end of the scale, caregivers seem uninvolved either because of psychological detachment from the infant or because of the caregiver' s seeming preoccupation with other concerns.

1-None

Lack of intensity of the caregiver' s involvement with the infant is a striking and consistent feature of the interview. The caregiver is uninvolved with the infant, either because of psychological distance from the infant or because of the caregiver' s preoccupation with other concerns.

2-Limited

The caregiver' s involvement with the infant is consistently limited, though not absent entirely. There are aspects of the infant or the caregiver' s relationship with the infant that at least mildly preoccupy the caregiver, but overall involvement is limited.

3-Moderate

The caregiver conveys a moderate amount of involvement with the infant overall. That is, the caregiver is clearly affectively involved with the infant, although not to any striking or unusual degree.

4-Considerable

The caregiver is intensely involved in concerns about the infant and the relationship with the infant, but the infant is not completely preoccupying the caregiver. Other concerns may still be evident to some degree.

5-Extreme

The caregiver is clearly and consistently affectively engrossed in the infant to a striking and unusual degree. The interview clearly conveys a sense of the caregiver as absorbed by concerns about the infant and the relationship with the infant. The affective tone of this involvement may vary considerably, as described above.

COHERENCE

This scale is derived from and essentially analogous to the Coherency of Record Scale used in scoring the Adult Attachment Interview (Main and Goldwyn, 1984). It attempts to measure the overall coherency of ideation and feeling in the caregiver' s representation of the infant. Essentially this refers to a well organized and logical flow of ideas and feelings about the infant and the caregiver' s relationship with the infant. Incoherences include descriptions that are confused in the sense of difficult to understand, contradictory, particularly when this is unnoticed and unintegrated, or irrelevant or bizarre, in the form of non-sequiturs. Trouble staying with the topic or diversions away from what is asked about are indicators of incoherence. Coherence also refers to the believability of the caregiver' s descriptions of the infant and the relationship with the infant. Inability to support global descriptions with examples or sweeping and doubtful generalizations (e.g., a two year old who is never upset) lower the rating on this scale.

1-None

Descriptions of the infant and the caregiver' s relationship with the infant are so confused, contradictory, and/or bizarre that they cannot be understood without great effort. Virtually all references to the infant are vague or inconsistent or unresponsive to probes. The basic description of the infant and the relationship with the infant is incoherent.

2-Limited

Although interview responses are understandable with effort, nevertheless, a striking number of confusing, contradictory, or bizarre descriptions of the infant and the caregiver' s relationship with the infant characterize the responses. Particular areas may be incoherent, but this is not as pervasive as in 1.

3-Moderate

There is average coherence throughout the interview. Statements about the infant and the caregiver' s relationship with the infant are reasonable clear; though there may be a few notable lapses about specific issues.

4-Considerable

Coherence is clearly above average in the caregiver' s descriptions of the infant and the relationship to the infant. Confusion, contradictions, or odd descriptions may be present but only to a limited degree and do not obscure a generally clear and consistent view of the infant.

5-Extreme

Exceptional thoughtfulness and clarity characterize the caregiver' s descriptions of the infant and the relationship with the infant. Specific examples support general descriptors and virtually all are direct, straight-forward, and responsive to probes.

CAREGIVING SENSITIVITY

This scale is used to measure the overall caregiving sensitivity to the infant as revealed in the interview. Caregiving sensitivity is here considered a content domain of the caregiver's representation of the infant. As such, it is rated based on the caregiver's descriptions of his/her recognition of and responses to the infant's own needs and affective experiences. Ratings at the high end of the scale indicate that the caregiver perceives the infant as experiencing a variety of emotional states and biological needs. Further, the caregiver's responses appear to be consistent patterns of sensitive caregiving. One is impressed by the caregiver's recognition of and respect for the infant as a separate but dependent individual. At the midpoint of the scale the caregiver reveals an average sensitivity to the infant. At the lower end of the scale, the caregiver fails either to recognize or to respond consistently and sensitively to the infant's needs.

1-None

The caregiver demonstrated striking and consistent insensitivity to the infant's needs and emotions (e.g., "he doesn't have any feelings," or "she never gets upset"). The caregiver may be unaware of, indifferent to, or even averse to the infant's emotional experience (e.g., in describing how he felt about her daughter bumping her head, one caregiver said, "It's her head and her and her problem!"). Responses to the infant may seem to result more from the caregiver's than from the infant's needs.

2-Limited

Caregiving sensitivity is largely lacking, although there are some instances of recognition and response to the infant's needs and emotions. Nevertheless, either there are notable examples of insensitivity, or caregiving sensitivity is generally lacking. One clear and striking example of gross insensitivity should result in a score no higher than 2 on this scale. Yelling at the baby without acknowledging guilt about it or asserting that it did not affect the baby counts as gross insensitivity.

3-Moderate

The infant's needs are noticed and responded to adequately for the most part. Problematic responses by the caregiver are balanced by instances of special sensitivity, or overall there is simply an average sensitivity to the infant's needs and experiences.

4-Considerable

Caregiving responses are especially sensitive to the infant's differing emotional reactions. Any lapses from this overall pattern are minor and may even be recognized as undesirable by the caregiver (e.g., "I just don't do too well with his whining - sometimes I even walk away for a minute before I can deal with him").

5-Extreme

Sensitive caregiving is striking and consistent feature of the caregiver's descriptions. The caregiver consistently demonstrates believable recognition and acknowledgment of the infant's needs and experiences.

ACCEPTANCE

This scale is used to assess the degree of acceptance of the child by the caregiver as revealed by the caregiver' s descriptions of the infant and the relationship with the infant. Infants present caregivers with an enormous array of challenges and responsibilities. For caregivers, this means subordinating one' s own needs to those of the infant and to some degree surrendering one' s own autonomy in order to promote psychological development in the infant. We are here determining the caregiver' s acceptance of the infant and all the challenges and responsibilities that caring for him/her entails. Some caregivers may find the infant' s needs for dependence easier to accept than the infant' s strivings for independence, or vice versa. Others may feel a more pervasive lack of acceptance of the infant in the form of pushing the infant to be a certain way or actually rejecting the infant as a person.

1-None

There is no evidence that the caregiver accepts the infant as an individual. In fact, the caregiver conveys the impression that he/she does not like the infant. This may be evident by resentment about caring for the infant, anger in response to the infant' s need for comfort, or a pervasive sense of aversion to the infant.

2-Limited

The caregiver demonstrates no more than a modest amount of acceptance of the infant. The caregiver may seem matter of fact about caring for the infant, but a sense of emotional coolness toward the infant is unmistakable. The caregiver may have some awareness of the limited acceptance of the infant but may justify it in terms of being good for the infant or concern about the infant being spoiled. Also included in this rating are caregivers who seem to be intensely pressured about their infant' s behaving/being a certain way.

3-Moderate

The infant is generally accepted by the caregiver, although not to any remarkable degree. There may be evidence of some ambivalence, at times accepting the infant and at other times resenting or withdrawing from the infant and the demands of caring for him/her. Overall, the ambivalence is contained and balanced. There may be a general sense of acceptance in the caregiver, but punctuated by a strong but not overwhelming need for the infant to behave/be a particular way.

4-Considerable

The infant is fairly consistently and fully accepted, although there is some direct or indirect evidence of strain in the acceptance. The strain may result from the burden of the infant him/herself, or from the caregiver' s sense of loss of control and autonomy. In any case, the strain is not a major characteristic of the interview as a whole and the caregiver seems to experience genuine pleasure in caring for the infant much of the time.

5-Extreme

Acceptance of the infant as an individual and the responsibilities his/her care entails is nearly complete. There is no evidence of resentment or conflicts about caring for the infant. The caregiver conveys explicitly or implicitly a sense of delight about caring for the infant.

CONTENT FEATURES OF THE REPRESENTATION

It would be difficult if not impossible to assess comprehensively with rating scales the content of the caregiver' s representation of the child. Our preliminary list included a large number of potential scales. At this point we have selected only two scales, each of which has a substantial literature supporting its clinical importance: infant difficulty and fear for safety. Obviously, we are not directly assessing any behavior in infant or caregiver, but rather, the degree to which infant difficulty and fear for safety are important features of the caregiver' s representation of the child.

Clearly, infant difficulty, as a content feature of the representation, may be independent of the qualitative scales of richness of detail, openness to change, engrossment, and coherence. It is necessary also to determine whether or not the caregiver has an irrational fear of loss of the infant through death. In the case of infants who are ill, this determination is made depending on whether or not the fear is rationally connected to the illness. When classifying the representation, it should be indicated after the classification that an irrational fear of loss of the infant through death is present by adding the symbol (F). This should be applied for any score of 3 or greater on the scale.

INFANT DIFFICULTY

This scale is used to rate the caregiver's perception of the infant as difficult to care for and to relate to. This includes direct statements by the caregiver about the infant as well as indirect indications that the infant is especially difficult. The attempt is not to ascertain how difficult the infant's behavior is in an absolute sense, but rather to measure how difficult the caregiver perceives the infant to be. Reasons for the difficulty vary considerably, but the reason for the perception of difficulty is not taken into account in rating this scale. Whether the child is considered difficult because of overactivity, moodiness, stubborn and willful defiance, or unsoothability, or because of a demanding medical or handicapping condition, may be important features of the representation, but they are not considered on this scale. Ratings at the high end of the scale indicate the child is perceived as burdensome, at the midpoint of the scale, the child is perceived as challenging, and at the low end of the scale the child is perceived as easy.

1-None

There is no indication that the infant is considered by the caregiver to be difficult. The infant may or may not be described as easy, but in any case, there is nothing to suggest that the infant is perceived as difficult by the caregiver.

2-Limited

There are no more than a few isolated aspects of the infant's behavior that are perceived as difficult. Overall, the infant is considered to be relatively easy to care for and to relate to.

3-Moderate

The caregiver perceives some aspects of the infant's behavior as challenging, but there is no indication that the infant is experienced as a burden. Overall, the infant's difficult behavior is perceived to be in the average and expectable range.

4-Considerable

Direct or indirect descriptions of the infant as difficult are prominent features of the interview. The infant is beginning to be experienced by the caregiver as burdensome.

5-Extreme

Descriptions of the infant as difficult is a major theme of the interview. The infant is considered to be so difficult by the caregiver as to be a definite burden.

FEAR FOR SAFETY

This scale is used to assess the irrational fear of loss of the child. The caregiver's descriptions of "worry" about the child are considered by the rater. At the low end of the scale, the caregiver may have no worries about the child or may worry about the child's feelings during separations but not worry about the child's health and safety. At the mid-range of the scale, the caregiver may worry at times about the child's health and/or safety but this worry is not pervasive and does not affect behavior toward the child to a significant degree. Scores may also be in this range if the worry is connected to a rational source (e.g., a sibling died). At the high end of the scale, the caregiver is preoccupied by concerns about the child's health and safety and behavior towards the child is affected (activities are limited because of low probability dangers).

1-None

The caregiver has no real worries about the child at all. Whether the caregiver is with the child or not, there is no evidence that worry or concern is apparent.

2-Limited

The caregiver has no real worries about the child's basic health and safety. There may be times when the caregiver worries about some other aspect of the child (e.g., whether he/she is happy), but these are not fears about the child's health or safety.

3-Moderate

The caregiver has some fears about the child's health and safety, but these fears are not pervasive, do not affect the caregiver's behavior with the child, and they are understandable in the context of the caregiver's experience (a previous child has died).

4-Considerable

There is clear evidence that the caregiver fears for the child's basic health and safety, and there is no apparent reason for the fear. Further, the parent's behavior towards the child is affected.

5-Extreme

There is clear evidence that the caregiver fears for the child's basic health and safety, and there is no apparent reason for this fear. Further, the parent's behavior toward the child is affected. In addition, the fear for the child's safety is pervasive and preoccupying to the caregiver.

REPRESENTATION OF SELF-AS-MOTHER/MATERNAL SELF-EFFICACY

(modified by Huth-Bocks from Slade et al., 1994, Pregnancy Interview Coding System)

This code is aimed at determining whether a mother experiences herself as a competent, efficacious parent. A mother's internal working model of herself as a competent parent may depend on the particular domain being considered (promoting emotional security, regulating infant's affect, promoting autonomy). It is believed that a mother's thoughts and feelings about herself as a mother will influence her representations and later behavior with the child. This rating focuses on the "self-as-mother" aspect of her internal working model and measures the degree to which the mother has a balanced/realistic representation of herself as efficacious.

Both content and style of presentation are evaluated for this code. Women will differ on the degree to which they are realistically confident in being a parent. Thus, a realistically competent mother will acknowledge her limitations but will be confident in her ability to love and take care of the child (i.e., balanced in her representations). Competence is defined here as both confident to cope with motherhood and its challenges and accepting of one's limitations at the same time. Mothers on either end of the scale are believed to be less "competent." In one extreme, a mother may feel totally incompetent and helpless and have difficulty seeing herself as a mother or as being a caregiver. In the other extreme, a mother may be overconfident and may not acknowledge her own limitations or normal challenges of motherhood. These women are believed to have an "illusion" of competence. Therefore, unlike most of the other WMCI codes, the mid-point here is seen as most adaptive and healthy.

It is sometimes difficult to distinguish between responses that underestimate self-efficacy and those that overestimate self-efficacy (the extremes), both of which are thought to reflect different defensive styles. One can often have the impression of a mixed style, where minimization and maximization coexist. Sometimes, the temptation may be to give a "balanced" score (the midpoint) in order to indicate presence of both. However, these instances do not accurately describe a truly balanced representation, but instead, indicate an inner struggle and tension. Therefore, it is important for coders to determine the more dominant presentation (either mainly underestimates or mainly overestimates abilities).

Coders should consider the entire WMCI transcript when coding this scale, i.e., overall themes and impressions. However, coders may want to pay particular attention to questions 1d, all parts of item 5, and all parts of item 9, 11b, 12, 14.

1. Total lack of self-efficacy: A mother receives a 1, the lowest point on the scale, if she experiences a total lack of confidence in her ability to mother her baby across a number of domains. She grossly underestimates her ability to cope with the demands of parenting and sees herself as helpless and unable to manage. She also greatly undervalues what she has to give the child, and does not recognize that her love and nurturance will be important for the baby. She may experience the future challenges of motherhood as insurmountable and does not seem to prepare herself in any way for the baby's birth (i.e., because preparation "won't make a difference anyway"). Mothers receiving this score may not be able to imagine having pleasurable experiences with her baby. Some mothers may represent the child as demanding and overwhelming her resources, which is a complement of her sense of helplessness.

2. Moderate lack of self-efficacy: A mother receives a 2 if she lacks a feeling of self-efficacy, but struggles to counter this feeling. She can imagine coping with demands of parenthood and may imagine some success, but her worry is evident. Mothers may acknowledge competence in some areas, but a more general feeling of incompetence breaks through, i.e., through

hesitations, qualifications, contradictions, etc... She doesn't fully acknowledge how much she has to give to her baby and in this sense, undervalues herself. However, her concerns are not so overwhelming as to prevent her from imagining pleasurable moments with her infant. She may describe the difficult moments with a sense of urgency that reveals her underlying lack of confidence in herself as a mother. She imagines turning to others for help a great deal, and may acknowledge a great deal of preparation for motherhood. It is important to determine the degree to which such information seeking is driven by a sense of powerlessness or is an adaptive and successful coping strategy, which would earn her a higher score.

3. Realistic view as competent/efficacious: A woman receives a score of 3, the mid-point, if she sees herself as an efficacious mother, able to make her baby feel happy, safe and secure, while at the same time acknowledging her own limitations. This mother is realistic in acknowledging both her strengths and weaknesses. She can imagine turning to others for help, does not imagine being alone in caring for her baby, but does not have a sense of urgency about this. She understands that she will be confronted by a range of challenges and issues, but will be flexible in responding to her individual child's needs. Although this mother may have some anxiety about being a mother, it does not interfere with her ability to imagine pleasurable experiences with her infant. She values herself and her ability to care for the infant, but is not so invested in her self-image as a mother that she needs to present herself as flawless. Descriptions related to self-efficacy will be coherent, balanced, and integrated.

4. Moderately overestimating self-efficacy: A woman receives a 4 if she expresses somewhat unrealistic feelings of self-efficacy in her mothering role. Although she may admit to some worry, she minimizes this and does not seem to accept the limits of her knowledge and abilities. She may have a tendency to dismiss moments when she may not know what she is doing. She does not readily imagine herself as needing help from others, and tends to turn herself toward other sources that reinforce her sense of confidence. This mother may also acknowledge that she will be influenced by childhood experiences, but in an overly self-reliant way that insists she will be able to manage and control influences from childhood. In other words, the mother does not provide evidence that she will indeed be able to do this. What places her between realistically competent and moderately over-confident is the degree to which she is able to acknowledge some uncertainty, incompetence, and anxiety. Whatever difficulties she anticipates confronting, she reassures herself (and the interviewer) that everything will turn out fine. This kind of mild grandiosity may also be reflected in a woman's minimizing a baby's impact on her and her own anxiety.

5. Totally overestimating self-efficacy: A woman who receives a 5 cannot accept the limits of her experience or knowledge, and sees herself as fully able to meet the needs of her infant. She overvalues her own ability to cope and be available to the child, displaying a clearly unrealistic, grandiose view of herself as a mother. She does not acknowledge any anxiety and rigidly defines problems and solutions ahead of time (leaving no room for ambiguity). She does not acknowledge that there will be moments when she does not know what to do and does not acknowledge the need for help from anyone. Some of her grandiosity may manifest itself in her stating that the infant will have no impact on her life, presumably because she can cope with all of it. Descriptions related to self-efficacy may be rigid, and may lack coherence and consistency.

AFFECTIVE TONE OF THE REPRESENTATION

The following scales should be used to assess the degree to which various affective tones color the caregiver' s representation of the infant. The higher end of the scales should be used to indicate major affective themes in the interview, the middle of the scales should be used to designate minor affective themes, and the lower end of the scales should be used if the affect is not present or is present only in an isolated instance and does not attain thematic significance for the representation. This is not a scale to measure which affects the caregiver perceives in the infant, but rather, the affective tone of the representation. For instance, a caregiver who describes the infant as happy, but who conveys an overall indifference throughout the interview would have the indifference rated but not the happiness.

1-None; 2-Limited; 3-Moderate; 4-Considerable; 5-Extreme

JOY

ANGER

ANXIETY

INDIFFERENCE

DEPRESSIVE AFFECT

CLASSIFICATIONS

BALANCED REPRESENTATIONS

Representations classified as balanced are characterized by interviews that convey coherence, openness to change, richness of detail, and a sense of the caregiver as engrossed in his/her relationship with the infant. The caregiver values the relationship with the infant and considers it to have effects on the infant's behavior and development and caregiving sensitivity is a characteristic of descriptions of the infant and the infant-caregiver relationship.

In terms of descriptions and perceptions of the infant:

- If there are difficulties with the infant, these are acknowledged and placed into context.
- Negative affects in the child are recognized and accepted.
- Positive attributions of the infant's behavior are primarily dispositional, that is, credited to the infant's personality (he smiles a lot because he's a happy little guy).
- Negative attributions, on the other hand, are primarily situational (she's cranky when she's tired) or developmental (now that we're in the terrible twos, she's got her own ideas about what she wants to eat).
- There is balance in the caregiver's expression of negative affects (especially anger) towards the infant so that they are qualified and/or contained sufficiently that they do not dominate the representation and so that their effects on the infant are not dismissed.
- A sense of respect for the infant and empathic appreciation for the infant's experience characterizes the interview.
- The infant's needs for dependency and for autonomy are accepted in a developmentally appropriate manner.
- Descriptions of the infant are balanced in that emotional responses and knowledge of the baby are integrated and so that the caregiver's presence is clear. ("I'm so excited when she does..." rather than, "It can be quite exciting when my baby does...").

In terms of descriptions and perceptions of the caregiving role:

- Ordinarily, the caregiver does not feel overwhelmed or unable to function adequately in the relationship with the infant. If the caregiver does describe feeling overwhelmed, then he/she is able to recognize the problem directly, recognize potential detrimental effects on the infant, and has taken steps to protect the infant (For example, a mother with a severe postpartum depression who arranges for childcare until she feels better able to care for her infant).
- The caregiver seems convincingly drawn to comfort the infant when he/she is distressed.
- Caregiving lapses in sensitivity are placed into an understandable context.

There are three subtypes of balanced representations: balanced-full, balanced-restricted, and balanced-strained.

Balanced-Full

This subtype of balanced representation is the group exemplar. These interviews are exceptionally coherent, open, and rich, and they convey the caregiver' s engrossment with the infant. The relationship with the infant is not only cherished, it is also clearly in focus, with little sense of constriction, distortion or anxious preoccupation by the caregiver. As a result, both positive and negative features of the infant and the caregiver' s relationship with the infant are considered freely and openly.

Balanced-Restricted

Although meeting general criteria for the balanced type of representation, these interviews are held back from the balanced-full subtype by some restriction in feeling about the infant or the caregiver' s relationship with the infant. The caregiver may be somewhat affectively muted, or may tend to minimize the importance of their relationship with the infant, or may seem slightly distanced from full engrossment in the relationship with the infant. This subtype of balanced representation bears some similarities to the disengaged representations. This important differentiation is made primarily on the basis of general category descriptors.

Balanced-Strained

This subtype also meets general category descriptors for balanced representations but is distinguished from the full subtype by some strain in the relationship with the infant. The caregiver is, nevertheless, aware of the strain and may even demonstrate some humor about it. The infant may be perceived as difficult, and this may be somewhat unsettling to the caregiver. In any case, the caregiver is either struggling a bit or slightly confused about the infant or the relationship with the infant. Mild hints of role-reversal, such as playful descriptions of the infant as a buddy, confidante or support may be apparent, but they do not indicate that the parent has abdicated the emotional burden of the relationship.

DISENGAGED REPRESENTATIONS

This classification is identified by the caregiver' s prominent disengagement from the relationship with the infant. This may take the form of emotional aloofness or a more pervasive distancing from or even aversion to the infant. Distancing may take the form of excessively cognitive or intellectualized descriptions of the infant that are largely devoid of direct expression of feelings for the infant (not jargon or psychobabble). There is also evidence of lack of caregiver emotional and personal involvement with the infant and infant-caregiver relationship. There may seem to be little flexibility to accommodate changes in the representation over time. Incoherence is likely to be evident primarily by intellectualized distance, coolness, a consistent emotional withholding in descriptions of the infant or the infant-caregiver relationship.

<u>In terms of descriptions and perceptions of the infant:</u>

- A pervasive sense of coolness or distance from the infant may characterize the interview. The caregiver may seem not to know the infant as an individual so that descriptions may be minimal or have a pat quality about the, or seem relatively unemotional.
- Difficulties with the infant are not acknowledged directly nor placed into a meaningful context.

- Negative affects in the infant are minimized or denied, though evidence of them comes up indirectly.
- The infant' s needs for dependency may not be recognized.
- Indifference towards the infant is a particularly strong marker of disengaged representations (a score of 2 or higher is strongly suggestive)

<u>In terms of descriptions and perceptions of the caregiving role:</u>

- The caregiver seems to have limited involvement with the relationship with the infant.
- Caregiving behavior may have a forced or unconvincing quality about it, or there may be imbalance in the description of the caregiver as teacher or playmate rather than caregiver/nurturer.
- Negative affects in the caregiver towards the infant are not acknowledged directly.

- Displaced anger indirectly expressed towards the interviewer is often indicative of the disengaged type. Indifference is an especially strong indicator of Disengaged representations.

There are two subtypes of disengaged representations: disengaged-impoverished and disengaged-suppressed.

Disengaged-Impoverished

This subtype of disengaged representation is characterized by a significant lack of caregiver psychological involvement with the infant and the relationship with the infant. The caregiver' s representation is emotionally impoverished or so that the caregiver seems largely indifferent to, or in extreme cases, the caregiver seems to reveal an aversion to the infant. The caregiver has little to say about the infant and much of what is said is unconvincingly stereotyped. The caregiver actually seems not to know the infant as an individual.

Disengaged-Suppressed

The most striking feature about this subtype is emotional constriction or aloofness that pervades the representation. The infant seems more known and the caregiver is more involved than in the impoverished subtype, but the caregiver maintains an unmistakable emotional distance from the infant. The caregiver has thought about the infant and has some concern for the infant but seems to be defensively maintaining emotional distance. Descriptions of the relationship with the infant may focus excessively on play and fun activities rather than descriptions of the relationship.

DISTORTED REPRESENTATIONS

In this type of representation, the caregiver is more involved and may have a lot to say, but one of several types of distortion imposes itself on the representation of the infant. The representation is designated distorted not in comparison to some putative objective reality, but instead, it refers to an internally inconsistency within the representation. For example, the caregiver may seem preoccupied by or distracted by other concerns, confused and anxiously overwhelmed by the infant, or self-involved and insensitive to the infant as an individual. Descriptions of the infant may be highly incoherent in the sense of confused, contradictory, or even frankly bizarre. As a result, the caregiver may have difficulty in remaining focused clearly on the infant and the relationship with the infant. There is none of the coolness or detachment as in the disengaged representations. Instead the caregiver is more involved and may have a lot to say but one of several types of distortion imposes itself on the representation of the infant.

<u>In terms of descriptions and perceptions of the infant:</u>

- There may be a striking inability to focus incisively on characteristics of the infant.
- Instead, there may be a number of confused or contradictory images of the infant at various points in the interview.
- Difficulties with the infant may be prominent but they are not placed into context by the caregiver and may intrude into the interview in unusual places.
- Negative affects in the infant may be acknowledged but are not well integrated into an overall sense of whom the infant is in the mind of the caregiver.
- The caregiver may seem confused, disappointed or especially embarrassed by the infant.
- The infant's needs for autonomy are not recognized or are misunderstood.
- There may be an exclusive or excessive focus on one or two aspects of the infant rather than with a broad range of concerns.
- There may be unconvincing but elaborate positive descriptions of the infant that seem to convey less about the infant than about the caregiver's self-involvement. These may have a "protesting too much" quality about them in which the caregiver seems attempting to convince us of a particular view of the infant.
- Unrealistic expectations for the infant's developmental level may be prominent.

<u>In terms of descriptions and perceptions of the caregiving role:</u>

- The caregiver may seem overwhelmed or unsure of how to relate effectively to the infant.
- The caregiver may appeal implicitly to the infant to be reasonable by complying with the caregiver's wishes.
- The caregiver does not place caregiving behavior into a comprehensible context.
- The caregiver may be implicitly or explicitly looking to the infant for care and/or concern.

There are four subtypes of distorted representations: distorted-distracted, distorted-confused, distorted-role-reversed, and distorted-self-involved.

Distorted-Distracted

The main feature of this subtype is an inability to focus on the infant and the relationship with the infant. Instead, the caregiver seems to be struggling with a variety of other concerns that intrude upon descriptions of the infant. These may be selected aspects of infant difficult behavior, or may be concerns unrelated to the infant. This leads to a sense of the caregiver as unable to focus on the infant as an individual, but in contrast to representations classified as disengaged there is a sense of the caregiver struggling with the estrangement. Anger and/or disappointment may be prominent affective tones of the representation.

Distorted-Confused

Most striking about this subtype of representation is the marked incoherence in the form of confusion and uncertainty about the infant and the caregiver' s relationship to the infant. Though the caregiver may convey a sense of attempting to struggle against the confusion, more apparent than the struggle is the sense of the caregiver as bewildered, overwhelmed, or at least quite uncertain about the infant and the relationship with the infant.

Distorted-Role-Reversed

This subtype of distorted representation is characterized by an implicit or explicit desire in the caregiver for the infant to bear an excessive psychological burden for the relationship. This reversal of roles may take the form of the caregiver describing the relationship as a friendship or by the caregiver wanting the infant to be reasonable by complying with his or her wishes. Features of one or more other subtypes may be present but most striking is the evidence of the infant as a source of solace or comfort for the care-giver. The distortion in this instance is that the caregiver does not appear to describe a role-appropriate relationship with the infant. If convincing role-reversal is apparent, this subtype should be used even if characteristics of other subtypes are also prominent.

Distorted-Self-Involved

This subtype of representation is characterized by an unmistakable sense of the caregiver' s preoccupation with self rather than with the infant. Descriptions of the infant may be quite positive, even glowing, but the impression is that the infant is valued less for himself/herself and more as a reflection of the caregiver. The self-involvement is qualitatively different from caregivers' pride in their child as an extension of themselves. The difference may be apparent because the infant as an individual is not clear or because there may be striking examples of caregiving insensitivity despite the generally positive descriptions of the infant. The infant may seem to exist in order to satisfy the needs of the caregiver.

APPENDIX B

WORKING MODEL OF THE CHILD INTERVIEW

INTERVIEWER: *PLEASE TURN ON THE TAPE RECORDER AND MICROPHONE. Test the tape recorder by saying "Testing 1, 2, 3" a few times. Rewind and play back the recording to make sure everything is working properly. THEN, TURN ON TAPE RECORDER--PRESS RECORD--AGAIN. WAIT 5 SECONDS. SAY YOUR NAME, DATE, and SUBJECT NUMBER INTO THE RECORDER. BEGIN INTERVIEW.*

1. **MAKE SURE TAPE RECORDER IS TURNED ON and THAT "RECORD" IS PRESSED.**
2. **MAKE SURE MICROPHONE IS TURNED ON.**

We are interested in how parents think and feel about their children before they are born. This interview is a way for us to ask you about that. The interview will take us about an hour to complete.

1a. Let's start with your pregnancy. I'm interested in things like whether it was planned or unplanned, how you feel physically and emotionally, and what you are doing during the pregnancy (e.g., working). Let's take these one at a time. *[The idea is to put the participant at ease and to begin to obtain a chronological history of the pregnancy. Additional probes may be necessary to make sure that the individual is given a reasonable opportunity to convey the history of their reactions and feelings about the pregnancy and the baby (which may or may not be the same).]*

Was the pregnancy planned or unplanned?

How much is the baby wanted or not wanted?

When did the pregnancy seem real to you?

How have you felt physically and emotionally throughout your pregnancy?
[Interviewer: Find out the history of these throughout the pregnancy.]

What are you doing, or have you been doing, during the pregnancy? (e.g., working?)
[Interviewer: Find out the history of these throughout the pregnancy.]

What have been your impressions about the baby while you're pregnant? What do you sense the baby might be like?

****** MAKE SURE THE TAPERECORDER IS TURNED ON and "RECORD" IS PRESSED.**

****** MAKE SURE THE MICROPHONE IS TURNED ON.**

1b. How do you think you will react to labor and delivery? What do you think your feelings about labor and delivery will be?

What do you think your first reaction will be when you see the baby?

What will be your reaction if the baby is a boy? If the baby is a girl?

How do you think your family will react to the birth of your baby? *[Interviewer: Be sure to include husband/partner, other siblings.]*

1c. Do you think your baby will have any problems in the first few days after birth?

How long do you think the baby will have to stay in the hospital?

Are you going to breast-feed or bottle-feed? Why? How did you come to that decision?

1d. How do you think the first few weeks at home with the baby will go?
[Interviewer: Explore feelings about feeding, sleeping, crying, etc.]

1e. How old do you think your baby will be when he/she sits up?

Crawls?
Walks?
Smiles?
Talks?
Do you think your baby will do these things ahead, behind, or at the same time as other babies?

Do you have any sense yet of what your baby's intelligence will be? Why do you think that?

1f. Do you think your baby will have a regular routine? What do you think will happen if you or your baby can't stay in the routine?

1g. Will you need to be separated from your baby after he/she is born? (e.g., work)
If the participant says YES or NO, the interviewer asks:
****What do you think this will be like for you? For the baby?**

If the participant says "I HOPE NOT" the interviewer asks:
****If this did happen, what would this be like for you? For the baby?**

Will there be any separations in the first year of your baby's life that will last for more than a day? How will that be for you? For your baby?

2a. What do you think your child's personality will be like when he/she is born?
[Personality--the qualities/traits/features that give someone their identity, that makes someone who they are]

2b. Pick 5 words (adjectives) that describe what your child's personality will be like when he/she is born. *[Interviewer: Write these down on the paper for reference. It is not important that participants come up with exactly 5 adjectives.]*

1.
2.
3.
4.
5.

For each one, what makes you say that?

3a. Who do you think your baby will be most like?

What personality traits do you think your child will inherit from you?

What traits will your child inherit from the baby's father?

3b. Do you think there are any characteristics your child will inherit from your side of the family?

From the baby's father's side of the family?

3c. Have you decided on your child's name? How did you decide?(or How *will* you decide?)

Does that name have special meaning in your family or the baby's father's family?

4. In what ways do you think your child will be unique or different from other children?

5. After your baby is born, what behavior in his/her first year of life do you think will be the most difficult for you to handle? Can you give an example?

5a. Why will this be difficult? How often do you think it will occur?

What will you feel like doing when your child behaves like that? How will you feel if your child acts this way? What will you do about the behavior?

5b. Do you think your child will know you don't like that behavior? Why do you think he/she will act like that?

5c. What do you imagine will happen to this behavior as your child grows older? Why do you think so?

6a. How would you describe your relationship with your baby now, while you're pregnant?

6b. Pick five words (adjectives) to describe your relationship. For each word, describe an incident or memory that illustrates what you mean. *[Interviewer: Write these down on the paper for reference. It is not important that participants come up with exactly 5 adjectives.]*

1.
2.
3.
4.
5.

7a. What pleases you most about your relationship with your baby while you're pregnant?

What do you wish you could change about it?

7b. How do you feel your relationship with your baby while you're pregnant will affect your baby's personality?

7c. Has your relationship with your baby changed during the pregnancy? In what ways? What is your feeling about the change?

8. When your baby is born, what parent do you think he/she will be closest to? Why?

Do you expect that to change (as the child gets older, for instance)? How do you expect it to change?

9. Do you think your baby will get upset often in his/her first 12 months? What will you do at those times? What do you think your feelings will be at those times?

9a. What about when the baby becomes emotionally upset? What will you do at those times?

What do you think your feelings will be at those times?

9b. What about when your child becomes physically hurt a little bit (e.g., hitting his head against the crib)? What will you do at those times? What do you think your feelings will be at those times?

9c. What about when your child becomes sick (e.g., he/she gets a fever)? What will you do at those times? What do you think your feelings will be at those times?

10. Tell me a favorite story about your pregnancy, perhaps one you've told to family or friends. I'll give you a minute to think about this one. *[Interviewer: If the participant is struggling, you may tell them that this doesn't have to be the favorite story, only a favorite one.]*

What do you like about this story?

11a. Can you think of any experiences you've had during your pregnancy that might have been a setback for your baby? Why do you think so?
[*Setback=something that happened that makes things harder for your baby than for other babies.*]

If person says YES, then ask:
*****Why do you think so?**

If person says NO, go to next question.

[Interviewer: Indirectly, we're trying to determine whether the parent feels responsible in any way for the setbacks.]

Knowing what you know now, if you started all over again with your pregnancy, what would you do differently?

11b. Are there any experiences your baby might have during the first year of his/her life that might be a setback for him/her? *If person says NO, go to question 12.*
If person says YES, then ask:
Why do you think so?

Who or what is likely to contribute to these setbacks?

Is there anything you might do to prevent these setbacks?

12. Do you ever worry about your unborn baby? What do you worry about?

13. If your child could be any age right now (unborn, 1 month, 1 year, etc.), what age would you choose? Why?

14. As you look ahead, what will be the most difficult time in your child's development? Why do you think so?

15. What do you expect your child to be like as an adolescent? What makes you feel this way? What do you expect to be good and not so good about this period in your child's life?

16. Think for a moment of your child as an adult. What hopes and fears do you have about that time?

APPENDIX C

PSYCHOLOGICAL MALTREATMENT OF WOMEN INVENTORY

*******This questionnaire refers to _____ [NAME, see page 2, Question 10]*******
Use a separate form for each partner listed on page 2, Question 10

Please rate how often each of the following behaviors occurred during the last year using the following scale: *INTERVIEWER: If participant did not have a partner in the last year, do not administer: code answers as "X."*

Never	Rarely	Sometimes	Frequently	Very Frequently	No Partner During Last Year
1	2	3	4	5	X

_____1. My partner called me names.

_____2. My partner swore at me.

_____3. My partner yelled and screamed at me.

_____4. My partner treated me like an inferior.

_____5. My partner monitored my time and made me account for my whereabouts.

_____6. My partner used our money or made important financial decisions without talking to me about it.

_____7. My partner was jealous or suspicious of my friends.

_____8. My partner accused me of having an affair.

_____9. My partner interfered in my relationships with other family members.

_____10. My partner tried to keep me from doing things to help myself.

_____11. My partner restricted my use of the telephone.

_____12. My partner told me my feelings were irrational or crazy.

_____13. My partner blamed me for his problems.

_____14. My partner tried to make me feel crazy.

APPENDIX D

SEVERITY OF VIOLENCE AGAINST WOMEN SCALES

*******This questionnaire refers to _____ [NAME, see page 2, Question 10]*******
Use a separate form for each partner listed on page 2, Question 10

INTERVIEWER: If participant did not have a romantic partner in the last year, do not administer: code all answers as "X." INSTRUCTIONS: You and your partner have probably experienced anger or conflict. Below is a list of behaviors he may have done. Describe how often he has done each behavior to you during the last year and how many times your baby saw or heard what happened by choosing a letter from the following scale.

A	B	C	D	X
never	**once**	**a few times**	**many times**	**no partner during last year**

During the last year:

⇩ *Times your baby saw or heard what happened:*
⇩

1. ____ ____Hit or kicked a wall, door or furniture
2. ____ ____Threw, smashed or broke an object
3. ____ ____Driven dangerously with you in the car
4. ____ ____Threw an object at you
5. ____ ____Shook a finger at you
6. ____ ____Made threatening gestures or faces at you
7. ____ ____Shook a fist at you
8. ____ ____Acted like a bully toward you
9. ____ ____Destroyed something belonging to you
10. ____ ____Threatened to harm or damage things you care about
11. ____ ____Threatened to destroy property
12. ____ ____Threatened someone you care about
13. ____ ____Threatened to hurt you
14. ____ ____Threatened to kill himself
15. ____ ____Threatened you with a club-like object
16. ____ ____Threatened you with a knife or gun
17. ____ ____Threatened to kill you
18. ____ ____Threatened you with a weapon

19. ____ ____Acted like he wanted to kill you

20. ____ ____Held you down, pinning you in place

21. ____ ____Pushed or shoved you

22. ____ ____Shook or roughly handled you

23. ____ ____Grabbed you suddenly or forcefully

24. ____ ____Scratched you

25. ____ ____Pulled your hair

26. ____ ____Twisted your arm

27. ____ ____Spanked you

28. ____ ____Bit you

29. ____ ____Slapped you with the palm of his hand

30. ____ ____Slapped you with the back of his hand

31. ____ ____Slapped you around your face and head

32. ____ ____Kicked you

33. ____ ____Hit you with an object

34. ____ ____Stomped on you

35. ____ ____Choked you

36. ____ ____Punched you

37. ____ ____Burned you with something

38. ____ ____Used a club-like object on you

39. ____ ____Beat you up

40. ____ ____Used a knife or gun on you

41. ____ ____Demanded sex whether you wanted to or not

42. ____ ____Made you have oral sex against your will

43. ____ ____Made you have sexual intercourse against your will

44. ____ ____Physically forced you to have sex

45. ____ ____Made you have anal sex against your will

46. ___ _____Used an object on you in a sexual way

47. Were you ever pregnant during the time that any of these events occurred? **(1)** *yes* **(2)** *no* **(888)** *n/a*

APPENDIX E

12-MONTH MOTHER INFANT INTERACTION CODING SYSTEM

12 month
Mother-Infant Interaction
Coding System

(12 minute free play task at the lab)

MATERNAL CODES:

Behavioral:

- Sensitivity
- Disengagement/Unavailability vs. Involvement/Availability
- Over-controlling/Interfering Manipulation/Intrusiveness
- Covert Hostility/Discrepant Communication

Affective:

- Warmth
- Joy

Note: most scales say "adapted from..." which indicates that most information has been taken from that source. However, virtually all scales have been expanded in description and example using other coding systems.

MATERNAL SENSITIVITY

(Adapted from Ainsworth et al., 1971, 1974, 1978 and Lyons-Ruth, 1983)

Sensitivity reflects the mother's ability to **perceive and accurately interpret the infant's signals and to respond to them appropriately and promptly**. Sensitivity requires not only that the mother is accessible to the infant, rather than ignoring or neglecting, but that she is **alert to subtle aspects of the infant's signals**. Sensitive responses are **well-timed, reflect empathy with infant's needs and feelings**, and even when limit setting is called for, involve behavior that will **enhance infant's security, comfort, and development**. In this manner, a sensitive mother provides a **"supportive presence" for the infant**. For higher scores (4 or 5), the mother needs to be more sensitive than simply providing compulsory care (e.g., feeding infant when hungry, changing diaper when wet).

- **CONTINGENCY** is weighted heavily here. Mothers who respond contingently to their infant's behaviors are scored higher.
- **NEGATIVE BEHAVIORS** such as hostility and intrusiveness are also important. Mothers who demonstrate several examples of negative behaviors are rated lower.
- **POSITIVE BEHAVIORS** such as warmth and joy are also considered here. Mothers who demonstrate several examples of positive behaviors are rated higher.
- **ATTUNEMENT and AWARENESS** (which are related to contingency) of infant behaviors and cues is critical to obtain a high score on this scale. Mothers who are in tune with their child will often comment on the child's behavior and extend the meaning – "That's right, that's the red ball". This may manifest behaviorally as well as when a mother extends a behavioral game which her infant has started or is interested in. "You have a red ball at home, don't you." Alternatively, mothers who consistently respond to their infant's behavior with one script will score lower here – e.g., mothers who say, "what?, what?, what?" to everything the child does or comment only with one response over and over again.

1= NO OR VERY LITTLE SENSITIVITY

Mother's behavior is **guided almost entirely by her own wishes, moods, and activity**. She may respond if the infant's signals are intense and prolonged, but the delay is itself insensitive. Mother's behaviors are very rarely contingent on the infant's behaviors. She characteristically **ignores or distorts the meaning of infant's signals** and the responses she does make are inappropriate or fragmented or incomplete. In order to receive a '1', the **mother needs to demonstrate a strongly negative behavior by doing something blatantly insensitive or neglectful**, e.g., yelling, derogatory comments, using physical force, letting the child cry without any effort to soothe the child, not responding or responding inappropriately (e.g., laughing) when the child hurts herself, demonstrating extreme disengagement/neglect, etc. There may be a strongly role-reversed element to interactions where the sensitivity is low.

2=LITTLE SENSITIVITY

Mother **often fails to respond contingently, appropriately** and promptly though **occasionally she shows capacity for sensitivity**, especially when the infant's wishes, moods, and activity are not too discrepant with her own or when the infant very forcefully communicates great distress. An otherwise appropriate response may be delayed to the point that it is no longer contingent upon infant's signal or a seemingly appropriate response may be disrupted prematurely, so that interactions seem fragmented and incomplete or mother's responses perfunctory, half-hearted, or impatient. Mother will probably demonstrate some negative behaviors. Despite such clear evidence of insensitivity, **mother is not as consistently and pervasively insensitive as mother's**

rated a 1. If a mother demonstrates a strong negative behavior (e.g., knocking the child down, slapping the child) in addition to other evidence, she should be scored a 1.

3=SOME SENSITIVITY

Mother can be **very sensitive on occasion, but there are periods when she is insensitive**. Awareness of infant may be intermittent or moderate. Mother's perception of the infant's signals may be distorted in regard to one or two aspects but accurate in other important aspects. Responses may be prompt and appropriate in most respects but either inappropriate or slow in other respects. It may seem striking that a mother who can be sensitive on so many occasions can be so insensitive on others. **Alternatively, this mother may just be moderately sensitive throughout the interaction**. Mothers who seem to have equal amounts of evidence of sensitive behaviors AND insensitive behaviors would be scored here.

4=MUCH SENSITIVITY

This mother is quite contingent in her responses to her infant's behaviors and cues. She **interprets infant's communications accurately and responds to them promptly and appropriately**, but with less sensitivity than mother's rated a 5. She may be **less attuned to infant's more subtle cues**. Awareness may be somewhat less than that of mothers rated higher, but infant's clear signals are rarely missed nor misinterpreted. Although her responses may not be as consistently prompt or finely appropriate as those of mother's rather higher, **mother is never seriously out of tune with infant's tempo, state, and communications**. There should not be more than a very few instances of mild negative behaviors.

5=VERY HIGH SENSITIVITY

This mother is extremely contingent in her interactions with her baby. She is **exquisitely attuned to infant's signals and responds to them appropriately and promptly**. Empathic, she can **see things from infant's point of view**; her perceptions are not distorted by her own needs or defenses. When she feels that it is not best to comply with infant's demands, e.g., when is he over-stimulated, too imperious, or wants something he should not have, she is tactful in acknowledging his communications and in offering an acceptable alternative. She has **"well-rounded" interactions with infant**, so that the **transaction is smoothly completed and both mother and infant feel satisfied**. Her **responses are temporally contingent upon infant's signals**.

Questions to ask yourself:

Is the mother infant-centered?
How quickly does mother respond to infant?
Does mom allow baby to lead play?
Is she tuned in to baby, able to read and act on baby's cues?

What is the physical contact like—rough or gentle?

Are mother's reactions based on (or contingent on) the infant's cues?

DISENGAGEMENT/UNAVAILABILITY

(adapted from Lyons-Ruth)

This is primarily a **behavioral code** and measures the **degree of the mother's disconnectedness or lack of involvement from the baby and the play interaction** as expressed by:

- **PACING—long, empty pauses** between instances of stimulation, mother's involvement in play with baby is only sporadic and does not involve turn-taking, mother is **slow in responding** to infant

- **BODY POSITION**—mother **sits so she can't see the infant's face** most of the time, mother sits awkwardly or as though ready to leave, positions infant awkwardly, mother keeps distance from infant and may even sit in a chair away from infant

- **CONTROL OF INTERACTIONS**—mother **initiates very few activities**, mother leaves infant doing nothing for much of the interaction, infant controls the play without the involvement of the mother (plays alone) or no play occurs at all, mother does not respond to infant's initiation in a way that furthers interaction. Mother fails to protect infant's safety. Mother and infant may be engaged in parallel play with no joint play

- **CHOICE OF ACTIVITY**—Mother makes **no attempt either to control or facilitate or extend on child's behavior** at a time when support and assistance would be helpful.

- **LENGTH & FREQUENCY**—These are important considerations in this code. All mothers will have moments of disengagement in a ten minute segment. In order to register a score on this scale mothers must disengage for a significant length of time (20 seconds) more than one time and/or have several times of shorter-duration disengagement. Mothers will often **demonstrate a "zoney" quality** during these periods where it seems that they are in their own worlds and are not responding to the infant. **Look to see how quickly the mother reengages if/when the infant cues**. Mother's who are slow in reengaging/responding are considered more disengaged. If there is only one segment of disengagement in an otherwise very engaged interaction, the segment should be approximately one minute in duration.

This scale **emphasizes maternal behavior more than affect**. The mother may be seen as "doing nothing" or makes only token gestures for the benefit of the experimenter. Alternatively, the mother may be SO involved in her own play/activities, that she's unavailable to the infant.

Consider **how much the mother attempts to be involved in play, as opposed to engaging in caretaking behaviors** such as spending most of the time feeding the infant or changing a diaper.

Also note that **we do not necessarily rate the *quality* of involvement**. For example, if the mother roughly handles the child but is involved, she does not receive a lower score because of poor quality of involvement (this would be reflected in her sensitivity score).

1=NO OR VERY LITTLE DISENGAGEMENT (highly involved, available)

This mother is **highly involved throughout the entire session** and seems connected to child. She is **almost never disengaged** from the infant. She may seem to enjoy the play and interaction for its own purposes or she may be very overbearing and controlling of the infant behavior.

2=LITTLE DISENGAGEMENT (mostly involved, available)

For the most part, this mother is highly involved and/or connected and attuned to the child, although there **may be a few brief episodes where mother is distracted or disengaged** from the infant and the interaction.

3=SOME DISENGAGEMENT (moderately involved, available)

The mother is involved and **engaged some of the time, while uninvolved and disconnected at other times** (about an equal amount of both of these). The mother may have spurts of involvement and engagement, alternated with spurts of disengagement. Alternately, the mother may be involved for the first half of the session and uninvolved during the second half of the play session or vice versa.

4=MUCH DISENGAGEMENT (little involvement, minor availability)

The mother is **rarely involved and engaged with the infant**. Much of the time is spent in her own world, perhaps sitting back and seemingly indifferent to the infant. She may appear bored or tired much of the time. Also, this mother may play by herself to the exclusion of the infant for a lot of the time.

5=VERY HIGH DISENGAGEMENT (no involvement or availability)

The mother is **consistently disengaged and uninvolved throughout most of the session**. The mother may seem to be in her own world or be preoccupied with her own needs or thoughts and/or she may not seem to notice the infant much at all. Mother is characteristically inattentive and may seem very bored or may seem entirely engrossed with her own parallel play.

Questions to ask yourself:
How much time is the mother engaged with the infant?
How much does the mother talk to the infant?
Where are they positioned in relation to one another?
How much are they playing together?
Were there times when the mom sat back and was disengaged?
How much is basic caregiving versus playing?
When there is basic caregiving, how much does the mom initiate activities or games during this time?

OVER-CONTROLLING
INTRUSIVENESS/INTERFERING MANIPULATION
(adapted from Lyons-Ruth, based on Crittenden, 1981)

This scale does not refer to appropriate limit-setting or structuring, but measures the **degree to which the mother's behavior interferes with rather than facilitates the infant's goals. The infant does not necessarily need to respond negatively** to the mother's actions in order for the mother to receive high intrusiveness. **Examples when the mother tries to CONTROL the infant get weighted more heavily**. Mothers who are less involved score lower on this scale. Maternal exhibitions of parallel play do NOT count here – they are considered signs of disengagement.

- **CONTROLLING vs. INTRUSIVENE BEHAVIOR** – Controlling/Overbearing/Interfering behaviors are rated more highly than intrusive behaviors here. However, mothers who are **extremely** intrusive can also be said to be controlling and overbearing.

- **BODY CONTROL**—mother **manipulates the infant's body, arms, or legs to accomplish something mother wants** in a manner which **interferes with the babies activities**, mother **suddenly and unexpectedly moves toys or her face in close to baby's face** producing a startle, wince, or withdrawal...**unlike the "boo!" in the common game, this behavior is not part of a rhythmic game format**.

  Note: *when mother engages in caretaking task such as changing diaper or wiping the child's nose, it is important to evaluate the quality of body control—e.g., wiping nose in and of itself is not intrusive, but may be depending on how roughly or excessively the mother does this.*

- **PACING**—mother is involved and active but **her pacing is not contingent on the infant's cues or rhythm**, pacing is often but not always fast-paced or intense. **Mother may interrupt infant and will probably seem overbearing**. Mothers who are uninvolved and inactive score lower on this scale.

- **CONTROL OF INTERACTION**—mother **controls the choice and duration of the activity in spite of clear signals that the activity is not liked by the infant**, has been continued too long, or is too difficult, **mother interferes with infant's play to change or correct an activity** or to limit infant's range of activity, mother keeps an interesting toy just out of reach or takes away an object of infant's interest, mother makes baby wait and watch while mother performs an activity—this does not refer to a brief demonstration, but to instances in which baby wants involvement but mother ignores or prevents it.

- **VERBAL**—mother's tone of voice, volume of voice, and pacing of her verbal communication can be **considered intrusive if they are extreme**. She may give constant flow of verbal instructions. She may "quiz" child excessively.

1=NO OR VERY LITTLE CONTROLLING

This mother almost never or never shows evidence of interference or intrusiveness. She **respects the infant and views the infant as a separate individual with his/her own needs, moods, and wishes**. She may actually plan to avoid situations in which she would have to interrupt infant's activities. She exerts very little control over the infant (with the exception of protecting him/her from a dangerous situation). She allows the child to lead the play and choose activities. There may be a maximum of one or two mild instances of interfering manipulation.

2=LITTLE CONTROLLING

This mother **shows very few instances of intrusive or controlling behavior**. For the most part, she allows the infant to control the interaction and follows the infant's lead, although there may be a few noticeable exceptions.

3=SOME CONTROLLING

This mother shows a **moderate amount of controlling or intrusive behavior**. It seems that she is equally likely to be controlling as non-controlling.

4=MUCH CONTROLLING

For much of the interaction, this mother is controlling the infant's behavior according to her own agenda. She may **display considerable verbal and physical interference and does not seem to be following the infant's lead**. There may be a few instances in which this mother does allow the infant some control over the interaction and play.

5=VERY HIGH CONTROLLING

This mother is **highly interfering and lacks respect for the infant as a separate individual**. She tries to impose her will and wishes on the infant's without regard for his/her needs or wishes most of all of the time. **She disregards the infant's choice or timing of activities** and seems to be in complete control of the situation. This mom may also use physical "force" to control the infant's movements and activities. The mother's agenda is controlling the interaction.

Questions to ask yourself?

How much is mother focused on own needs vs. infant's?
Does she tickle, poke, or move baby's body intrusively?
Does she play rough play even when baby indicates s/he doesn't want to?
Is she loud and "in your face"?
Does she invade the infant's physical space intrusively?
Does it seem like mother wants to control the infant's behaviors or play?

COVERT HOSTILITY/ DISCREPANT COMMUNICATION

(adapted from Lyons-Ruth, based on Crittenden, 1981)

This scale measures the **degree to which the mother's communications to and interactions with the infant express covert hostility.** Examples of this may include **sarcastic comments, teasing behaviors which frustrate the child and/or do not end in allowing the child to achieve the goal, and discrepant communications**. Discrepant communications involve a **discrepancy** between aspects of mother's behavior. Mother may demonstrate an abrupt change in behavior such as showing a false or exaggerated smile followed in quick succession by a look of anger or disgust or hostility. Frequently, mothers who demonstrate these kinds of behaviors will demonstrate signs of feeling rejected by the infant or needs for the infant to emotionally support her. Examples are comments like, "you don't want to play with me do you," and repeated demands that the child kiss her or play with her. **This code is distinguished from Overt Hostility in that the mother's anger is sublimated or behaviorally controlled in some way. She does not "lose it" when it comes to her anger. She does not overtly yell or hit the child but uses some other mechanism (e.g., sarcasm) to express her anger.**

- **SARCASM, TEASING, MOCKING and ANNOYED COMMENTS** are considered here

- **UNDER THE BREATH COMMENTS** are considered here when they are of a hostile nature

- **DISCREPANT COMMUNICATION involving**
  - **Facial expression—inappropriately happy**, e.g., happy when baby is displeased or when baby can't see mother's face, or **too exaggerated for the situation**, or unchanging in spite of situational change
  - **Vocal expression—pseudo-appropriate voice tone**, e.g., uses infant-elicited intonation and rhythm but is exaggerated, or fast paced, or artificial sounding. **Commands are behaviorally inconsistent**, e.g., sweet voice and insistent, harsh hands, pleasant voice with hostile intent, sharp voice matched with disarming smile, gentle insistence combined with brief indications of disgust with infant does not comply. **Growling sounds** are considered here.
  - **Expression of affection**—pseudo-affectionate affection: similar to affectionate behavior but is **irritating to infant and is more like jabbing, poking, or pinching** (not including nose-cleaning), and may produce a startle, wince, or withdrawal by infant. This may also include teasing, poking, and jabbing the child in a covertly hostile way, e.g., **looking affectionate and playful but in a sharp manner that is out of synchrony with the child's behavior**.

1=NO OR VERY LITTLE COVERT HOSTILITY

Mother's behavior is **clear and consistent virtually the whole time**. Her affect and behavior are also consistent with one another so that her intentions or motives seem very clear. She does not demonstrate more than one or two **mild examples** of sarcasm, teasing or annoyance.

2=LITTLE COVERT HOSTILITY

The mother's **behavior is clear and consistent most of the time, with very minor exceptions**. She only demonstrates discrepant communication or signs of the other markers a few times.

3=SOME COVERT HOSTILITY

This mother displays **several instances of discrepant communication or covert hostility**. There are times when her behavior is clear and consistent, but at other times, she appears to send the infant mixed messages or demonstrates examples of covert hostility.

4=MUCH COVERT HOSTILITY

This mother displays discrepant or covertly hostile behaviors much of the time. Her **behavior and affect often do not match or there is a hostile feel to her behavior much of the time**. There may be several instances during which the mother teases or mocks the child.

5=VERY HIGH COVERT HOSTILITY

This mother's **behavior is highly discrepant or covertly hostile throughout the interaction**. Her **affect and behavior may very often be mis-matched** (e.g., her affect is light, warm, smiley while grabbing or poking the child). This mother also seems to express sarcasm, annoyance, mock, tease, poke or jab the infant in a controlling, harsh manner with underlying hostile intent.

Questions to ask yourself:

Is mother hostile and angry but in a covert, rather than overt, way?
Does the mother seem to give mixed messages to the infant?
Is mother's behavior hard to understand?
Do you think the infant might be confused by mother's behaviors?
Is there a mis-match between mother's affect and her behavior?

WARMTH

(adapted from Lyons-Ruth)

This scale measures the **quality of mom's affection toward the infant**, i.e., **to what extent does the mother express affection toward infant, in a way that brings pleasure to the baby**, by tone and/or content of verbalizations, gentle patting or stroking, hugging, kissing, or facial expression (appropriate smiles). Extent is defined in terms of both **intensity and frequency**.

Included in this code are:

- **PHYSICAL TENDERNESS** such as gentle stroking, kissing, hugging
- **MATERNAL AFFECT** such as when the mother seems to enjoy being with the child and there is a sense that she is happy just to be spending time with the child
- **VERBAL COMMENTS** which express to the infant the mother's feelings of love and caring for the child and her behaviors
- **ENTHUSIASM** in the activities they are engaged in and in interacting with the child
- **PRIDE** – mothers scoring high on this code will often give you the feeling that they just think this kid is the most amazing creature on earth

1=NO OR VERY LITTLE WARMTH

Mother's behavior **consistently fails to convey warmth**; interactions frequently **lack tenderness, caring, and affection**. Mother seems to not enjoy the baby or the interaction at all.

2=LITTLE WARMTH

Mother's behavior **very often fails to convey warmth**; interactions frequently lack tenderness, caring, and affection.

3=SOME WARMTH

Mother's behavior **occasionally expresses warmth**, but some or many interactions lack tenderness, caring, and affection. May only see briefer or milder instances of tenderness.

4=MUCH WARMTH

Mother's behavior **often expresses warmth and interactions are generally tender, caring, and affectionate**. She seems to enjoy the interaction and being with the baby.

5=VERY HIGH WARMTH

Mother's behavior **very often expresses warmth and interactions are consistently tender, caring, and affectionate**. For a 5 mother **must demonstrate enjoyment and enthusiasm** in her interactions with the baby.

Questions to ask yourself:
Does mother seem to genuinely enjoy being with infant?
How much does mother express positive affect towards the baby?
How often are positive verbalizations expressed?
Does mother express physical affection, e.g., through tender touches?

JOY

This scale measures **the amount and quality of the mom's joyfulness during the interaction with the baby**. Although somewhat related to warmth, this scale emphasizes slightly different qualities than warmth. Here we are **emphasizing the degree of smiling, laughing, playing, enthusiasm, and "pure" enjoyment** that the mom displays. Mothers that score high on this scale should show **high levels of playfulness, glee, excitement, wonder, or amazement** while interacting with the infant. You get a sense that the mother can really **share in the infant's excitement and joy over the toys**—like she is a kid again (this is qualitatively different than a mother who explores the toys because of her own deprivation). One example of the difference between Warmth and Joy is that a mother may be consistently tender and affectionate (and therefore high on warmth), but demonstrate more subdued or muted joyful affect or subdued playfulness or enthusiasm (and therefore lower on joy).

It is possible for a mother to register a score on this scale through a sort of antagonistic joy wherein she is **laughing and enjoying herself at the expense of the infant's needs and cues**. Mother's who are demonstrating this kind of joy should register a score on one of the anger scores and should not receive a high score on the joy scale.

Look for:	And at higher levels:
SMILES	**GLEE and EXCITEMENT**
PLAYFULNESS	**WONDER and AMAZEMENT**
LAUGHS and GIGGLES	
POSTIVE/EXCITED COMMENTS	
EXCITED INBREATHS	

1=NO OR VERY LITTLE JOY

Mother's behavior **consistently fails to convey joy, playfulness, or enthusiasm**. She **rarely, if ever, smiles**. She may be completely **flat**, with virtually no affect at all, **or she may come across as hostile and angry**. Either way, there is a striking lack of joyfulness.

2=LITTLE JOY

Mother's behavior very **often fails to convey joy or playfulness. Smiles or laughs are brief and infrequent**. There are only minor "bursts" of playfulness or enthusiasm and these may seem more forced or mechanical.

3=SOME JOY

Mother's behavior **occasionally expresses joyfulness, in addition to milder instances of smiling and laughing**. She may be enjoying the experience at a lower level throughout the interaction or may show occasional high levels of joy **alternating with neutral or negative affect**.

4=MUCH JOY

Mother's behavior **often expresses joy, playfulness, and enthusiasm**. This mother seems to enjoy the infant and interaction and **smiles, laughs, or giggles a considerable amount of time**. This mother also seems to **show some child-like sense of wonder and excitement**.

5=VERY HIGH JOY

Mother's behavior **very often expresses joyfulness and interactions are consistently playful, positive, and enthusiastic**. This mother consistently smiles and laughs and she appears to **consistently show wonder and glee**. These mothers seem to genuinely enter and delight in the child's world.

Questions to ask yourself:
Does mother smile and/or laugh enjoyably?
Is the mother playful?
How enthusiastic is she?

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