

“Working Model of the Child Interview”: Infant Clinical Status Related to Maternal Perceptions

DIANE BENOIT

Hospital for Sick Children

CHARLES H. ZEANAH

Louisiana State University School of Medicine

KEVIN C. H. PARKER

Kingston General Hospital

ELAINE NICHOLSON

Hospital for Sick Children

JENNIFER COOLBEAR

York University

ABSTRACT: Parental perceptions and subjective experience of infants have long been considered important in clinical work with infants and families. Using three different samples of infants, we compare mothers' representations of their infants in clinically referred and nonreferred groups, using the Working Model of the Child Interview (WMCI). Twenty-four mothers of infants with failure to thrive (and 25 matched controls), 17 mothers of toddlers with sleep disorders (and 20 matched controls), and 13 mothers of infants seen in a general infant psychiatry clinic participated. Compared to their nonclinical counterparts, mothers of infants with clinical problems had representations of their infants that were significantly more likely to be classified distorted or disengaged. Infant gender, age, and birth order were independent of maternal classifications. We conclude that the WMCI is a useful structured interview to categorize mothers' perceptions and subjective experience of their infant and relationship with the infant. Mothers' WMCI classifications are associated with the clinical status of the infant.

RESUMEN: Las percepciones de la madre y la experiencia subjetiva de los infantes han sido consideradas importantes, desde hace tiempo, en cuanto al trabajo clínico con infantes y familias. En este estudio, presentamos los resultados de una entrevista clínica acerca de las representaciones que las madres tienen de sus infantes y las comparamos con las representaciones de otras madres de infantes que no pertenecen al mismo grupo. Participaron veinticuatro madres de infantes con problemas de crecimiento (y sus 25 parejas de control), 17 madres de infantes con trastornos para dormir (y sus 20 parejas de control), y 13 madres de infantes que habían sido vistos en una clínica de psiquiatría infantil general. Comparados con sus contrapartes no clínicas, las madres de infantes

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con problemas clínicos tenían representaciones de sus hijos que estaban significativamente más propensas a ser clasificadas como distorsionadas o desconectadas. El sexo del infante, la edad y el orden de nacimiento se presentaron como independientes de las clasificaciones maternas. La WMCI (*Working Model of the Child Interview*) es una entrevista clínica estructurada muy útil para identificar las características problemáticas de las percepciones maternas y la experiencia subjetiva de sus infantes. Las clasificaciones que las madres tienen de sus infantes, las cuales se derivan de la WMCI se asocian con el estado clínico del infante.

RÉSUMÉ: Les perceptions parentales et l'expérience subjective des bébés ont pendant longtemps été considérés comme importantes dans le travail clinique avec les bébés et leurs familles. Dans cette étude, nous présentons les résultats donnés par l'utilisation d'un entretien clinique sur les représentations des mères de leurs bébés et nous les comparons aux représentations des mères de bébés non suivis. Vingt-quatre mères de jeunes enfants ayant des troubles de croissance (et 25 contrôles assortis), 17 mères de jeunes enfants ayant des troubles du sommeil (et 20 contrôles assortis), et 13 mères de bébés en consultation dans une clinique de psychiatrie infantile générale ont participé à cette étude. Comparées à leurs contreparties non-cliniques, les mères de bébés ayant des problèmes cliniques avaient des représentations de leurs bébés que l'on pouvait bien plus classer comme étant déformées ou déçagées. Le sexe du bébé, son âge, son ordre de naissance étaient des facteurs indépendants des classifications maternelles. L'entretien que nous proposons ("Modèle de travail de l'entretien de l'enfant") consiste en un entretien clinique structuré et utile pour identifier des traits problématiques des perceptions des mères et de l'expérience subjective du bébé. Les classifications de mères de leurs bébés dérivées du Modèle de travail sont associées au statut clinique du bébé.

ZUSAMMENFASSUNG: Elterliche Wahrnehmungen und deren subjektives Erleben ihrer Kleinkinder wurden seit langem in der klinischen Arbeit mit Kleinkindern und ihren Familien als wichtig erachtet. In dieser Studie werden die Resultate eines Interviews über das innere Bild der Mütter einer Inanspruchnahmepopulation von Kleinkindern im Vergleich mit nicht-Eingewiesenen präsentiert. Es beteiligten sich 24 Mütter von Säuglingen mit Gedeihstörungen (und 25 gleichartigen Müttern von gesunden Kindern), 17 Mütter von Kleinkindern mit Schlafstörung (und 20 gleichartige Mütter von Kleinkindern) und 13 Mütter von Kleinkindern, die in einer allgemeinen psychiatrischen Ambulanz für Kleinkinder vorgestellt wurden. Bei Mütter von Kindern mit klinischen Problemen war es signifikant wahrscheinlicher, daß ihre Vorstellungen über ihre Kinder verwirrt oder unabhängig vom Kind waren, als bei den Müttern der nicht-eingewiesenen Kleinkinder. Das Geschlecht, das Alter und die Stellung in der Geburtenreihe waren unabhängig von der Klassifikation der Mütter. Der WMCI ist ein nützlicher, strukturierter, klinischer Befragungsbogen, um problematische Merkmale von mütterlicher Wahrnehmung und deren subjektivem Erleben ihres Kindes zu identifizieren. Mütterliche Klassifikationen ihrer Kleinkinder, wie sie aus dem WMCI entnommen werden kann ist mit dem Gesundheitszustand des Kindes verbunden.

抄録：乳児をめぐる親の受け止め方と主観的体験は、長いこと、乳児・家族の臨床に非常に重要であると考えられてきた。この論文は、自分の乳児に関する母親の表象をめぐる臨床的面接の結果を報告し、それを、乳児一般に関する母親の表象と比較する。failure-to thriveのある乳児の母24名（とマッチしたコントロール25名）、睡眠障害のある幼児の母親17名（とマッチしたコントロール20名）、そして、乳幼児精神科クリニックに来た乳児の母13名が、この研究に参加した。臨床問題がない乳児の母親に比べ、臨床問題のある乳児の母親は、歪曲された、あるいは、切り離されたと分類とされる可能性の高い表象を、自分の乳児に関して持っていた。母親による分類と、乳児の性別、年齢、出生順位は相関しなかった。乳児をめぐる母親の受け止め方と主観的体験の問題点を特定するのに、WMCIは、構造的臨床面接として有用である。WMCIを通して得られた、乳児に関する母親の分類は、乳児の臨床的状況と関連していた。

Clinicians who evaluate and treat disordered infant–parent relationships attend simultaneously both to overt behavioral interactions between members of the dyad as well as to the parent's representation of the infant (Zeanah & Barton, 1989). Stern (1995) has pointed out that some therapies are directed toward changing interactions (e.g., McDonough, 1993) and others are directed at changing a parent's representation of the infant (e.g., Cramer, 1987; Lieberman & Pawl, 1993). Despite the importance of parents' representations of their infants in clinical work, there has been remarkably little attention to the construct in systematic investigations.

Following Bowlby's (1969/1982, 1973, 1980) theory, which posits that internal working models shape emotional, cognitive, and behavioral responses within relationships, several means of assessing internal working models of attachment relationships have been developed. Specifically, the Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) is believed to assess 12- to 20-month-old infants' internal working models of their attachment relationship with specific caregivers. George, Kaplan, and Main's (1985) Adult Attachment Interview (AAI) is believed to assess an adult's state of mind with respect to attachment. Both the SS and AAI provide classifications of individuals' subjective experience and perceptions within specific (present or past) attachment relationships.

Some have speculated that internal representations are hierarchically arranged, with event and scenario schemas arranged at lower levels and more global representations at higher levels (Bretherton, 1985; Stern, 1985, 1989). A caregiver's internal working model of a child may be conceptualized as the perceptions and subjective experience a caregiver has of that particular child and of the relationship with that child. Theoretically, this differs from the internal working model measured by the AAI, which concerns an individual's perceptions of his or her past attachment figures and of his or her current state of mind with respect to attachment. It seems likely that a caregiver's representation of attachment, as measured by the AAI, is a more global construct than a caregiver representation of a particular child (Zeanah & Barton, 1989).

Using the AAI, caregivers' descriptions of their own childhood relationship experiences are classified as *Autonomous* when they are coherent, emotionally integrated, and straightforward; as *Dismissing* when they are unconvincingly idealized, emotionally constricted, or frankly devaluing; as *Preoccupied* when they are confused and/or emotionally labile; as *Unresolved* when significant losses or severe traumas are described incoherently; or as *Cannot Classify* when none of the previous classifications adequately captures the overall narrative pattern. AAI patterns define an overall orientation in attachment relationships, and they have been shown to be a valuable measure of parenting (van IJzendoorn, 1995; van IJzendoorn & Bakermans-Kranenberg, 1996).

The study of the more specific internal working model that a caregiver maintains of his or her child and relationship with the child has important clinical and research implications. For instance, the ability for a clinician to assess systematically the "meaning" a child has for his or her parents and to identify major themes in the caregiver's perceptions and subjective experience of who their infant is and why he or she behaves in particular ways, allow clinicians to tailor infant-parent psychotherapy to the specific needs of a given caregiver-infant dyad (Zeanah & Benoit, 1995). Similarly, for researchers to be able to assess formal and other narrative features of a caregiver's representations of a particular infant has much to contribute to the study of infant-parent relationships of their children.

Several groups of researchers have developed instruments to assess caregivers' internal working models of their child, relationship with the child, and their parenting role (Aber, Slade, Cohen, & Meyer, 1989; Bretherton, Birigen, Ridgeway, Maslin, & Sherman, 1989; Cramer et al., 1990). Unfortunately, validity data about these instruments has been limited.

One recent measure does have a growing body of data evaluating its validity. The Working Model of the Child Interview (WMCi) is a structured interview developed as a means for classifying parents' perceptions and subjective experience of their infant's

individual characteristics and the relationship with the infant (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). Although the WMCI was originally developed as a research tool, its clinical relevance also has been noted (Zeanah & Benoit, 1995). During the roughly hour-long interview, a parent is asked to describe his or her emotional reactions during the pregnancy, the infant's personality and development, characteristics of the relationship with the infant, perceived and anticipated difficulties with infant characteristics, reactions to infant behavior and distress in a variety of contexts, and anticipated difficulties in later development. Responses are audio recorded and verbatim transcripts are then rated using eight anchored, 5-point, primary rating scales: richness of perceptions, openness to change, intensity of involvement, coherence, caregiving sensitivity, acceptance, infant difficulty, and fear for infant safety.

The *richness of perception* scale assesses how rich and elaborate descriptions of the infant are. Succinct yet rich descriptions conveying a sense that the caregiver "knows" the infant receive higher scores on this scale than lengthy, repetitive, narrowly focused, or uninformative descriptions that do not convey a clear image of the infant.

The *openness to change* scale measures the flexibility of the parent's representation to accommodate new information about the infant, parenting, and the relationship with the infant. High scores are given when the narratives convey a sense that new information about the infant would be welcomed and accommodated by the caregiver, or when a new appreciation for, or a new perspective on, the infant results during the interview itself. Low scores are given when 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.

The *intensity of involvement* scale assesses the degree of psychological preoccupation and/or the caregiver's psychological immersion in the relationship with the infant. At the high end of the scale, caregivers convey a clear sense of psychological involvement with their infants. Low scores are given when caregivers appear uninvolved either because they are preoccupied by other concerns or because they are psychologically detached from the infant.

The *coherence* scale is derived from and essentially analogous to the coherence scale used in scoring the Adult Attachment Interview (Main & Goldwyn, 1991). High scores are given when exceptional thoughtfulness and clarity characterize the caregiver's descriptions and when responses are direct, straightforward, and responsive to probes. Low scores are given when 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.

The *caregiving sensitivity* scale assesses both the degree to which the caregiver recognizes the infant's own needs and affective experience and the quality of the caregiver's response to those needs. Ratings at the high end of the scale indicate that the caregiver both perceives the infant as experiencing a variety of emotional states and biological needs and respects these states and needs. At the lower end of the scale, the caregiver fails either to recognize or to respond consistently and sensitively to the infant's needs.

The *acceptance* scale assesses the caregiver's acceptance of the infant and all the challenges and responsibilities that caring for him or her entails. High scores are given when there is no evidence of resentment or conflicts about caring for the infant and when the

caregiver conveys explicitly or implicitly a sense of delight about caring about the infant. Low scores are given when the caregiver conveys the impression that he or she does not like the infant, or expresses resentment or conflicts about caring for the infant, anger in response to the infant's need for comfort, or a pervasive sense of aversion to the infant.

The *infant difficulty* scale assesses the caregiver's perception of the infant as difficult to care for or relate to. High scores are given when description of the infant as difficult is a major theme of the interview and when the infant is considered to be so difficult as to be a definite burden. Low scores are given when the infant is perceived as easy to care for and relate to.

The *fear for safety* scale is used to assess the irrational fear of loss of the child. High scores are given when there is clear evidence that the caregiver fears for the child's basic health and safety, no apparent reason for the fear is present, and the caregiver's behavior toward the child is affected. Low scores are given when no fears for the infant safety or health are expressed. This scale is derived from the "fear of loss of the child through death" scale used in scoring the Adult Attachment Interview.

In addition to the eight primary scales described above, eight secondary rating scales are used to assess the "affective tone" of the caregivers' representation. These secondary scales use 5-point scales to score the amount of joy, anxiety, pride, anger, guilt, indifference, disappointment, and other emotions expressed by the caregiver during the interview.

When the interview is used for research purposes, patterns of scores on each of the eight primary scales are examined and a tripartite system is used to classify the parents' representations into one of three categories: *balanced*, *disengaged*, and *distorted*. The same coding strategy is used in clinical settings, although clinicians might be especially interested in the information obtained from the specific scales rather than in the overall classification.

Transcripts classified as *balanced* are characterized by moderate to high scores on the coherence scale, suggesting that the caregiver provides a coherent description of perceptions and subjective experience of the infant and the relationship with the infant. Both positive and negative characteristics of the infant or aspects of the relationship are usually described. Parents with balanced representations convey a sense of being engrossed in the relationship with their infant (high scores on the intensity of involvement scale). The transcripts usually reflect a pervasive acceptance and respect for the infant's individuality (high scores on the acceptance scale), an empathic appreciation for the infant's subjective experience, and valuing of the relationship with the infant (high scores on caregiving sensitivity). The narrative descriptions generally receive moderate to high scores on both the openness to change and richness of details scales, and low to moderate scores on the infant difficulty scale. Moderate to high scores may be given on the joy and pride scales and low scores on anxiety, anger, disappointment, and indifference scales are generally obtained.

Disengaged representations are characterized by various degrees of coolness, emotional distance, or indifference about the infant. Parents with disengaged representations do not seem to be aware of the infant's subjective experience or to "know" the infant as an individual. Alternately, if the infant's experience is recognized, it is neither fully accepted nor valued. Details provided about the infant or the parenting experience may be impoverished, and they seem relatively resistant to change. Unelaborated descriptions

having a pat quality may be characteristic. As a result, the narrative does not convey a sense of the infant as a distinctive individual. Some parents with disengaged representations do not have genuine interest or curiosity about the infant and the infant's experience. They may approach the topic of the infant at a "cognitive" level, remote from feelings and emotions. Ridiculing or dismissing the infant's feelings are strong indicators of disengaged representations. In extreme cases, actual aversion to the infant is present. Finally, the impact of parenting on the infant and the self as a parent remains unintegrated or is dismissed altogether as unimportant and noninfluential. In summary, low scores on the richness of perception, openness to change, acceptance, caregiving sensitivity, and intensity of involvement scales and high scores on the indifference scales usually characterize disengaged classifications.

Distorted representations are characterized by several types of distortion imposed on the representation of the infant and/or relationship with the infant. Distortion here refers to an internal inconsistency within the representation rather than to a distortion of "objective" reality. For example, narratives may convey a sense of the parent as preoccupied or distracted by other concerns, confused and anxiously overwhelmed by the infant, self-involved and insensitive to the infant as an individual, expecting the infant to please or to be reasonable or excessively compliant. Parents with distorted representations often have unrealistic expectations of their infant or may attribute malevolent intentions to the infant. Descriptions of the infant may be highly coherent in the sense of being confused, contradictory, or even bizarre. Narratives often suggest an unsuccessful struggle to feel close to the infant. Much feeling (both negative and positive) is often expressed about the infant, but these expressions lack modulation or seem out of context. In summary, low scores on the coherence, openness to change, and caregiving sensitivity scales and high scores on the intensity of involvement, anxiety, and/or anger scales often characterize distorted classifications. High scores on the infant difficulty and disappointment scales may be present.

Preliminary investigations using this interview with mothers from low-risk, nonclinical, middle- to upper-middle-class backgrounds have addressed stability and predictive validity of the WMCI (Benoit, Parker, & Zeanah, in press; Zeanah et al., 1994). In these two studies, the author(s) demonstrated (a) that it was possible to establish reliable coding of these highly subjective interviews; (b) a significant association between mothers' narrative descriptions of their infants (WMCI classifications) and infants' Strange Situation (SS) classifications assessed prospectively (Benoit et al., in press); and stability of WMCI classifications from the third trimester of pregnancy to 11 months after the child's birth (Benoit et al., in press). These studies are described in more detail below.

In the first study (Zeanah et al., 1994), the mothers of 45 infants were interviewed with the WMCI 1 to 2 weeks before their infants were seen in the SS with them at 12 months. The concordance between mothers' WMCI classifications and their infants' SS classification (defined as balanced-secure, disengaged-avoidant, and distorted-resistant), was 69% ($K = .50$).

In the Benoit et al. (in press) study, the concordance between the WMCI classifications and infant SS classifications in 78 mother-infant dyads, assessed within 1 to 2 weeks when the infants were 12 months old, was 73% (vs. 55% expected by chance alone; $K = .40$, $p < .001$). In the same study, mothers' WMCI classifications obtained prenatally (during the third trimester of pregnancy) were significant predictors of infants' SS classifications with them 12 months later. Of the 85 mother-infant dyads for

whom such data were available, the observed match between prenatal WMCI and 12-month SS classifications was 74% (vs. 54% expected by chance alone; $K = .44$, $p < .001$). Note that the overall stability of the WMCI classifications in that study (from the third trimester of pregnancy to 12 months postpartum) was 80% (vs. 51% expected by chance alone, $K = .59$, $p < .001$). Interrater agreement was established with one coder experienced in the coding of the WMCI (also experienced in the coding of the AAI) and one inexperienced coder. Interrater agreement on the 46 (26%) randomly selected transcripts used to establish interrater reliability was 87% ($K = .67$; see Benoit et al., in press, for details). This study demonstrated that neither knowledge/expertise in the AAI scoring system nor clinical experience was necessary in order to become a reliable coder of the WMCI.

The strongest concordance demonstrated in the Benoit et al. (in press) study was that mothers classified as balanced had infants classified as secure. Further, it was possible to predict whether or not an infant would be classified as secure in the SS based on how the mother described the baby before the baby was born. These findings are important because infant attachment classifications have been related to later socioemotional development and adjustments (Sroufe, 1988).

The purpose of the present paper is to extend these preliminary results about the psychometric characteristics of the WMCI into the clinical arena by examining mothers' representations of clinically referred infants. Specifically, we report results of three related studies assessing mothers' WMCI classifications of their infants among samples of clinically referred infants. We predicted that mothers' WMCI classifications would distinguish clinical and nonclinical groups; that is, we predicted that fewer mothers of infants and toddlers with clinical problems would be classified as balanced than mothers of children without clinical problems.

METHOD

Overview of the Investigations

Data reported here were collected on 99 mothers and their infants or toddlers who participated in three separate clinical studies: 54 mothers of infants and toddlers with clinical problems and 45 mothers of infants and toddlers without clinical problems. The three clinical studies in which subjects participated were studies of infants diagnosed with failure to thrive, infants diagnosed with sleep disorders, and infants referred to an outpatient infant psychiatry clinic. Each of these studies had somewhat different measurement protocols, although all protocols included the use of the WMCI.

All subjects provided informed consent prior to participating in the original studies. Children's age in the total sample ($n = 99$) ranged from 2 weeks to 67 months old (mean = 18.52; $SD = 15.04$). Mothers' age ranged from 16 to 42 years (mean age = 26.66; $SD = 6.13$) and the number of years completed at school ranged from 4 to 19 years (mean = 12.31; $SD = 2.83$). There were no statistically significant differences between the clinical (failure to thrive + sleep disorder + infant clinic) and comparison groups on measures of maternal age, maternal education, marital status and infant age, gender, and birth order. Further, using one-way ANOVA, there was no relationship between infant age and mothers' WMCI classifications.

STUDY #1: MOTHERS OF INFANTS WITH FAILURE TO THRIVE

Subjects

The first clinical study included 49 subjects from an investigation of characteristics of mothers of infants with failure to thrive (FTT). In the study, 24 mothers had hospitalized infants with FTT and 25 mothers had hospitalized infants who were growing normally. The sample is described more completely elsewhere (Benoit, Zeanah & Barton, 1989). In brief, mothers who participated in this study were from an American inner city. They were highly stressed, came from impoverished backgrounds, and 49% had not graduated from high school. Infants ranged in age from 1.5 to 29 months (mean age = 7.63 months, $SD = 5.89$). Mothers' mean age and education in the FTT group were 23.76 years ($SD = 4.84$) and 10.64 years ($SD = 2.13$), respectively (Benoit et al., 1989). There were no significant differences between the FTT and control groups on demographic variables, including maternal age, maternal education, marital status, infant age, gender, and birth order.

Measures and Procedures

Mothers were recruited to participate in a study of infant–parent relationships. After giving informed consent, they were interviewed with a variety of measures including the WMCI. Because of its focus on details about the infant's development and behavior and the mother's perspective on the baby and her relationship with baby, the WMCI was readily accepted by all subjects. All WMCIs were audio-recorded, transcribed verbatim, and scored by a coder who was unaware of the nature of the investigation or the group membership of the mothers. A second coder, who was unaware of clinical status of mothers and infants rated 18 (37%) randomly selected transcripts. Interrater agreement on these transcripts was 89% ($K = .80$). Differences were resolved by conferencing.

Results

As seen in Table 1, 13% of the mothers of FTT infants had WMCI classifications of balanced, as opposed to 40% of mothers of control infants. In this small sample, these apparent differences did not attain conventional levels of statistical significance. As seen in

Table 1
Concordance Between Infants' Clinical Status and Mothers' Working Model of the Child Interview Classifications in Failure to Thrive

	Mothers' WMCI classification			Total N (%)
	Balanced N (%)	Disengaged N (%)	Distorted N (%)	
Infants' clinical status				
FTT*	3(13)	16(67)	5(21)	24(100)
control	10(40)	9(36)	6(24)	25(100)
	13(27)	25(51)	11(22)	49(100)

*Failure to thrive.

Chi-square = 5.80, $df = 2$, $p = n.s.$

Cramer V = .34.

Table 2
Scores on Working Model of the Child Interview Subscales (Failure to Thrive Subsample)

	Clinical group (<i>N</i> = 24)		Control group (<i>N</i> = 25)		<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Scales						
Richness of perceptions	2.02	.68	2.66	.57	-3.56	.001
Openness to change	1.98	.81	2.62	.68	-2.99	.004
Intensity of involvement	2.18	.73	2.92	.72	-3.53	.001
Coherence	2.54	.53	2.70	.54	-1.04	n.s.
Infant difficulty	2.06	.97	2.24	.79	-.70	n.s.
Sensitivity	2.06	.72	2.66	.61	-3.13	.003
Acceptance	2.17	.70	2.72	.63	-2.91	.006
Fear for safety	2.39	1.00	2.02	.81	1.45	n.s.
Joy	1.95	.69	2.28	.84	-2.86	.006
Pride	1.19	.49	1.50	.80	-1.66	n.s.
Anger	1.29	.75	1.32	.59	-.15	n.s.
Disappointment	1.33	.55	1.38	.69	-.26	n.s.
Anxiety	1.08	.28	1.20	.50	-1.01	n.s.
Guilt	1.17	.41	1.34	.54	-1.27	n.s.
Indifference	2.15	1.09	1.66	.72	1.84	n.s.

Table 2, compared to their matched counterparts, mothers of hospitalized infants with FTT provided fewer details about their infants, were more rigid in how they perceived their infant, were more distant emotionally, were less sensitive and less accepting of their infant's individuality and needs, and expressed less joy when describing their infant. It is interesting to note that mothers of infants with FTT did not perceive their infant to be more difficult than mothers of thriving infants.

STUDY #2: MOTHERS OF INFANTS WITH SLEEP DISORDERS

Subjects

Subjects of this investigation were 37 mothers who were enrolled in a study examining the association between maternal characteristics and sleep disorders in toddlers. The index group consisted of 16 mothers of toddlers with sleep disorders and the control group consisted of 21 mothers of toddlers without sleep problems. The original sample has been described elsewhere (Benoit, Zeanah, Boucher, & Minde, 1992). In brief, subjects who volunteered for this study were Canadian mothers who were from middle- to upper-middle-class backgrounds. Toddlers ranged in age from 18 to 46 months (mean age = 32.76 months, *SD* = 7.62). Mothers' mean age and education in the sleep disorder group were 30.65 years (*SD* = 5.65) and 15.00 years (*SD* = 2.29), respectively. Mothers in the control group were not significantly different. The two groups were also comparable with regard to marital status, infant age, gender, and birth order.

Measures and Procedures

Mothers were recruited to participate in a study of families whose infants had sleep problems. After giving informed consent, mothers were assessed with a variety of measures including the WMCI. Because of its focus on details about their infants' behavior

Table 3
Concordance Between Infants' Clinical Status and Mothers' Working Model of the Child Interview Classifications in Sleep Disorders

	Mothers' WMCI classification			Total N (%)
	Balanced N (%)	Disengaged N (%)	Distorted N (%)	
Infants' clinical status				
Sleep disorder	0(0)	7(41)	10(59)	17(100)
Control	7(35)	6(30)	7(35)	20(100)
	7(19)	13(35)	17(46)	37(100)

Chi-square = 7.41, $df = 2$, $p = .02$.

Cramer V = .45.

and development, the interview was readily accepted by these subjects. All of the WMCI were audio-recorded, transcribed verbatim, and then scored by a coder who was unaware of the nature of the investigation or of clinical status. A second coder, who was unaware of clinical status, scored 13 (35%) randomly selected transcripts. Interrater agreement on these transcripts was 54% ($K = .34$). Differences were resolved by conferencing. One possible explanation for lower interrater reliability in this sample is that these transcripts were among the first coded by a newly trained rater. Additional training was provided after these transcripts were coded, and interrater reliability became acceptable in this and the other samples reported in this paper.

Results

Table 3 reveals that none of the mothers of toddlers with sleep disorders had WMCI classifications as balanced. In contrast, almost half of the mothers of control group infants were classified balanced with the WMCI. These differences were statistically significant. Mothers of toddlers with and without sleep problems differed on only one rating scale, however, openness to change. This suggests that as a group, mothers of infants with sleep disorders had more rigid and inflexible perceptions of their child.

STUDY #3: MOTHERS OF CLINICALLY REFERRED INFANTS

Subjects

Subjects in this third clinical sample were 13 mothers of infants who had been referred to an infant psychiatry clinic by physicians or by child protective services, for a variety of problems including suspected/documentated maltreatment ($N = 5$), infant-parent relationship problems without maltreatment ($N = 3$), and feeding problems/FTT ($N = 5$; note that one child with FTT also had sleep problems). Subjects in this sample were Canadian mothers, primarily from low socioeconomic backgrounds. Mothers' ages ranged from 18 to 34 years (mean = 23.85, $SD = 5.19$) and educational levels ranged from 8 to 15 years (mean = 11.38, $SD = 2.14$), respectively. Infants ranged in age from 2 weeks to 67 months old (mean age = 19 months, $SD = 20.62$).

Measures and Procedures

As part of routine clinical evaluation of infants in the clinic, mothers were interviewed using the WMCI. They consented to having the interviews audiotaped, transcribed verbatim, and being used in an investigation of how mothers think and feel about their infants. Transcripts of the WMCI were scored by a coder unaware of the nature of the investigation or infant clinical status. A second coder classified four (23%) of the transcripts and interrater agreement was 100%.

Results

Two (15%) narratives from mothers of infants referred for intervention were classified as balanced, four (31%) were classified as disengaged, and seven (54%) were classified as distorted.

OVERALL RESULTS ON COMBINED SAMPLES

Interrater agreement for coding of WMCI transcripts for the total sample was 76% (established on 33 of 99 transcripts), compared to 35% expected by chance alone ($\chi^2 = 30.76$, $df = 2$, $p < .001$, $K = .64$). Interrater reliabilities on the primary rating scales ranged from 0.46 (fear for safety) to 0.77 (intensity of involvement), with a median of 0.69. On the secondary rating scales, interrater reliabilities ranged from 0.46 (disappointment) to 0.90 (guilt), with a median of 0.72. Differences in WMCI classifications were used for data analysis.

As seen in Table 4, 91% of mothers of infants with clinical problems were classified as either distorted ($N = 18$; 33%) or disengaged ($N = 31$; 57%), compared to 58% of the control group mothers ($\chi^2 = 14.73$, $df = 2$, $p < .001$). Only 9% (5/54) of mothers of infants with clinical problems were classified as having balanced representations, compared to 42% (19/45) of mothers of infants without clinical problems. Table 5 shows that when interviewed with the WMCI, mothers of infants with clinical problems conveyed less information about their infants, were less open to change their perceptions, were less involved, less sensitive, less accepting, and expressed less joy and pride and overall coherence when describing their infant and their relationship with their infant.

Table 4
Concordance Between Infants' Clinical Status and Mothers' Working Model of the Child Interview Classifications

	Mothers' WMCI classification			Total <i>N</i> (%)
	Balanced <i>N</i> (%)	Disengaged <i>N</i> (%)	Distorted <i>N</i> (%)	
Infants' clinical status				
Clinical	5(9)	27(50)	22(41)	54(100)
Nonclinical	17(38)	15(33)	13(29)	45(100)
	22(22)	42(42)	35(35)	99(99)

Chi-square = 11.57, $df = 2$, $p = .003$.
Cramer V = .34.

Table 5
Scores on Working Model of the Child Interview Subscales (Total Sample)

	Clinical group (<i>N</i> = 54)		Control group (<i>N</i> = 45)		<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Scales						
Richness of perceptions	2.27	.66	2.74	.59	-3.75	.000
Openness to change	2.17	.70	2.72	.65	-4.08	.000
Intensity of involvement	2.39	.85	2.91	.73	-3.22	.002
Coherence	2.47	.46	2.74	.61	-2.50	.01
Infant difficulty	2.45	1.02	2.34	.87	.58	n.s.
Sensitivity	2.13	.61	2.54	.67	-3.19	.002
Acceptance	2.24	.64	2.68	.78	-2.99	.004
Fear for safety	2.39	.94	2.02	.85	2.04	.04
Joy	1.74	.78	2.14	.79	-2.54	.01
Pride	1.19	.46	1.53	.84	-2.48	n.s.
Anger	1.38	.78	1.50	.67	-.83	n.s.
Disappointment	1.50	.72	1.40	.74	.68	n.s.
Anxiety	1.39	.71	1.34	.59	.41	n.s.
Guilt	1.20	.50	1.38	.59	-1.56	n.s.
Indifference	1.88	.99	1.77	.90	1.23	n.s.

DISCUSSION

Taken together, these results provide evidence that the WMCI can be applied in clinical settings as a measure of parents' perceptions of their infants. The central finding in this study is that classifications of mothers' perceptions and subjective experience of their infant (as assessed by the WMCI) distinguished infants with clinical problems from those without clinical problems. Nevertheless, specific WMCI classifications did not characterize specific clinical problems, much as neither specific AAI or SS classifications characterize specific clinical problems. WMCI classifications appeared to indicate increased risk for the development of a variety of clinical problems. Thus, WMCI classifications may be sensitive (albeit not specific) means of identifying parent-infant dyads at risk for clinical problems. The finding that 91% of mothers of infants with clinical problems were classified as having disengaged or distorted representations, compared to 62% of controls suggest that as a group, mothers of infants and young children with clinical problems convey less empathic appreciation for their infant's individuality and experience when interviewed about their child and relationship with their child in a structured, clinical interview.

Because of the cross-sectional design, the question of whether maternal representations of their child with clinical problems contributed to, or resulted from the infants' clinical problems was not addressed. It is unlikely that maternal perceptions alone could account for the development and the perpetuation of a child's clinical problems. Nevertheless, maternal perceptions and subjective experience of the child are likely to be important associated features, especially during infancy and early childhood. The concordance between WMCI and SS classifications demonstrated previously (Benoit et al., 1994; Zeanah et al., 1994) tends to support this hypothesis.

In the study, specific WMCI classifications were not associated with specific clinical problems in the infant (a phenomenon also observed when using instruments such as the

SS and AAI). This finding supports clinical experience with infants suggesting that a combination of risk and protective factors usually coexist and even interact to produce the final clinical picture of an infant with a specific clinical problem. Given the heterogeneity of various clinical problems in infancy and our current state of knowledge, it seems unrealistic to expect that any one instrument aimed at assessing internal working models of relationship would reliably identify specific clinical problems in infants. Instead, it seems more realistic that such instruments could identify risk or protective factors related to the development or perpetuation of clinical problems. A caregiver's balanced WMCI classification might represent a protective risk factor for the infant, whereas either disengaged or distorted classifications might represent risk factors. Future research is needed to address these questions. Other related questions need further research, including the effects of having a parent with a nonbalanced WMCI classification (in the context of having an autonomous AAI classification) or a nonautonomous AAI classification (in the context of having a balanced WMCI classification).

The most common WMCI classification in the combined clinic groups was disengaged (50%). This classification reflects emotional detachment and coolness or indifference toward the infant and the infant's experience. Disengaged representations were especially common in mothers of infants with FTT (67%), but less common in the infant clinic group (31%), although the infant clinic group was small.

Although disengaged and distorted classifications were more prevalent in the clinical than nonclinical groups, it must be stressed that a substantial minority of mothers of infants with clinical problems also received disengaged (33%) and distorted (29%) classifications. This finding suggests that other factors, in addition to a nonbalanced representation, must contribute to the development or perpetuation of clinical problems in infancy and early childhood. Mothers whose interview responses were classified as disengaged or distorted appeared to have infants at increased risk for the development or perpetuation of clinical disorders. Factors that lead a parent to develop a specific type of representation should be explored in future research, in addition to examining ways of changing them.

A series of studies using three samples with different demographic characteristics and from two different countries might be considered a limitation. However, given that results are comparable in all subsamples (irrespective of demographic characteristics, including socioeconomic status), this study may also be viewed as a replication of findings across other samples which include various socioeconomic strata, clinical problems, and children ranging in age from early infancy to 4 years old. Nevertheless, we consider these results preliminary and look forward to attempted replications with larger samples of clinically referred infants.

Clearly, findings from this study highlight the importance of systematically attending to parents' perceptions and subjective experience of their young children in clinical settings. Most mother-infant psychotherapies have been noted to involve, directly or indirectly, maternal representations of their infants (Stern-Brushweiler & Stern, 1989). Structured instruments such as the WMCI make it possible to measure change in some aspects of these internal representations. For instance, if a clinician were to aim his or her intervention at changing a mother's emotional involvement and caregiving sensitivity to her infant, then theoretically, the WMCI should be able to measure/quantify these changes by using pre- and posttreatment scores obtained on the intensity of involvement

and caregiving sensitivity scales. Future research should examine the usefulness of an instrument such as the WMCI on both ongoing clinical work with parent–infant dyads and on outcome studies of mother–infant psychotherapy.

Findings from the present study suggest several other directions for future research. First, the mechanisms by which parents' internal working models of their infants and relationship with the child influence the child's development and adjustment remain to be explored. The related question about whether (and how) parents' WMCI classifications influence actual parental behavior and interactions with the infant in a variety of contexts (e.g., play, feeding, teaching, attachment-related contexts) is an important focus of future research. It is possible that a disengaged representation is associated with the development of clinical problems in the infant because of the parent's emotional detachment, indifference, and insensitive caregiving in the form of low acceptance (or rejection) of the child's needs and emotions. In such an environment, the infant might feel unloved, unimportant, or actively disliked and rejected. It is also possible that a distorted representation is associated with clinical problems in the developing child because of the highly emotional (often negative) atmosphere generated by the caregiver who also has unrealistic expectations of the child and might attribute bizarre intents to the growing child. Finally, growing up with a parent who has a balanced representation of the child might lead a child to feel that his or her needs will be recognized, understood, and consistently responded to with sensitivity. Growing up in such an environment of respect, love, and affection might act as a protective factor against the development of emotional and behavioral problems. Clearly, these hypotheses need empirical testing.

Second, factors mediating the impact of parental attributions and perceptions of their infants on the child's later outcome also need to be examined. For instance, factors such as the parents' psychological functioning, marital satisfaction, social support, presence of other caregivers, extended family, and life stresses could mediate the impact of parental representations.

Third, the question of whether parents have specific internal working models (WMCI classifications) for specific children should be examined. It is clearly counterintuitive that parents perceive and experience each of their children similarly, despite many differences in children. It is possible, however, that the qualitative features or rules used to organize parents' representations of their children are similar, despite difference in content. We look forward to these and other questions to be addressed in future research.

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