
WATCH, WAIT, AND WONDER: TESTING THE EFFECTIVENESS OF A NEW APPROACH TO MOTHER–INFANT PSYCHOTHERAPY

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ABSTRACT: This research compared two forms of psychodynamic psychotherapeutic interventions for 67 clinically referred infants and their mothers. One was an infant-led psychotherapy delivered through a program called Watch, Wait, and Wonder (WWW). The other was a mother–infant psychotherapy (PPT). Infants ranged in age from 10 to 30 months at the outset of treatment, which took place in weekly sessions over approximately 5 months. A broad range of measures of attachment, qualities of the mother–infant relationship, maternal perception of parenting stress, parenting competence and satisfaction, depression, and infant cognition and emotion regulation were used. The WWW group showed a greater shift toward a more organized or secure attachment relationship and a greater improvement in cognitive development and emotion regulation than infants in the PPT group. Moreover, mothers in the WWW group reported

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a larger increase in parenting satisfaction and competence and decrease in depression compared to mothers receiving PPT. Both WWW and PPT were successful in reducing infant -presenting problems, decreasing parenting stress, and reducing maternal intrusiveness and mother–infant conflict. Some potential reasons for the differential treatment effects and the theoretical, clinical, and methodological implications from the findings are discussed.

RESUMEN: Esta investigación comparó dos formas de intervenciones sicodinámicas y sicoterapéuticas para 67 infantes clínicamente referidos y sus madres. Una de las formas fue una sicoterapia guiada por el infante, la cual se presentó a través de un programa llamado “Watch, Wait, and Wonder” (WWW), y la otra fue una sicoterapia basada en la formulación (PPT). Los infantes tenían entre 10 y 30 meses al momento de comenzar el tratamiento, el cual se llevó a cabo en sesiones semanales en 5 meses aproximadamente. Se usó una variedad de medidas de la afectividad, la calidad de la relación entre la madre y el infante, la percepción de la madre sobre la tensión de ser madre, la satisfacción de ser madre y la habilidad para serlo, la depresión, así como el conocimiento del infante y la regulación de las emociones. El grupo WWW mostró un mayor cambio hacia una más organizada o segura relación de afectividad que los infantes en el grupo PPT, así como un mejoramiento en el desarrollo cognitivo y la regulación de las emociones. Es más, las madres en el grupo WWW reportaron un mayor aumento en la satisfacción y habilidad para ser madres, y una baja en cuanto a la depresión, si se les compara con las madres del grupo PPT. Tanto el grupo WWW como el grupo PPT tuvieron éxito en reducir los problemas que presentan los infantes, bajaron el nivel de tensión causado por el hecho de ser madres, y redujeron las frecuentes intervenciones maternas y el conflicto entre madre e infante. Se discuten algunas de las posibles razones en cuanto a los efectos del tratamiento diferenciado, y las implicaciones teóricas, clínicas y metodológicas de estos hallazgos.

RÉSUMÉ: Cette recherche a comparé deux formes d'interventions psychodynamiques psychothérapeutiques pour 67 nourrissons envoyés en consultation clinique et leurs mères. L'une des deux interventions a consisté en une psychothérapie menée par l'enfant et offerte à travers un programme appelé Regardez, Attendez et Etonnez-vous (abrégié RAE en français). L'autre intervention a consisté en une psychothérapie basée sur la formulation (PPT en anglais). L'âge des nourrissons variait de 10 à 30 mois au commencement du traitement, qui a eu lieu durant des séances hebdomadaires pendant à peu près 5 mois. Un grand registre de mesures d'attachement, de qualités de la relation mère-nourrison, de perception maternelle du stress parental, de compétence en matière de parentage, et de satisfaction, dépression, cognition infantile et ajustement émotionnel a été utilisé. Le groupe RAE a fait preuve d'une mutation plus grande vers une relation d'attachement plus organisée et plus sûre, ainsi que d'une plus grande amélioration en matière de développement cognitif et d'ajustement émotionnel que les nourrissons du groupe PPT. De plus, les mères du groupe RAE ont fait état d'une augmentation bien plus grande de satisfaction et de compétence en matière de parentage, ainsi que d'une diminution de dépression, comparées aux mères recevant la PPT. Les mères RAE et PPT ont réussi à réduire les problèmes que posent les nourrissons, et elles ont aussi réussi à réduire le stress parental, l'intrusion maternelle et le conflit mère-nourrison. Certaines raisons possibles pour les effets différentiels de traitement et les implications théoriques, cliniques et méthodologiques de résultats sont discutées.

ZUSAMMENFASSUNG: Diese Untersuchung verglich zwei Arten der psychodynamisch—psychotherapeutischen Interventionen bei 67 Kleinkindern und deren Mütter, die in die Ambulanz geschickt worden waren. Eine der beiden Psychotherapien orientierte sich am Kleinkind mittels eines Programms, das: Schau, Warte und Präge Dich (WWW) genannt wurde, die andere Psychotherapie war klassisch (PPT). Das Alter der Kinder war 10–30 Monate am Beginn der Therapie, die bei wöchentlichen Abständen im Schnitt 5 Monate dauerte. Eine große Anzahl von Meßmethoden kam zur Anwendung: Bindung, Qualität der Mutter—Kind Beziehung, mütterliche Wahrnehmung der Belastung durch die Elternschaft, elterliche Kompetenz und Befriedigung, Depression, kindliche Kognition und emotionale Regulation. Die “WWW-Gruppe” zeigte eine größere Veränderung zu einer sichereren, oder stärker strukturierten Bindung und eine größere Verbesserung in der kognitiven Entwicklung und der emotionalen Regulation der Kinder,

als die in der “PPT-Gruppe”. Darüberhinaus berichteten die Mütter der “WWW-Gruppe” über eine größere Verbesserung in der elterlichen Befriedigung und Kompetenz und einen Rückgang der Depressionen im Vergleich zu den Müttern, die PPT erhalten hatten. Beide—WWW and PPT—waren erfolgreich bei der Reduzierung der Präsentiersymptome des Kindes, Reduzierung des elterlichen Streß und bei der Reduktion der Einmischung der Mütter und den Mutter—Kind Konflikten. Einige mögliche Gründe für die unterschiedlichen Behandlungsergebnisse und die theoretische, klinische und methodologische Bedeutung unserer Ergebnisse werden diskutiert.

抄録：この研究では、67 例の臨床的に紹介された乳幼児とその母親への、2つの形式の精神力動的心理療法的介入を比較した。一つは「見て待って考える」(Watch, Wait and Wonder:WWW)と呼ばれるプログラムを通して提供される乳幼児主導型心理療法であり、もう一つは定式化に基づいた心理療法(formulation based psychotherapy:PPT)であった。約5カ月にわたる毎週のセッションの治療開始時には、乳幼児の月齢は生後10から30カ月までだった。愛着、母—乳幼児関係性の質、母親の育児ストレスの認知、育児の能力と満足度、抑うつ、および乳幼児の認知と感情調節の、広い範囲の測定が行われた。WWWグループは、PPTグループの乳幼児よりも、より組織化されたあるいは安全な愛着関係性への移動がより大きく、認知発達と感情調節における改善がより大きいことが示された。さらにWWWグループの母親は、PPTを受けた母親に比べ、養育の満足と能力の増加と、抑うつの減少がより大きいと報告された。WWWとPPTの両者は乳児が表している問題を弱め、養育のストレスを減らし、母親の侵入性と母—乳幼児葛藤を弱めるのに、成果があった。治療効果の違いについて可能性のある理由、および所見の理論的、臨床的および方法論的意味について考察する。

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A baby has none of the conventional attributes of a psychiatric patient. He can't talk about his problem. He can't form a therapeutic alliance. He has no capacity for insight. Such patients are usually labelled not suitable for treatment in the language of psychotherapy (Fraiberg, Shapiro, & Cherniss, 1983, p. 56).

A challenge in mental health interventions for infants is that although it is infants who are of greatest clinical concern, the actual focus of treatment is on the parents. This is most commonly performed either by directly altering parents' behavior with their infant (e.g., Bakermans-Kranenburg, Juffer, & van IJzendoorn, 1998; McDonough, 1992) or by altering their mental representation of their relationship with their infant (Bakermans-Kranenburg et al., 1998; Cramer et al., 1990; Fraiberg, Adelson, & Shapiro, 1987; Lieberman, Weston, & Pawl, 1991; Robert-Tissot et al., 1996; Stern, 1995). This study examined a relatively new and innovative approach to infant intervention that shifts the focus to the infant, requiring the parent to follow the infant's spontaneous and undirected activity in much the same way as a psychotherapist observes and follows the lead of an adult patient. This infant-led intervention, delivered through a program called “Watch, Wait, and Wonder,” (WWW) still centers on the parent–infant relationship, but is guided by the infant activity rather than the initiatives of the mother or the therapist. In the present clinical study, we contrasted the relative effectiveness of this infant-led psychotherapy with an alternate form of parent–infant psychotherapy.

Because most infant interventions primarily involve mothers, henceforth the term “mother” rather than the more general term “caregiver” will be used. The pronoun “he” will be used for the infant to easily distinguish the mother from the infant.

ATTACHMENT THEORY AS A BASIS FOR DESIGNING INFANT–PARENT PSYCHOTHERAPIES

Because most emotional and behavioral problems in infancy are seen as relational, there is general agreement that the focus of mental health interventions for infants must be on improving parent–infant relationships. Consistent with much of the current work in the area of infant mental health, the theoretical framework of attachment guided this comparative treatment study in delineating critical relational components and goals of therapy.

Attachment refers to a biologically primed behavioral system which, under threatening conditions, enables infants to seek safety through proximity to their mothers (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969). Bowlby suggested that attachment security depends on the experience that infants have of their mothers, especially in relation to their emotional responsivity and physical proximity when distressed, and physical accessibility when exploring. Considerable evidence has accrued to indicate that for secure attachments to form, and for development to proceed optimally, mothers must perceive their infants' emotional signals, respond to them sensitively, display affection, and accept their infants' behavior and feelings (Ainsworth et al., 1978; Belsky, Rovine, & Taylor, 1984; Emde, 1987; Grossmann, Grossmann, Spangler, Suess, & Unzer, 1985; Sroufe, 1988). Even though recent evidence suggests that the relation between sensitivity and attachment is statistically modest (De Wolff & van IJzendoorn, 1997) because of the centrality of infant–parent attachment relationships and their potential for change, interventions have focused on altering maternal sensitivity and responsiveness to infants' signals. This has been done by changing maternal behavioral directly (e.g., Bakermans-Kranenburg et al., 1998; McDonough, 1992), by altering the mother's mental representation of her relationship with her infant, which is presumed to effect behavioral change toward the infant (Bakermans-Kranenburg et al., 1998; Cramer et al., 1990; Fraiberg et al., 1987; Lieberman et al., 1991; Robert-Tissot et al., 1996; Stern, 1995), or by working at the representational and behavioral level simultaneously (Muir, 1992; Muir & Thorlaksdottir, 1994).

It is presumed that infants who are securely attached are able to regulate their emotions and have a sense of inner confidence and efficacy. They are more curious and eager to explore their environment, thus taking opportunities for growth and facilitating cognitive development (Murray, 1992). Although considerable attention has been paid to the relational outcomes of attachment security, these indirect effects have received little attention in the clinical literature.

To put the present study into perspective, we need to begin by briefly describing the therapeutic interventions most commonly used with mothers and infants in clinic settings to address relational problems (see Lojkasek, Cohen, & Muir, 1994, for a more complete review). We want to highlight the fact that in most infant mental health interventions, the importance of the nonintrusive *psychological* presence and emotional availability of the mother (maternal sensitivity and derivatives thereof) have been emphasized while less attention has been paid to her actual *physical* presence, which is also of primary importance (Bowlby, 1969). This omission is important because essential to sensitivity and responsiveness is the capacity to follow the infant's lead. Moreover, although attachment theory has helped us to understand the needs of the infant and the role of the mother in the infant–mother relationship, the attachment literature has paid less attention to the infant's activity and play in the mother's presence.

DESCRIPTION OF INFANT–PARENT PSYCHOTHERAPIES

The psychodynamic psychotherapeutic approach assumes that therapy modifies the mother's mental model of her relationship with her infant by exploring the assumptions derived from

her relationships with her own parents (Cramer et al., 1990; Fraiberg et al., 1987; Lieberman et al., 1991; Robert-Tissot et al., 1996). Through the therapeutic relationship, and fuelled by the new and somewhat destabilizing experience of motherhood and current difficulties with the infant, insights are assumed to be facilitated by the reenactment or repetition of the mother's early and other past relationships in her current relationship with her infant. These relationship patterns also emerge in enactments with the therapist through the transference. In this approach, the focus is on the mother gaining insight. Shifts in maternal sensitivity and responsiveness are assumed to result from the mother's increasing capacity to differentiate her infant from herself. This enables her to perceive her infant more objectively and to respond accurately to her infant's needs. While the difficulties in the relationship between mother and infant act as a catalyst for the psychotherapeutic work, the infant and the infant–mother relationship are included in the therapy only indirectly, that is, in the sense that the infant's activity and play can stimulate and provide a motive for maternal change. Although the infant's activity is regarded as an important catalyst, the primary work is between the mother and the therapist. The basic process is the same as adult psychotherapy except that the therapy focuses on the difficulties the mother is experiencing with her infant.

Behaviorally oriented therapies are represented by interventions such as interactional guidance (McDonough, 1992). In this approach, videotaped interactions of mother and infant are used by the therapist to help the mother recognize her own positive responses and interactions with her infant and to elaborate appropriate responsiveness. Mutual enjoyment is emphasized and pleasurable interactions between mother and infant are encouraged, which is presumed to build maternal confidence in her parenting role. While the infant is involved, again, it is only indirectly; the infant's spontaneous activity and expression of needs, feelings, and experiences in relation to his/her mother are subjugated to the focus on the mother. It is the therapist's role to guide the mother to selected infant cues and characteristics to which she is encouraged to attend and respond.

Although the psychodynamic psychotherapy and the behavioral approaches aim to achieve maternal sensitivity and responsiveness, neither explicitly emphasizes the importance of accessibility and proximity of infants to their mothers. Moreover, neither of these treatments involve the infant directly as an active force in his own right in the treatment process. More importantly, while descriptions of therapeutic interventions recount the content of the infant's play as a stimulus for discussion or to provide cues for guidance, they do not address how *infants themselves* use the activity and play to work through their own experience or their developmental and relational struggles.

The notion of the infant as an *initiator* in infant–parent psychotherapy was first proposed by Mahrer, Levinson, and Fine (1976) and further explored by Johnson and colleagues (Johnson, Dowling, & Wesner, 1980; Wesner, Johnson, & Dowling, 1962) who named the technique, “Watch, Wait, and Wonder” as a reminder to mothers of their role in this therapy. The work of Mahrer et al. and Johnson et al. was refined for use in clinical settings by Muir, Stupples, and Guy (1989) and developed further in the context of the Toronto Infant–Parent Program (see Muir, 1992; Muir & Thorlaksdottir, 1994; Muir, Lojkasek, & Cohen, in press). Another form of infant-led psychotherapy, “floor time” (Greenspan, 1992) focuses on specific developmental and relational goals, working on the assumption that sensitive and appropriate responsiveness is essential. In “floor time,” however, the therapist more actively models and guides the mother in ways to interact with her infant in a sensitive and responsive manner than is the case with the approach used by Muir and colleagues.

Following Muir (Muir, 1992; Muir et al., 1989), WWW utilizes a psychodynamic model but, unlike the psychodynamic treatment described above, works at *both the behavioral and the representational levels*. Briefly, in this infant-led psychotherapy, for half the session the

mother is instructed to get down on the floor with her infant, to observe her infant's self-initiated activity, and to interact only at her infant's initiative, thus acknowledging and accepting her infant's spontaneous and undirected behavior and also being physically accessible to him. This fosters an observational reflective stance in the mother and places her in the position of being optimally, or at least more, sensitive and responsive. The infant is directly involved in the WWW process as an agent of change. Thus, WWW works much like play therapy for older children, but with the mother in the therapeutic role. In this capacity the mother becomes the observer of her infant's activity, potentially gaining insight into the infant's inner world and relational needs. At the same time, the infant himself has the therapeutic experience of negotiating his relationship with his mother, and thus begins to master his environment. In the second half of the session, the mother is asked to discuss her observations and experiences of the infant-led play. The therapist does not instruct, give advice, or interpret the infant's activity or play but provides a safe, supportive environment (i.e., a sensitive and responsive environment), so that the mother can express her own observations, thoughts, feelings, and interpretations of her infant's activity and their relationship. The mother and the therapist discuss the mother's observations of her infant's activity and attempt to understand the themes and relational issues that the infant is trying to master, focussing on the inevitable problems that emerge as the mother begins to struggle with following her infant's lead. This permits the mother to examine her internal working models of herself in relation to her infant and vice versa. Through play and the mother's discussion, mother and infant are presumed to modify or revise their models to be more in line with their new mutual experiences together in therapy. This part of the intervention is also an opportunity for some mothers to explore with the therapist intergenerational effects on the parent–infant relationship, although this is not seen as essential. However, unlike the process in traditional psychodynamic psychotherapy, the specific and ultimate aim in WWW is to enable the mother to follow her infant's lead. To achieve this, although the therapeutic alliance is fostered, the transference emerging in the relationship between the mother and the therapist is not focused on. We are aware that transference issues in relation to the therapist may remain in the background or may emerge more directly, and this is taken into consideration. However, the focus is maintained on the mother–infant relationship.

From this perspective, infant-led psychotherapy would appear to be the most consistent with the essential requirements suggested by attachment theory for enhancing the mother–infant relationship. This is because it provides psychological and physical access to the mother, focuses directly on maternal sensitivity and responsiveness to the infant's spontaneous gestures, places the mother in a nonintrusive stance, which allows for the evolution of the infant's self-expression and mastery of the environment, and provides an arena in which the infant can work through relational struggles.

RESEARCH ON INFANT–PARENT PSYCHOTHERAPIES IN CLINIC SAMPLES

Despite application of attachment theory to designing early interventions, few studies have actually measured infant attachment security as an outcome and, of those, few have reported a salutary effect of treatment on attachment status (van IJzendoorn, Juffer, & Duyvesteyn, 1995). Specifically, in a meta-analytic review of infant–parent interventions research that aimed to alter attachment security, van IJzendoorn et al. (1995) reported that short-term behaviorally oriented interventions focusing on maternal sensitivity are most likely to promote infant attachment security. The latter review, however, encompassed studies of a wide range of clinic, nonclinic, and high-risk samples. In the few studies of clinic-based samples, either

attachment status was not examined (Cramer et al., 1990; DeGangi & Greenspan, 1997) or did not change significantly (Lieberman et al., 1991).

More commonly, research has focussed on precursors of infant attachment security, in particular, maternal sensitivity and responsiveness, with a variety of interventions reporting a positive impact (Lojkasek et al., 1994). These changes have been observed in research comparing a psychodynamic infant–parent psychotherapy to an untreated control group (Lieberman et al., 1991) and to a behaviorally oriented intervention, interactional guidance (Cramer et al., 1990; Robert-Tissot et al., 1996). It has been difficult to elucidate which components of treatment might be related to changes in the infant–mother relationship because different models of therapy have been compared in only one study (Robert-Tissot et al., 1996). Moreover, perhaps because infant–mother psychotherapies do not aim to effect change in cognitive development, this attribute has not been measured.

To date, there has been only minimal empirical evidence regarding the outcome of the infant-led approach. In a study of a treatment that combined infant-led psychotherapy with floor time, De Gangi and Greenspan (1997) found that this approach was superior to a directive sensory integration approach, that involved training infants in specific skills and in resolving the symptoms of inattention and irritability. Other evidence for the effectiveness of WWW is descriptive and although a range of benefits has been reported (Johnson et al., 1980; Muir et al., 1989; Ostrov, Dowling, Wesner, & Johnson, 1982), clearly a more rigorous examination of WWW was needed.

The goal of the present study was to test the effects of WWW with 12- to 30-month-old clinic infants compared to another form of psychodynamic psychotherapy that primarily followed Fraiberg's (Fraiberg et al., 1987; Lieberman, 1992) making psychotherapeutic use of the mother–infant interaction in the session (hereafter referred to as Psychodynamic Psychotherapy; PPT). Furthermore, this study improved on other studies of clinical infant interventions by including a reliable and valid measure of attachment security (Strange Situation Procedure) as well as observation of qualities of the mother–infant relationship during play. It also goes beyond the current infant psychotherapy literature by including standardized measures of cognitive development and ratings of affect regulation. Although infants and mothers were assessed on a range of measures, for theoretical reasons certain variables were of primary interest. These were attachment security, qualities of the mother–infant relationship (i.e., mother–infant reciprocity and conflict and maternal intrusiveness and unresponsiveness), and infant cognitive development and affect regulation. We hypothesized that infants in the WWW group would be more likely than infants in the PPT group to become securely attached at the end of treatment and would exhibit greater gains in cognitive development and more capacity to regulate emotions during performance on cognitive tasks. We also hypothesized that there would be a greater shift in behaviors associated with attachment security, particularly more observed reciprocity in the mother–infant relationship and less maternal intrusiveness in the WWW than in the PPT group and greater ability to play and explore on the part of the infant.

A secondary set of variables examined the mothers' perceptions of parenting, parenting stress, and depression. Working on the assumption that by finding their own way in therapy, rather than relying on the therapist's lead, mothers in the WWW group would exhibit more confidence in parenting and a concomitant reduction in parenting stress and depression, it was hypothesized that mothers in the WWW group would report a greater decrease in parenting stress, a greater increase in their sense of parenting competence and satisfaction, and less depression than mothers in the PPT group at the end of treatment.

While some effects were hypothesized to be greater for infants and mothers in the WWW group, nevertheless, in line with research on other therapies with clinical infants based on a similar theoretical framework as PPT (e.g., Robert-Tissot et al., 1996), at the end of treatment

significant improvements in presenting complaints and qualities of the mother–infant relationship and a decrease in parenting stress were expected for both groups. A future manuscript will report on the 6-month follow-up data.

METHOD

Subjects

The sample comprised 67 10- to 30-month-old infants and their mothers who attended the Hincks-Dellcrest Centre for Children's Mental Health, part of the regional children's mental health network funded by the Ontario Ministry of Community and Social Services. The Centre offers a broad range of mental health services to children ranging from infancy to late adolescence. Referrals were made by parents themselves or by mental health, medical, and child welfare professionals. In some cases, presenting problems were manifested as functional problems in the infant involving feeding, sleeping, and behavioral regulation. In other cases, referrals were due to maternal depression and feelings of failure in bonding or attachment, all factors that impeded the mothers' ability to relate to their infants. In most cases, problems were long-standing (Table 2). To be included, mothers and infants had to be physically capable of participating in play.

Procedure

Parents were expected to make the first contact to the project. They were informed of the assessment procedure and a time was arranged for the assessment when it was expected that the infant would be alert. Altogether, three assessments each comprising interviews, parent questionnaires, and direct assessment of attachment security, mother–infant interaction, and infant development were done for the study: before treatment began (pretreatment), at the end of treatment (post-treatment), and 6 months after treatment ended (follow-up). In this paper, we will report on the first two of these assessments.

The assessment interview was conducted by the therapist with the family prior to infant testing to establish the reasons for seeking help, and to obtain information about attempted solutions, family history, and current functioning, as well as suitability for treatment. All clinical interviews, the feedback session, and therapy sessions were videotaped. A review interview was conducted with both parents to talk about their perceptions of change after eight sessions, at the end of treatment, and at follow-up. Although both parents completed the questionnaires, only data from mothers will be presented here. At the end of treatment, referrals for additional services, such as developmental services and individual therapy for mothers, were made when necessary.

Design and Description of Treatments

The difficulties of conducting outcome research with children are well documented (Peterson & Bell-Dolan, 1995) and likely more complicated when it comes to infancy. Although, ideally, one begins with a randomized control trial and a no-treatment control group, requiring infants to wait up to 6 months for treatment is too long and raises ethical questions because parents cannot be discouraged from seeking help. Therefore, we decided to proceed with a design that uses an alternate treatment group similar to WWW in its psychodynamic orientation but without the instruction to follow the infant's lead.

The same playroom set-up was used for WWW and PPT. A blue mat was spread on the

floor and toys that allowed for representational play and mastery of skills were arranged in the same manner from session to session. These toys included anatomically correct baby dolls, molded plastic animals (both wild and domestic), soft vinyl family dolls, plastic mixing bowls and spoons, blocks, stacking toys, a toy baby bed and blanket, telephones, and a bean bag chair.

WWW. Following from Muir et al. (1989), each WWW session was divided into two parts. The first half hour consisted of the infant-led activity. The critical procedural difference between this therapy and PPT was the instruction to the mother to get down on the floor with her infant, observe her infant, and follow his lead. She was encouraged to respond to the infant's initiations, but asked not to take over or guide the infant's activity or play in any way. The therapist's role was to engage in a parallel process of watching, waiting, and wondering about the interactions between mother and infant. The therapist also did not intervene by directing the mother, or by interpreting the infant's activity or the mother's comments. By structuring the session in this way, the space was created for the infant to use the mother for his own therapeutic purposes (i.e., to play out relational and developmental struggles). The second part of the session comprised a 20-min discussion between the mother and the therapist intended to explore what the mother observed about her infant, understood about her infant's experience, and how she experienced the session. It also provided an opportunity for working through inevitable anxieties and painful feelings the mothers experienced following their infants' lead. The therapist routinely asked the mother to make her own observations of her infant's activity and to reflect on her feelings during the session. The focus was on making it possible for the mother to follow her infant's lead over her gaining insight.

PPT. PPT is the most common treatment offered in the Infant and Family Assessment and Treatment Team at the Hincks-Dellcrest Centre, and represents what most families could expect to receive by way of infant–parent treatment in this clinic. Typically, PPT involved discussion between the mother and therapist throughout the whole session while mother and infant played, but without any instructions. The only expectation was that “we will talk and play” and the sessions were not divided into two parts as was done in the WWW treatment. Unlike WWW, there was more flexibility so that in addition to the sessions with the mother and infant, if indicated, the whole family might be included, or just involve the parents or the mother alone. Nevertheless, the infant and mother were seen as the primary therapeutic unit in all but one case (a mother of twins was seen alone). Whereas the mother–infant sessions were typically held weekly, family or couple sessions occurred at 3- to 4-week intervals. The parent–infant therapy was generally conducted as follows: The mother and infant were invited to play and the mother to talk. The mother was told that anything she talked about was okay, but that she and the therapist would also try to attend to the infant's activity. Generally, the therapist indicated by his/her demeanor that he/she would not take a primary role in playing with the child, but would try to help the mother to be with her child. As with other forms of psychodynamic psychotherapy, use was made of transference, repetition of the past, re-experiencing of affect and interpretation. The therapist's observations made of the infant and the mother–infant interaction were used to draw the mother's attention to her infant's needs and signals.

Design

Assignment of infant–mother dyads to the two treatments was essentially random (Weiss, 1998). In two thirds of cases assignment was done using a table of random numbers. Otherwise, assignment was dependent on therapist caseload and available time for treatment. In all cases, group assignment was made at intake, before assessment and without consideration of the

specific details of the case by a person not involved in the assessment or treatment process. The WWW and PPT groups were similar in infant age, family income, and maternal education.

There were four therapists (one male and one female per treatment) who were infant mental health specialists with more than 5 years of clinical experience as well as experience in applying the respective psychotherapies for a minimum of 3 years. Treatment was provided weekly for 1-hr sessions. Pilot work indicated that some mothers made rapid progress and required relatively few sessions to make gains. As such, an agreement was made at the outset of treatment to review progress with both parents after 8 sessions with the understanding that, by mutual agreement, treatment would continue for a further 10 sessions (maximum number of sessions was 18). Neither the mean number of sessions nor the mean length of treatment differed significantly between the two treatment groups. Specifically, the mean number of sessions for WWW was 13.8 and for PPT 14.9, $t(65) = .92$, $p < .36$. The average length of time over which treatment occurred was 4.6 months for the WWW group and 5.4 months for the PPT group, $t(62) = 1.58$, $p < .12$. Six dyads who started treatment dropped out early in treatment, three because of life events (e.g., a move), and three because of ambivalence about treatment. These dyads are not included in the analyses.

Measures

With the exception of the ratings of presenting symptoms, measures used to test study hypotheses have been shown to have adequate reliability and validity.

Background information. Demographic information such as socioeconomic status and marital status were obtained using a standard intake information form and from information obtained in the initial interview. To ensure that the two treatment groups were not differentially compromised at birth, pregnancy, birth, and delivery information was obtained from the mother and from hospital records using criteria outlined by O'Callaghan, Larkin, and Waddington (1990), with informed consent by the parents.

Presenting symptoms. A symptom report form was developed for this study to obtain information from mothers about their infants' problems. Mothers were asked to list the primary and other problems that brought them for help and to rate these on a 100-point scale on three dimensions, problem severity, degree of difficulty the problem posed to them, and how effective they felt in dealing with the problem. Only ratings of the primary problem were analyzed for this paper.

Attachment security. The Strange Situation was used to assess the organization of infant–mother attachment using the standard procedures (Ainsworth et al., 1978). Separations were terminated if the child became too distressed after a minimum of 20 s. Children were classified according to criteria for secure, avoidant, ambivalent (Ainsworth et al., 1978) and disorganized (Main & Solomon, 1986) attachment relationships and were scored by an expert coder. Two expert coders scored Strange Situations for infants over 24 months of age.

Mother–infant interaction. The Chatoor Play Scale (Chatoor, 1986; Chatoor, Menville, Getson, & O'Donnell, 1988) was used to code 10 min of videotaped free play between mothers and their infants. For this procedure, appropriate toys were arranged on a plastic mat and mothers were instructed to play with their child as they would at home. Coders were blind to group status and attachment classification. From the Chatoor Scale, four dimensions were derived from 32 items each rated on a 4-point scale, and included Dyadic Reciprocity and Dyadic Conflict, Maternal Intrusiveness, and Maternal Unresponsiveness. Raters were trained

by the author of the scale (Irene Chatoor). Interrater reliability on 20% of the subjects was $r = .86$.

Infant cognitive development and behavior. The Mental Scales of the Bayley Scales of Infant Development-I or II (Bayley, 1969, 1993) were used to derive a Developmental Quotient (DQ). Ratings on a variety of behaviors also were made by the examiner on the Infant Behavior Rating Scale, which includes three subscales: Emotion Regulation, Orientation-Engagement, and Motor Quality. One subscale, the Emotion Regulation scale (i.e., infant activity, adaptation, affect, cooperation, persistence, frustration tolerance, sensitivity to stimulation, ability to attend, and responsiveness to the examiner) was of interest in the present study.

Maternal Perception of Parenting

Parenting Stress Index (PSI). This is a well-established measure of stress in the parent–child system (Abidin, 1986). Parents were asked to rate 120 items on a 5-point scale from which total, child, and parent domain scores were derived. Only the total scores for the parent and child domains were analyzed for this paper. The PSI is standardized for ages ranging from one month to 19 years.

Parenting Sense of Competence Scale. On this measure of self-esteem specific to the parenting role (Johnston & Mash, 1991), parents were asked to use a 6-point rating scale to rate 17 items divided into two scales reflecting their perception of satisfaction with the parenting role and feelings of efficacy as a parent.

Maternal Psychological Well-Being

Depression. Clinical experience suggests that mothers are likely to present with feelings of depression. To measure maternal depression, the Beck Depression Inventory was used (BDI; Beck, 1978), which required the mother to rate 21 symptoms on a 5-point scale.

Maternal Ratings of Working Alliance with the Therapist

The Working Alliance Inventory (Horvath & Greenberg, 1986) is a 36-item scale used to measure the mother's perception of her relationship with her therapist. For this scale, the degree of agreement to statements about the therapeutic relationship was rated on a 7-point scale ranging from never to always. For analysis, items worded in the negative direction were reversed so that a score of 7 indicated the most positive alliance. Scores on three components of the therapeutic process, Task, Bond, and Goal components were calculated. For this study, minor adaptations were made to the wording of items to take into account the dyadic nature of the therapy (e.g., "We have established a good understanding of the kind of changes that would be good for me and my child."). Mothers completed and returned the alliance measure to the Project Coordinator following the fourth and last sessions.

RESULTS

Background characteristics on continuous measures were analyzed using *t*-tests. Differences between groups on categorical variables were analyzed with X^2 or Fisher's Exact Test. Measures of therapeutic outcome were analyzed using a two-way analysis of variance (ANOVA) or, where we had more than one measure of the same variable, multivariate analysis of variance (MANOVA) with Group as the between factor (WWW vs. PPT) and Time as the within factor

(pre–post). Significant interactions were of special interest as they indicated the specific effects of one treatment over the other over time. Because specific group differences were predicted, one-tailed tests were used. Some measures were added after the study began and consequently samples for some analyses are smaller. In other cases, questionnaires were missing because the mother failed to complete them. There were no significant differences on any measures at the pretreatment assessment between groups.

Sample Description

Background information and sample description is found in Table 1. The two treatment groups were similar with regard to infant age, birth order, number of siblings, the gender of the child, and the hours per week in daycare. With respect to maternal characteristics, the groups were similar in age, education level, family income, and marital status. Hospital records indicated no significant group differences in length of pregnancy or labor, weeks of prematurity, Apgar scores, or birth weight.

Presenting Symptoms

The two groups did not differ either in the nature or number of presenting complaints (Table 2). The most common primary presenting complaints had to do with sleeping, behavioral

TABLE 1. Background Information

	Watch, Wait, Wonder n = 34		Psychodynamic Parent–Infant Psychotherapy n = 33		
<i>Infant characteristics</i>	<i>n</i>	(%)	<i>n</i>	(%)	χ^2
Sex (% male)	21	61.8	19	57.6	.12
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)	<i>t</i>
Child's age (months)	21.5	(6.5)	19.2	(6.1)	1.50
Birth order	1.5	(1.1)	1.4	(0.6)	.40
Number of siblings	.6	(1.2)	.5	(0.7)	.39
Number of hours in daycare	9.2	(15.6)	14.0	(17.9)	– 1.2
<i>Maternal characteristics</i>					<i>t</i>
Age	32.2	(5.6)	32.4	(4.1)	– .18
Education level (1–10) ¹	5.4	(1.2)	5.9	(1.3)	– 1.85
Family income (1–12) ²	6.3	(3.8)	5.4	(3.5)	.95
<i>Marital status</i>	<i>n</i>	(%)	<i>n</i>	(%)	χ^2
Married or common law (%)	25	75.8	26	78.8	.08
<i>Birth information</i>	<i>n</i> = 27		<i>n</i> = 28		<i>t</i>
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)	
Length of pregnancy	39.34	(1.8)	38.4	(3.9)	1.18
Weeks premature	.3	(1.3)	1.1	(3.4)	– 1.15
Length of labor (min.)	689.1	(345.3)	478.9	(359.1)	1.73
Birth weight (g)	3,463.4	(579.8)	3,160.8	(809.6)	1.63
Apgar 1	8.0	(1.3)	7.9	(1.7)	.26
Apgar 2	9.1	(0.5)	8.9	(0.5)	.77

¹ Mother's education: 1 = some elementary to 10 = Ph.D. or M.D.

² Total family income: 1 = <\$19,999 to 12 = \$120,000+.

TABLE 2. *Presenting Problems: Type and Change in Primary Presenting Problem*

	Watch, Wait, Wonder n = 33				Psychodynamic Parent–Infant Psychotherapy n = 32						
<i>Types of presenting problems</i>	<i>n</i>	<i>(%)</i>		<i>n</i>	<i>(%)</i>				χ^2		
Attachment	14	42.4		12	37.5				.16		
Behavior	12	36.4		15	46.9				.74		
Somatic (feeding, sleeping)	21	63.6		24	75.04				.04		
Parenting	8	24.2		7	21.9				.05		
Emotional	9	27.3		8	25.0				.04		
Development	5	15.2		1	3.1				2.80*		
	Pre	Post		Pre	Post				<i>F</i>		
	<i>n</i> = 29				<i>n</i> = 28						
<i>Change in primary presenting problem</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>G</i>	<i>T</i>	<i>G</i> × <i>T</i>
Maternal perception of problem severity	77.9	(15.4)	32.2	(30.9)	72.4	(20.0)	34.0	(29.7)	.10	121.11**	.92
Maternal perception of effectiveness in dealing with problem	68.6	(21.9)	34.4	(27.7)	60.2	(25.3)	37.2	(27.2)	.34	32.38**	1.25
Maternal perception of comfort dealing with problem	54.5	(27.8)	37.9	(31.9)	56.0	(27.3)	31.0	(28.4)	.19	19.11**	.77

* $p < .10$; ** $p < .0001$.

regulation, attachment, feeding, parenting, and development. Parents typically reported more than one problem [Mean for WWW = 2.4 symptoms; Mean for PPT = 2.5 symptoms, $t(63) = -.66$, $p < .51$]. Parents also reported that the problems were chronic. On average, problems were reported to be present for approximately 16 months in both groups. When examined in relation to current infant age, symptoms were chronic because they had been present for approximately 80% of the infants' lives.

Analyses were done on maternal perception of the primary problem in terms of its severity, feelings of effectiveness, and comfort (Table 2). When change in the perception of the primary presenting problem was examined, there was a significant multivariate effect for Time [$F(3, 51) = 38.9$, $p < .0001$]. Univariate analyses indicated that, over time, mothers in both groups perceived the primary presenting problem to be less severe and that they felt more effective and more comfortable in dealing with the problem (Table 2).

Attachment Security

The distribution of attachment categories prior to treatment in the two treatment groups did not differ significantly. The majority of infants were classified as either insecure (A or C, 38%) or disorganized (D, 39%). The remaining infants were classified as secure (B, 22%). To examine changes in attachment security, the insecure (A and C) categories were combined as there were very few infants classified as A (WWW = 0; PPT = 2). At the end of treatment, 20.6% ($n = 7$) of infants in the WWW group shifted to a secure attachment compared to 3% ($n = 1$) in the PPT group (Table 3). Given that this is a clinical sample, in addition to examining

TABLE 3. *Post-treatment: Change in Attachment Security*

<i>Specific Changes in Attachment</i>	<i>Watch, Wait, Wonder</i> n = 34		<i>Psychodynamic Parent–Infant Psychotherapy</i> n = 32	
	<i>n</i>	<i>(%)</i>	<i>n</i>	<i>(%)</i>
<i>Security</i>				
Shift from insecure to secure	7	(20.6)	1	(3.0)
Shift from D to A or C	5	(14.7)	3	(9.4)
Stayed secure	2	(6.0)	3	(9.4)
Stayed A, C or D	15	(44.1)	16	(50.0)
Shift from secure to insecure	4	(11.8)	6	(18.7)
Shift from A or C to D	1	(2.9)	3	(9.4)
<i>Overall change</i>				
Movement toward secure or organized attachment	12	(35.3)	4	(12.5)
No change or decrease	22	(64.7)	28	(87.5)

shifts from an insecure (A or C) or disorganized (D) category to a secure category, it was also relevant to examine movement from a disorganized attachment category to an organized albeit insecure attachment (A or C) category [WWW 14.7% ($n = 5$); PPT 9.3% ($n = 3$)]. Taken together, infants in the WWW group were significantly more likely than infants in the PPT group to move towards either a secure or organized attachment relationship (Table 3) (WWW 35.2%; PPT 12.5%) (Fisher's Exact Test, $p < .03$). Approximately half the infants did not change attachment category from pre- to post-treatment assessment (WWW = 50% and PPT = 59.4%) and a small proportion of infants became less secure (WWW = 14.7%; PPT = 28.1%).

Mother–Infant Interaction

On the Chatoor Play Scale, there was a significant Multivariate Time effect [$F(4, 62) = 19.51, p < .001$]. Univariate analyses indicated that compared to before treatment began mothers and infants in both groups exhibited greater reciprocity in play and less conflict and that mothers became significantly less intrusive at the end of treatment (Table 4). No significant changes were observed on the Unresponsiveness scale.

Infant Competence

Although infants with mild delays were included, on average, the mean scores for both groups were in the normal range. There was a significant Group \times Time interaction for the Bayley Mental Scale scores (Table 5). Infants in the WWW group made significantly greater gains than infants in the PPT group. When the analyses were repeated, removing five infants with developmental delays, the results were unchanged (Table 5).

ANOVA indicated a significant interaction on the Emotion Regulation Scale of the Bayley Behavior Rating Scales. Infants in the WWW group showed greater gains in emotion regulation than children in the PPT group (Table 5). There also was a significant main effect for time.

TABLE 4. *Change in Chatoor Play Scale*

	<i>Watch, Wait, Wonder</i> n = 34				<i>Psychodynamic Parent– Infant Psychotherapy</i> n = 33				F <i>T</i>	<i>G</i> × <i>T</i>	
	<i>Pre</i>		<i>Post</i>		<i>Pre</i>		<i>Post</i>				
	M	(SD)	M	(SD)	M	(SD)	M	(SD)			
	<i>G</i>										
Reciprocity	23.8	(5.1)	24.2	(6.2)	23.0	(5.8)	25.6	(6.6)	.07	3.17 ^a	1.63
Unresponsiveness	0.6	(0.9)	0.8	(0.9)	.8	(1.1)	0.5	(0.9)	.01	.54	3.10*
Intrusiveness	6.5	(3.1)	3.3	(3.2)	6.9	(3.4)	3.5	(2.7)	.23	58.06**	.03
Conflict	2.0	(2.0)	1.5	(1.6)	1.3	(1.5)	1.2	(1.5)	2.12	2.83 ^a	.73

* $p < .05$; ** $p < .0001$.

Maternal Perception of the Relationship with Her Infant

Parenting Stress Index. The multivariate effect for the PSI was significant for Time [$F(2, 57) = 8.4, p < .001$ (Table 6)]. Univariate analyses indicated that at the end of treatment, mothers in both groups reported experiencing less stress associated with parenting and their infants' behavior than before treatment.

Parenting sense of competence. There was a significant Multivariate Group × Time interaction [$F(2, 56) = 3.46, p < .02$]. Univariate analyses indicated that, at the end of treatment, mothers in the WWW group reported significantly more satisfaction and less ineffectiveness

TABLE 5. *Change on Developmental Measures: Bayley Scales^a*

	<i>Watch, Wait, Wonder</i>				<i>Psychodynamic Parent– Infant Psychotherapy</i>						
	<i>Pre</i>		<i>Post</i>		<i>Pre</i>		<i>Post</i>			<i>F</i>	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>G</i>	<i>T</i>	<i>G × T</i>
	<i>n = 28</i>				<i>n = 32</i>						
Mental scales ^b (DQ)	89.1	(20.2)	94.6	(19.8)	94.0	(12.0)	93.8	(14.0)	.24	4.22*	5.07 ^a
Mental scales (DQ)— Children with developmental delays removed	<i>n = 24</i>				<i>n = 31</i>						
	93.8	(15.8)	99.6	(13.9)	95.1	(10.5)	95.2	(11.5)	.24	4.94*	4.52*
Behavior rating scale											
Clinical rating (1–3)	<i>n = 19</i>				<i>n = 19</i>						
Emotion regulation	1.9	(0.8)	2.7	(0.6)	2.1	(0.8)	2.4	(0.7)	.04	26.17†	3.72*

* $p < .05$; ** $p < .01$; † $p < .0001$.

^a The Bayley-II was not available when this study began. There is considerable overlap in items from the previous version of this measure for the Mental Scales. In calculating DQs correction was made in accordance with recommendations in the Bayley-II manual. For analysis, scores for both versions of the scale were combined. In contrast, items on the Behavior Rating Scale and the scoring system differed in the revised Bayley Scales such that data from earlier subjects could not be used. Consequently, the *ns* for these two components of the scale differ.

^b Some infants were untestable pretreatment resulting in a smaller *n* for pre–post comparisons.

It is noteworthy that some infants who were untestable at the beginning of treatment because they were so distressed were testable at the end of treatment.

TABLE 6. *Change in Parenting Variables and Maternal Psychological Well-Being*

<i>Maternal Perception</i>	<i>Watch, Wait, Wonder</i>				<i>Psychodynamic Parent– Infant Psychotherapy</i>				<i>G</i>	<i>F T</i>	<i>G × T</i>
	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>			
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>			
<i>Parenting Stress Index</i>	<i>n</i> = 29				<i>n</i> = 31						
Parent domain total	139.1	(23.2)	129.4	(20.0)	142.2	(33.9)	134.6	(29.5)	.38	12.59‡	.20
Child domain total	119.9	(23.8)	108.5	(21.2)	119.4	(26.2)	110.5	(22.8)	.02	14.24§	.20
<i>Parenting Sense of Competence Scale</i>	<i>n</i> = 27				<i>n</i> = 32						
Total satisfaction	33.0	(7.5)	37.1	(6.4)	35.9	(7.7)	37.6	(6.3)	.34	15.79‡	6.45‡
Total lack of efficacy	21.6	(5.9)	19.0	(5.0)	20.5	(6.7)	20.4	(5.0)	0	2.99**	2.58*
<i>Beck Depression Inventory</i>	<i>n</i> = 30				<i>n</i> = 32						
	9.5	(6.5)	6.9	(5.2)	12.6	(8.4)	11.17	(8.3)	6.40‡	5.80‡	1.0

* $p < .10$; ** $p < .05$; † $p < .01$; ‡ $p < .001$; § $p < .0001$.

in the parenting role than mothers in the PPT group (Table 6). There also was a significant multivariate main effect for Time [$F(2, 56) = 7.82, p < .001$].

Maternal Depression

A square-root transformation was applied to meet the assumptions for ANOVA of the Beck Depression Scale. Univariate analysis indicated significant Group and Time effects. Using follow-up tests to explore the Group main effect, there were no significant group differences at the beginning of treatment [$t(60) = -1.78, p < .08$], but there were at the end of treatment [$t(60) = -2.65, p < .01$], with mothers in the WWW group being less depressed.

TABLE 7. *Maternal Ratings of the Therapeutic Alliance*

	<i>Watch, Wait, Wonder</i>		<i>Psycho-dynamic Parent– Infant Psycho-therapy</i>		<i>t</i>	<i>Watch, Wait, Wonder</i>		<i>Psycho-dynamic Parent– Infant Psycho-therapy</i>		<i>t</i>
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>		<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>	
	<i>4th Session</i>					<i>Post-treatment</i>				
Bond component	5.64	(1.0)	5.99	(.6)	–1.57	5.53	(1.0)	5.92	(.6)	–1.61
Goal component	5.47	(1.3)	5.49	(.9)	–.8	5.33	(1.3)	5.27	(.9)	–1.11
Task component	5.19	(1.2)	5.12	(.9)	–.21	5.28	(1.3)	5.53	(.9)	–.81

* $p < .05$; ** $p < .01$.

Maternal Ratings of Therapeutic Alliance

There were no significant group effects in maternal perception of their relationship with their therapist on the Working Alliance Scale completed either at the fourth session or at the end of treatment (Table 7). The mean scores on all component scales were in a positive direction (i.e., between 5 and 6 on the 7-point scale).

DISCUSSION

The findings of this study offer partial support for the primary study hypotheses. Specifically, the infant-led WWW psychotherapy was associated with greater shift toward attachment security at the end of treatment. Moreover, infants in the WWW group exhibited a greater capacity to regulate their emotions with a concomitant increase in cognitive ability. Support also was found for secondary study hypotheses in that mothers in the WWW group reported more satisfaction with parenting than mothers in the PPT group and lower levels of depression at the end of treatment. Despite the differential shift in attachment security in the WWW group, there are no differential treatment effects in maternal sensitivity and responsiveness as measured by the intrusiveness and reciprocity scales of the Chatoor Scale. This was unexpected, as it has long been held that sensitive and responsive caregiving is a precursor of attachment security. However, in a recent meta-analytic review of the association between sensitivity and attachment, De Wolff and van IJzendoorn (1997) concluded that sensitivity is an important but not an exclusive condition of attachment security and that other dimensions of parenting are equally important.

Both WWW and PPT had some effects in common at the end of treatment. They were associated with a reduction of presenting problems, improvement in the quality of the mother–child relationship, and reduction in parenting stress. These findings are consistent with those observed with other clinical samples (Cramer et al., 1990; DeGangi & Greenspan, 1997; Lieberman et al., 1991; Robert-Tissot et al., 1996).

It is also notable that differential treatment effects cannot be attributed to differences in the quality of the therapeutic relationship because there were no significant group differences in maternal ratings of therapeutic alliance. This is important as a positive therapeutic alliance has generally been considered to be a crucial if not the primary factor in therapeutic outcome (Butler & Strupp, 1986). The lack of a significant difference in mothers' ratings of the therapeutic alliance between the PPT and WWW groups suggests that some other factor was responsible for the differential treatment effects.

Differential Effects of Treatment

Earlier, we highlighted attributes of the infant-led WWW treatment that might contribute to greater treatment effects on the attachment measure, maternal depression, parenting competence, and infant cognitive development and emotion regulation. The two therapies are most different in that the WWW instructions include a behavioral component to follow the infant's lead, which gives paramountcy to the relationship between the mother and the infant rather than the relationship between the mother and the therapist. Moreover, the WWW instructions to sit on the floor with the infant and to follow his self-initiated activity actually positions the mother in direct physical proximity to her infant so that he can gain access to her. It is this shift in focus and the empowerment of the infant that might be responsible for the more salutary outcomes with WWW. Put another way, of the three types of infant–parent therapies described in the review of the literature, WWW makes the greatest use of infants' attachment and de-

developmental striving. WWW also works at the representational level through the mother's discussion of her observations and experience. Because the infant draws his mother's attention to the importance for him of her presence, she is likely to rapidly experience increased confidence as a mother and thus a more positive attitude toward, and greater pleasure in parenting. Additionally, her infant shows her his attempts to master the environment through his cognitive developmental striving in her presence.

Turning to the differential effects on maternal depression and parenting competence, many mothers who are depressed try to compensate for their lack of feeling connected with their infants by becoming overly active in engaging with them (Hammen, 1988) or they are too preoccupied to pay attention to their infant's communications (Murray, 1992). We speculate that WWW more directly addresses maternal competence as the mother comes to understand that she does not have to work so hard at initiating interactions because the initiating infant is an active and stimulating contributor himself. Additionally, in WWW the therapist's role is to engage in a parallel process of watching, waiting, and wondering, that is, not to intervene by directing the mother or interpreting the infant's activity. Due to this, and to the expectation that the mother observe her infant's activity, she is enabled to become more knowledgeable about her own infant and not feel the need to rely on the therapeutic "expert." In these several ways, WWW would seem to reinforce in the mother a sense of competence and enjoyment in mothering and thus may contribute to the lower levels of maternal depression in the WWW group. Elsewhere, it has been shown that depressed mothers were less depressed after an intervention that improved their feelings about their relationship with their infant (Murray & Cooper, 1994). In this context, it is of note that Cramer et al. (1990) reported a decrease in self-esteem in mothers following treatment with interactional guidance, which involves the therapist providing direction. In the present study, it also is possible that insight into earlier relational difficulties may have dampened effects in the PPT group as the uncovering process is likely to maintain or aggravate depression in the short term (Goldfried & Wolfe, 1998; Seligman, 1995). This is something that we will be exploring in our analysis of the data at 6-month follow-up.

Finally, we turn to the greater impact of WWW on infants' cognitive development. Aside from the mothers' responsive presence, Winnicott (1976) emphasized that it is important for infants that their mothers also, at times, while remaining present, do not actually interact with them. WWW ensures both the space for infants to feel as if they are on their own, playing or possibly doing nothing, albeit in their mothers' presence. Due to the mothers' accessibility in WWW, infants are in a stronger position to create a secure base from which they are free to spontaneously express imagination, curiosity, interest in toys, and personal solutions to problems that are encountered. It is an opportunity for infants to master in their own way developmental and relational struggles. When the infants are leading the way, the mothers are also reliably there to return to for reassurance because they are watching their infant and not engaged in discourse with the therapist.

The above discussion, of course, is speculative and future research will need to systematically investigate mechanisms of change.

Theoretical and Methodological Issues

There are a number of theoretical and methodological issues that arise from the findings of this study. Although there is evidence that infants in the WWW group shift toward a more secure or organized attachment, the findings need to be viewed with caution. While changes in attachment security are in a direction consistent with attachment theory, they are modest. An examination of the specific studies reviewed by van IJzendoorn et al. (1995) indicates that the

striking findings reported in some early intervention studies (e.g., Anisfeld, Casper, Nozyce, & Cunningham, 1990; Bakermans-Kranenburg et al., 1998; Juffer, Hoksbergen, Riksen-Walraven, & Kohnstamm, 1997; van den Boom, 1994) involved younger infants in the birth through preattachment stage. One must consider that the effects of interventions will depend on the stage of attachment formation. We were working with infants whose attachments were already formed and do not know whether the potential effects of either treatment would have been greater had we had been in a position to intervene earlier.

We also must consider the findings in light of research that indicates that attachment insecurity is only one factor in a multirisk model of developmental psychopathology (Sroufe, 1997) and only one of a number of quantities that contribute to parent–child relationships (Dunn, 1993; Rutter, 1995). Although, theoretically, attachment appears to be linked to symptomatology in infancy, in most cases it may be the endpoint or marker of improvement over time rather than an immediate outcome.

It is important to comment on the research design used in this study. Ideally, a treatment research design should include a waiting list or no treatment control group so that changes in infant behavior and parent perceptions can be clearly attributed to treatment effects. As mentioned earlier, inclusion of such a comparison group was not feasible for ethical reasons. Although we have to consider that infants with mental health problems may become less symptomatic without treatment, as has been observed in some studies with older children (Weisz & Weiss, 1990), we feel that this is unlikely the only explanation for effects over time given the chronicity of problems in our sample. On average, infants in the WWW group were reported to have had problems for 16 of the 21 months of their lives and infants in the PPT group for 16 of their 19 months. Because most infant problems were chronic, we must ask why such symptoms would otherwise abate after 4 to 6 months of treatment. Moreover, the three measures of primary interest (Strange Situation, Chatoor Play Scale, and Bayley Scales) are measures of proven reliability and validity that were either independently scored from videotapes by raters blind to treatment group or directly administered to the child, which reduces the effects of reporter bias. Further, the fact that we observed a number of statistical interactions in predicted directions bolsters the results and supports the conclusion that the findings did not occur by chance.

In this context it is also important to make some qualifying comments on the limits of evaluating therapy when doing a randomized control study. Numerous reviews have pointed to the fact that the results from randomized control trials do not translate well to naturalistic clinic settings (Kazdin, 1995; Weisz, Donenberg, Weiss, & Han, 1995). Recent remedies for such lapses in the transfer of knowledge include suggestions regarding research designs, which include groups where patients have been given a choice (Cramer, 1998; Robert-Tissot & Cramer, 1998; Silverman & Altman, 1996) and which generally mirror the naturalistic context in which therapy occurs (Seligman, 1995). Systematic application of these new methodological approaches to studying treatment outcomes will undoubtedly change the field of therapy research. In this present study, although the results for WWW are positive, we did not measure a clinical application of WWW as it would ordinarily be used. Typically, there would be a more flexible application, not of the technique itself, but in the use of collateral therapies, especially those including other family members. We are only beginning to explore the full range of parameters of change.

Summary and Clinical Implications

In this study, a new and untested psychodynamic infant-led psychotherapeutic intervention, WWW, was evaluated with a clinic sample of infants who had experienced chronic problems.

The findings showed some differential effects when this treatment was compared to another psychodynamic treatment that a family would ordinarily receive in a clinic. Thus, the findings serve an important purpose for clinical practice. It is important to do further work to replicate the findings and to test the application of the WWW approach in other clinically relevant settings such as community-based, and medical settings. We also endeavour to develop a WWW application that can be used with less clinically specialized frontline staff. Although the short-term treatment effects suggest that WWW produces some greater effects we need to temper our conclusions to see whether the effects of WWW persist, whether the traditional psychotherapeutic approach produces similar or greater outcomes but at a different pace, and whether different outcomes will emerge over time. These are issues that we will be examining with our follow-up data.

REFERENCES

- Abidin, R.R. (1986). *Parenting Stress Index*. Charlottesville: Pediatric Psychology Press.
- Ainsworth, M.D.S., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- Anisfeld E., Casper, V., Nozyce, M., & Cunningham, N. (1990). Does infant carrying promote attachment? An experimental study of the effects of increased physical contact on the development of attachment. *Child Development*, 61, 1617–1627.
- Bakermans-Kranenburg, M.J., Juffer, F., & van IJzendoorn, M.H. (1998). Interventions with video feedback and attachment discussions: Does type of maternal insecurity make a difference. *Infant Mental Health Journal*, 19, 202–219.
- Bayley, N. (1969). *Bayley Scales of Infant Development*. New York: Psychological Corporation.
- Bayley, N. (1993). *Bayley Scales of Infant Development—2*. New York: Psychological Corporation.
- Beck, A.T. (1978). *Beck Depression Inventory*. Philadelphia, PA: Centre for Cognitive Therapy.
- Belsky, J., Rovine, M., & Taylor, D.G. (1984). The Pennsylvania Infant and Family Development Project, 3: The origins of individual differences in infant–mother attachment: Maternal and infant contributions. *Child Development*, 55, 718–728.
- Bowlby, J. (1969). *Attachment and loss, 1: Attachment*. New York: Basic Books.
- Butler, S.F., & Strupp, H.H. (1986). Specific and nonspecific factors in psychotherapy research. *Psychotherapy*, 23, 30–40.
- Chatoor, I. (1986). *Mother/Infant/Toddler Play Scale*. Washington, DC: Children's Hospital National Medical Center.
- Chatoor, I., Menville, E., Getson, P., & O'Donnell, R. (1988). *Manual for observational scale for mother–infant interaction during feeding*. Unpublished Manuscript. Washington, DC: Children's Hospital National Medical Center.
- Cramer, B. (1998). Mother–infant psychotherapies: A widening scope in technique. *Infant Mental Health Journal*, 19, 151–167.
- Cramer, B., Robert-Tissot, C., Stern, D.D., Serpa-Rusconi, S., De Muralt, G.B., Palacio-Espasa, F., Bachman, J., Knauer, D., Berney, C., & D'Arcis, U. (1990). Outcome evaluation in brief mother–infant psychotherapy: A preliminary report. *Infant Mental Health Journal*, 11, 278–300.
- DeGangi, G.A., & Greenspan, S.T. (1997). The effectiveness of short-term interventions in the treatment of inattention and irritability in toddlers. *Journal of Developmental and Learning Disorders*, 1, 277–298.
- De Wolff, S., & van IJzendoorn, M.H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, 68, 571–591.

- Dunn, J. (1993). Young children's close relationships: beyond attachment. Individual Differences and Development Series, Vol. 4. Newbury Park, CA: Sage.
- Emde, R.N. (1987). Infant mental health: Clinical dilemmas, the expansion of meaning, and opportunities. In J.D. Osofsky (Ed.), *Handbook of infant development* (pp. 1297–1320). New York: Wiley.
- Fraiberg, S., Adelson, E., & Shapiro, V. (1987). Ghosts in the nursery: A psychoanalytic approach to the problems of impaired infant–mother relationships. In S. Fraiberg (Ed.), *Selected writings of Selma Fraiberg* (pp. 100–136). Columbus, OH: Ohio State University Press.
- Fraiberg, S., Shapiro, V., & Cherniss, D. (1983). Treatment modalities. In J.D. Call, E. Galenson, & R.L. Tyson (Eds.), *Frontiers of infant psychiatry* (pp. 56–73). New York: Basic Books.
- Goldfried, M.R., & Wolfe, B.E. (1998). Toward a more clinically valid approach to therapy research. *Journal of Consulting and Clinical Psychology*, 66, 143–150.
- Greenspan, S.I. (1992). *Infancy and early childhood: The practice of clinical assessment and intervention with emotional and developmental challenges*. Madison, CT: International Universities Press.
- Grossmann, K., Grossmann, K.E., Spangler, G., Suess, G., & Unzer, L. (1985). Maternal sensitivity and newborns' orientation responses as related to quality of attachment in northern Germany. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development*, 50, (1–2, Serial No. 209), 233–256.
- Hammen, C. (1988). Self-cognitions, stressful events, and the prediction of depression in children of depressed mothers. *Journal of Abnormal Child Psychology*, 16, 347–360.
- Horvath, A.O., & Greenberg, L.S. (1986). The development of the working alliance inventory. In L.S. Greenberg & W.M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook* (pp. 529–556). New York: Guilford Press.
- Johnson, F.K., Dowling, J., & Wesner, D. (1980). Notes on infant psychotherapy. *Infant Mental Health Journal*, 1, 19–33.
- Johnston, C., & Mash, E.J. (1991). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18, 167–175.
- Juffer, F., Hoksbergen, R.A.C., Riksen-Walraven, J.M., & Kohnstamm, G.A. (1997). Early intervention in adoptive families: supporting maternal sensitive responsiveness, infant–mother attachment and infant competence. *Journal of Child Psychology and Psychiatry*, 38, 1029–1050.
- Kazdin, A.E. (1995). Scope of child and adolescent psychotherapy research: Limited sampling of dysfunctions, treatments, and client characteristics. *Journal of Clinical Child Psychology*, 24, 125–141.
- Lieberman, A. (1992). Infant–parent psychotherapy with toddlers. *Development and Psychopathology*, 4, 559–574.
- Lieberman, A.F., Weston, D.R., & Pawl, J.H. (1991). Preventive intervention and outcome with anxiously attached dyads. *Child Development*, 62, 199–209.
- Lojkasek, M., Cohen, N.J., & Muir, E. (1994). Where is the infant in infant intervention? A review of the literature on changing troubled mother–infant relationships. *Psychotherapy: Theory, Research, and Practice*, 31, 208–220.
- McDonough, S. (1992). *Interactional Guidance Manual*. Unpublished manuscript. East Providence, RI: Brown University.
- Mahrer, A.R., Levinson, J.R., & Fine, S. (1976). Infant psychotherapy: Theory, research, and practice. *Psychotherapy: Theory, Research and Practice*, 13, 131–140.
- Main, M., & Solomon, J. (1986). Discovery of an insecure-disoriented attachment pattern. In T.B. Brazelton & M.W. Yogman (Eds.), *Affective development in infancy* (pp. 95–124). Norwood, NJ: Ablex.
- Muir, E. (1992). Watching, waiting, and wondering: Applying psychoanalytic principals to mother–infant intervention. *Infant Mental Health Journal*, 13, 319–328.

- Muir, E., Lojkasek, M., & Cohen, N.J. (in press). Observant parents: intervening through observation. *Infant Observation Journal*.
- Muir, E., Stupples, A., & Guy, A.D. (1989). Mother–toddler psychotherapy and change in patterns of attachment: Some pilot observations. Unpublished Manuscript.
- Muir, E., & Thorlaksdottir, E. (1994). Psychotherapeutic intervention with mothers and children in day-care. *American Journal of Orthopsychiatry*, 64, 60–67.
- Murray, L. (1992). The impact of postnatal depression on infant development. *Journal of Child Psychology and Psychiatry*, 33, 543–561.
- Murray, L., & Cooper, P.J. (1994). Clinical applications of attachment theory and research: Change in infant attachment with brief psychotherapy. In J. Richer (Ed.), *The clinical application of ethology and attachment theory* (pp. 15–24). Occasional papers No. 9. London: Association for Child Psychology and Psychiatry.
- O’Callaghan, E., Larkin, C., & Waddington, J.L. (1990). Obstetric complications in schizophrenia and the validity of maternal recall. *Psychological Medicine*, 20, 89–94.
- Ostrov, K., Dowling, J., Wesner, D.O., & Johnson, F.K. (1982). Maternal styles in infant psychotherapy: Treatment and research implications. *Infant Mental Health Journal* 3, 162–173.
- Peterson, L., & Bell-Dolan, D. (1995). Treatment outcome research in child psychology: Realistic coping with the “ten commandments of methodology.” *Journal of Clinical Child Psychology*, 24, 149–162.
- Robert-Tissot, C., & Cramer, B. (1998). When patients contribute to the choice of treatment. *Infant Mental Health Journal*, 19, 245–259.
- Robert-Tissot, C., Cramer, B., Stern, D.N., Serpa-Rusconi, S., Bachmann, J.-P., Palacio-Espasa, F., Knauer, D., De Muralt, M., Berney, C., & Mendiguren, G. (1996). Outcome evaluation in brief mother–infant psychotherapies: Report on 75 cases. *Infant Mental Health Journal*, 17, 97–114.
- Rutter, M. (1995). Clinical implications of attachment concepts: Retrospect and prospect. *Journal of Child Psychology and Psychiatry*, 36, 549–571.
- Seligman, M.E.P. (1995). The effectiveness of psychotherapy: The Consumer Reports Study. *American Psychologists*, 50, 965–974.
- Silverman, W.A., & Altman, D.G. (1996). Patients’ preferences and randomised trials. *Lancet*, 347, 171–174.
- Sroufe, L.A. (1988). The role of infant–caregiver attachments in development. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 51–71). Hillsdale, NJ: Erlbaum.
- Sroufe, L.A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology*, 9, 251–268.
- Stern, D.N. (1995). *The motherhood constellation: A unified view of parent–infant psychotherapy*. New York: Basic Books.
- van den Boom, D.C. (1994). The influence of temperament and mothering on attachment and exploration: An experimental manipulation of sensitive responsiveness among lower class mothers with irritable infants. *Child Development*, 65, 1449–1469.
- van IJzendoorn, M.H., Juffer F., & Duyvesteyn, M.G.C. (1995). Breaking the intergenerational cycle of insecure attachment: A review of the effects of attachment-based interventions on maternal sensitivity and infant security. *Journal of Child Psychology and Psychiatry*, 2, 225–248.
- Weiss, B. (1998). Routine monitoring of the effectiveness of child psychotherapy. *Journal of Child Psychology and Psychiatry*, 39, 943–950.
- Weisz, J.R., Donenberg, Weiss, B., & Han, S.S. (1995). Bridging the gap between laboratory and clinic in child and adolescent psychotherapy. *Journal of Consulting and Clinical Psychology*, 63, 688–701.

- Weisz, J.R., & Weiss B. (1990). The impact of methodological factors on child psychotherapy outcome research: A meta-analysis for researchers. *Journal of Abnormal Child Psychology*, 18, 639–670.
- Wesner, D., Johnson F., & Dowling, J. (1962). What is maternal–infant intervention? The role of infant psychotherapy. *Psychiatry*, 45, 307–315.
- Winnicott, D.W. (1976). The capacity to be alone. In D.R. Winnicott (Ed.), *The Maturation Processes and the Facilitative Environment*. London: Hogarth Press.