

The Role of Mental Representations in Predicting Mother-Infant Interaction

Author: Trad, Paul V, MD

Publication info: Pre- and Peri-natal Psychology Journal 7. 4 (Summer 1993): 287-312.

[ProQuest document link](#)

Abstract: None available.

Full Text: Headnote ABSTRACT: Research has revealed that as early as the neonatal period infants possess innate capacities such as categorization and amodal perception that help them formulate representations of the "self and "other." This paper posits that in order to formulate these representations, the infant also requires exposure to a motivational environment that provides insight into the relationships between people.

"Previewing," a process deriving from the interaction between caregiver and infant, contributes to our understanding of how the caregiver's predictions are transferred to the infant, fostering the infant's achievement of a coherent sense of self and an adaptive social interaction with the caregiver. INTRODUCTION The process

by which individuals formulate representations of the self, of others and of the external world of objects has long intrigued developmental psychologists. Describing this process requires explaining how representations change during the course of development from infancy to adulthood. No such description would be complete, however,

without an evaluation of the roles played by the infant and caregiver during early life (Campos, Campos and Barrett, 1989; Trad, 1992). Recent research has disclosed that the infant possesses two innate capacities that foster the construction of representations: amodal perception and categorization skills (Medin, 1983; Resnick and Kagan, 1983). Amodal perception, the ability to transfer information between sensory systems (e.g., to

recognize visually a toy music box previously heard, but never before seen), helps the infant integrate the discrete elements of a stimulus into a single composite (Stern, 1985). Categorization, the identification of similar traits among diverse stimuli or within a given relationship, lays the foundation for further learning (Hayne,

Rovee-Collier and Perris, 1987). In combination, amodal perception and categorization facilitate the infant's development of increasingly complex representations (Stern, 1989). Nevertheless, this paper contends that the infant needs more than these constitutional skills to achieve representations that span the full diversity of human experience. Significantly, the infant should also be exposed to the interpersonal behaviors of others, particularly

the caregiver. Gaining familiarity with the caregiver enables the infant to acquire insight into his/her own perceptions, as well as to understand the relationship between the perceptions of the self and the perceptions of others (Pipp, Fischer and Jennings, 1987; Behrends and Blatt, 1985). The following discussion focuses on a developmental process that appears to foster the infant's representations of the self and others, especially the

caregiver. This developmental process, referred to as previewing (Trad, 1990a), may help us understand how the infant comes to achieve a coherent sense of self, of others and of external objects. Previewing is a process that derives from the interaction between caregiver and infant during the first years of life. The process begins when the caregiver envisions imminent developmental trends and maturational skills that the infant will soon exhibit.

The caregiver then uses these predictions to design behaviors that will acquaint the infant with the changes new skills will precipitate in the dyadic relationship. When engaging in these behaviors with the caregiver, the infant experiences a sense of organization that guides his/her development (Trad, 1992). The previewing process may also offer insight about some of the issues of infant development that have not been fully addressed before. As Bretherton (1985) has noted, research concerning mothers and infants has centered on the perceptions of the attached party (the infant), rather than of the attachment figure (the caregiver).

Studying the previewing process may shed further light upon the caregiver's contribution to the dyadic relationship. Previewing may also offer information about the infant's skill for organizing experiences. Stern (1985) has pointed to the need for such an organizing system in his description of self development and the infant's integration of diverse experiences. The following sections illustrate how the previewing process may

foster the infant's ability to generate mental representations. METHODS Evidence of the previewing process was first recognized in adaptive mothers attending group sessions offered by a neighborhood hospital to enhance parental knowledge of developmental events (Trad, 1990a). Twelve mothers, ranging in age from 22 to 38, attended the group sessions, which met once a week for two hours. These weekly sessions lasted for approximately six months. All of the mothers in the group were primiparous and had experienced uncomplicated pregnancies and deliveries. Upon commencement of the group, infants ranged in age from 4 weeks to 5 months. In addition, in all cases the marriage was intact and the infant's father was employed. Mothers in the group were from middle income or better households and all had at least some college education. Eight of the mothers were white, two were African-American and two were Asian-American. All mothers were recruited from the obstetrics department of the hospital and were interviewed individually prior to joining the group. The goal in recruiting the group was to enhance the developmental awareness of psychologically healthy, first-time mothers. The group was conducted by a child psychiatrist; another child psychiatrist and a social worker acted as assistants. Observing these mothers during a free play period of fifteen minutes before each session began revealed that they tended to expose their infants to "previews" or "rehearsals" of upcoming developmental events. In addition, during the sessions each parent was asked to describe any developmental changes noticed in the infant over the past week. Subsequently, discussion focused on the imminent developmental changes the infants would be likely to exhibit. Coinciding with approximately the same six-month period, another group of 18 caregivers with histories of psychiatric disorder was observed and treated at the hospital by the same child psychiatrists. These mothers had been in treatment prior to their pregnancies and were referred to the mother-infant psychotherapy service by the psychiatric department of the hospital. Diagnoses of these mothers varied and included such DSM-III-R (APA, 1987) categories as bipolar disorder, schizoaffective disorder, schizophrenia, substance abuse, as well as personality disorders. In contrast to the adaptive mothers, the mothers with psychiatric disorders displayed an inability to predict upcoming developmental changes in their infants, despite encouragement by the child psychiatrists. The lack of prediction was manifested by the mothers' persistent hesitation about engaging in the types of rehearsal behavior encountered among the adaptive mothers. These mothers were also questioned about their perceptions of the infant in a private interview conducted with a psychiatric resident. The interview focused on the caregiver's ability to describe some of the major developmental milestones that infants in general might be expected to achieve during the first few years of life. In addition, each caregiver was asked to describe which milestones her infant had already achieved and which milestones the infant could be expected to achieve in the imminent future. The majority (84 percent) of the caregivers in this group provided inadequate responses to the inquiries posed during the interviews. They either could not describe any developmental event of significance or identified a developmental event only after substantial encouragement. Rather than being prospectively oriented toward the infant's upcoming development, as seemed to be the case with the adaptive mothers, the mothers with psychiatric disorders appeared apathetic about their infants' maturational status. As an illustration of this contrast, one mother in the adaptive group predicted that her four-month-old daughter would soon begin grasping small objects, a prediction confirmed several weeks later, while a mother in the second group with an infant daughter of the same age could envision no upcoming milestone even after receiving substantial encouragement from the therapist. An example of previewing behavior was provided by a mother attending the group sessions with her six-month-old son. The mother told the therapist that she believed her baby would soon be crawling, a conclusion that she had reached because she had observed her son "kicking in a certain way." She demonstrated by placing one of the baby's favorite toys on the floor just beyond the child's reach and positioning herself in close proximity. As the infant began to kick his feet and flail his arms, the mother supported his body, slowly manipulating his movements in the direction of the toy. In this fashion, the baby was exposed to a simulation of crawling behavior. It is posited that exposure to such a simulation helps an infant internalize not only the sensation of crawling as it will be experienced in the future once the skill is mastered, but

also the interpersonal changes that he/she and his/her mother will experience when these new developmental skills are acquired. After engaging in this behavior for several minutes, while offering verbal encouragement, the mother slowed and eventually stopped her supportive movements. "If we do it for too long," she informed the therapist, "he gets tired." This interactive sequence suggested first that the mother had observed certain behaviors in the infant and had then mentally represented an image of her son crawling. Next, she had used her predictions of upcoming infant change to formulate specific behaviors for accommodating his current level of skill, while motivating him to practice the change. Finally, she had guided the infant back to his current developmental status when the previewing exercise was completed. The mother explained that she repeated this interaction on a regular basis whenever the infant moved his body as if attempting to crawl. During the previewing exercise the mother had supportively exposed the infant to the sensation of crawling, while allowing him to perceive her emotional enthusiasm for his achievement, as well as his own independence (Trad, 1990a, b).

Components of the Previewing Process The above vignette exemplifies the three components of the previewing process. The first component is representation: the caregiver perceives and represents imminent infant development. Representation here refers to the conscious formulation of images based on the infant's current status, as well as on predictions of how upcoming developmental events will alter the infant's skills and modify the dyadic relationship. During the representational phase of previewing, caregivers adopt a prospective orientation, meaning that they focus on how the infant will change in the future. The twelve mothers in our adaptive group began each weekly session by predicting skills their infants would manifest in the near and distant future. In formulating these predictions, the mothers tended to rely on observations of infant behaviors that indicated precursory forms of new skills. Moreover, these mothers also described how they used other forms of knowledge—such as information they had been told or materials they had read—to help formulate predictions about their infants. Further, upon being questioned, these mothers attributed purpose and meaning to their infants' behaviors. The second component of the previewing process involves the mother's formulation of specific interpersonal behaviors designed to introduce the infant to an upcoming skill. These behaviors tend to simulate a specific milestone, such as crawling, and also tend to incorporate visual and verbal cuing, tactile stimulation, holding gestures and facial expressions. These behaviors have been labeled "intuitive" by Papousek and Papousek (1982), who note that such behaviors tend to be used by caregivers for the purpose of conveying emotional and cognitive messages to their infants. It is posited that the caregiver's use of these intuitive behaviors may help infants of even a few months old to formulate predictions about the future relationship with the caregiver. The third component of the previewing process refers to the caregiver's attuned response to the infant's psychological status, as displayed through mood, facial expression and gesture. During a previewing exercise, the caregiver continually monitors the infant using his/her visual observation, sense of touch, hearing and smell. When the caregiver senses that the infant is eager to engage in a previewing exercise, he/she initiates such an episode. When he/she senses that the infant has grown tired or bored with the exercise, however, he/she gradually abates the behaviors, easing the infant's transition to a quiescent state. It is hypothesized that the attunement the caregiver brings to these episodes helps the infant move from one developmental capacity to a more sophisticated skill with ease. By adopting an empathic attitude during previewing exercises, the caregiver guides the infant's physical behaviors as he/she negotiates new developmental skills (Trad, 1989a). Equally important, the caregiver's empathy offers emotional feedback that validates the infant's behavior. The caregiver demonstrates his/her approval by displaying positive emotion which functions as a form of feedback for the infant. As new developmental skills are integrated into the infant's behavioral repertoire, the perceptions experienced during earlier previewing episodes are validated. For instance, an earlier previewing episode may have introduced the infant to crawling behavior, which was experienced with the caregiver's support. Subsequently, the infant matures sufficiently to crawl on his/her own. At that juncture, the earlier previewing experience is validated for the infant. Validation of this kind most likely enhances the infant's internal control and enables him/her to feel that developmental achievements enrich the

relationship with the caregiver. The Effectance Motivation System The caregiver's motivation for engaging in previewing behavior may be related to White's (1959) concept of an effectance motivation system. White posited that individuals are inherently guided to interact with the environment in order to enhance competence and mastery. Even in neonates, this system appears to integrate somatic, affective, cognitive and motivational dimensions. White proposed that the infant's curiosity about and exploration of the environment suggest the presence of an intrinsic motivational system. The pleasure that the infant displays upon mastering new skills is matched by the infant's increased adaptational capacities, which in turn foster higher levels of achievement. In this manner, precursory behaviors indicative of new skill (e.g., kicking gestures as a prelude to crawling) motivate the mastery of more complex functions. In turn, the caregiver who observes these precursory behaviors is motivated to help the infant refine skills during previewing exercises. Thus, factors inherent to the infant, such as the effectance motivation system, may trigger the caregiver's use of previewing behavior. White's motivation system also has implications for the infant's emerging sense of self. White suggested that self-esteem is rooted in the experience of effectance, noting that parental encouragement can affect self-esteem. Harter (1974, 1977) has demonstrated that social reinforcement motivates the child toward competence. The previewing process, which uses parental encouragement and relies on the infant's precursory behaviors, may therefore exert a dual impact on mastery and self-esteem. First, previewing regulates the achievement of new skills, so that the infant avoids failure and instead experiences competence. Second, as Harter suggests, the caregiver's encouragement further motivates the infant toward mastery. Moreover, the mastery sensations associated with previewing exercises may heighten the infant's expectations of competence when faced with new tasks. Many of the infant's achievements become meaningful because they are attained during the relationship with the caregiver. In this way, the caregiver's expectations of the infant's competence may be conveyed to the infant through the display of positive emotion. In turn, the infant may come to associate the positive emotion with newly acquired skill. Previewing developmental skills for the infant is perhaps the most notable way in which the caregiver encourages the infant's effectance motivation. It should also be pointed out that while some aspects of the previewing process—the representation of imminent infant skills and their enactment through previewing behaviors—are most likely performed consciously, the caregiver may not be fully aware of the implications of these behaviors. That is, while the caregiver can generally describe her representations and enactments, these behaviors often occur without a great deal of introspection. In addition, part of the caregiver's motivation for engaging in previewing may be unconscious, particularly when unresolved conflict interferes with the caregiver's representations and undermines their positive effect. In these instances, the caregiver may either fail to acknowledge the infant's precursory behaviors through previewing exercises or may expose the infant to certain skills before he/she is developmentally equipped to handle them. Both of these responses are examples of how "ghosts" (episodes from the caregiver's own childhood or experience with other children) may enter the dyadic interaction and frustrate the infant's development (Fraiberg, Adelson and Shapiro, 1977). In such cases, the caregiver's failure to preview or the tendency to engage in precocious previewing may interfere with adaptive development, causing the infant to either withdraw into an apathetic state or to exhibit certain skills too early, as if to escape from the caregiver's influence. The following vignette, from one of the caregivers attending the group sessions on infant development, suggests how adaptive caregivers use previewing behaviors to motivate the infant toward mastery. This caregiver began attending the group when her infant was six weeks old. At that time, she described herself as an extremely athletic person, commenting that she couldn't wait to "get back into shape" and that she had already signed up at a gym to lose some of the weight she had gained during the pregnancy. This mother also noted that she hoped her baby would be athletic. "At the first sign that the baby is attracted to physical activity, I'm going to encourage it," she said. During one of the early sessions of the group, this mother described how her infant had started gesturing toward objects with his whole body. He would, for example, kick his feet and wave his arms at the same time. "It's as if he can't move one limb without moving the others, as if he hasn't learned to isolate one limb in order to

gesture with it," the caregiver told the group. Over the next several weeks, the caregiver carefully observed as the infant's gestures became stronger and more defined. She noted that to help him in his efforts, she had devised a series of strengthening exercises for the infant's arms. "Every now and then I use these exercises with the baby," the mother said. "The exercises seem to calm him down and help him organize his movements. He also looks at me in a certain way when he wants me to help him with the exercises; I think he likes the sense of sharing when I teach him new skills." A few weeks after she had started these exercises, the mother placed the infant on the floor with his favorite toy elephant nearby. The toy squeaked when it was moved up and down. Initially, the infant merely turned his head to look at the toy when the mother shook it. Then, one afternoon as the caregiver sat watching, the infant managed to reach out and hit the elephant, knocking it down. The caregiver was startled. She placed the elephant in its original upright position. She did not think that the gesture indicated any intentionality by the infant. As in the past, he had flailed arms and legs before he knocked down the elephant. But then the caregiver noticed that the infant knocked the toy over again. Again, she replaced the toy and once again, the infant knocked it down. "I think he did it deliberately," she reported to the group at the next session. "It's as if he has to move all of his limbs before he can find the one he wants to use, the left hand, to knock the elephant over." The caregiver reported that she then became determined to help the infant by placing the toy in close proximity and encouraging the infant with smiles and clapping whenever he reached for the elephant. The caregiver reported that within a few days the infant had become more adept at isolating the use of his arms from his legs, and specifically his left arm from his right arm. Each day the caregiver would place the infant on the carpet with several stuffed animals nearby and each day he would knock these toys over. She would applaud the infant's efforts, and he would always smile and coo with delight when she clapped. In addition, the caregiver reported that she had started to exercise the infant's limbs, using her gestures to guide his movements. After a week had passed, the caregiver noticed that the infant was no longer punching at the toys, but was reaching for them instead. To assist him, she moved the toys closer and gently enclosed the infant's hand over the toy to simulate genuine grasping behavior. She practiced this gesture with the infant on a regular basis, while engaging in soothing vocalizations that encouraged the infant's efforts. Although the infant's grasping motions remained clumsy, the caregiver repeated the exercise almost daily, using her hands to guide him, and providing verbal encouragement. She reported that the infant would grasp primarily with his left hand and that he often clenched his hand, a gesture that thwarted his efforts. As a result, the caregiver would gently manipulate the infant's left hand to demonstrate that by unclenching his fingers he could obtain a more secure grip. To encourage the infant further, the caregiver demonstrated herself by grasping the toy and saying, "See, honey? That's how we grab the elephant." Occasionally the caregiver would then open the infant's clenched fist and allow him to hold the toy momentarily to convey the sensation of grasping an object. While this behavior contained some imitative qualities associated with modeling, the caregiver's organization of the interaction with the infant clearly transformed the behavior into a previewing exercise designed to introduce the infant to an upcoming developmental change. Throughout the exchange, the caregiver reported, she maintained a representation of the infant grasping the toy. This representation, she said, motivated her previewing behavior. When the infant was approximately three months old, he reached for the elephant occasionally with a closed fist and occasionally with an open hand. Again, the caregiver continued her previewing behaviors. Whenever the infant missed, he would gaze at the caregiver and emit some sounds, as if asking for assistance. Eventually, his grasp became firm and directed. Rarely did he need to move all of his limbs in order to isolate only one. The caregiver continued to support the infant by introducing new previewing exercises, consistently applauding his efforts. This vignette reveals how an adaptive caregiver became attuned to her infant's precursory behaviors, represented or envisioned his acquisition of grasping skills and subsequently used previewing exercises to help the infant master these skills. In this instance, the caregiver inferred that the infant wished to grasp the toy—a goal inherent in his precursory gestures—and designed a series of previewing exercises to expose the infant to the sensations of grasping. In addition, the caregiver continued these behaviors even when the infant displayed

only minimum improvement. The caregiver was also sensitive to the infant's individual characteristics, such as the use of his left hand and his tendency to clench his fist, and her previewing exercises accommodated these qualities.

THE CONTRIBUTIONS OF THE INFANT'S INNATE CAPACITIES

Categorization Certain aspects of infant development appear to be innate. This means that an infant will achieve many developmental skills on his/ her own in response to the dictates of his/her constitution. Similarly, the infant seems to possess innate skills that help him/her coordinate information from the external environment. To understand how the infant develops internal representations of the self and of others, one should first examine these constitutional capabilities. Categorization is viewed as a cognitive ability present early in life (Hayne, Rovee-Collier, and Perris, 1987). Researchers have differentiated between the perceptual and conceptual components of categorization (Bruner, Goodnow and Austin, 1956; Neisser, 1967). Perceptual categorization refers to the understanding that two items resemble one another, while conceptual categorization refers to the notion that two items belong in the same category. Bornstein (1981) has found evidence that infants of four months of age are capable of both types of categorization. Bornstein explains that when infants categorize colors they become habituated to a single color and can subsequently discriminate among novel colors. Infants habituated to a variety of colors who are later shown a novel color are also able to generalize the habituation to the new color. This behavior suggests that a concept, as defined by Bourne (1966), has been formulated. Bourne notes that a concept is generated when two or more distinct objects or events have been grouped together and separated from other objects on the basis of a shared feature. From these findings, one can infer that infants are not only capable of differentiating among stimuli, but are also capable of formulating concepts about these stimuli. Studies by Hayne and co-workers (1987) and Haith, Hazan and Goodman (1988) indicate that the infant internalizes rehearsal behaviors and their interpersonal meanings. These investigations suggest that the infant formulates representations of specific behaviors, along with the social consequences of the behaviors. In their study of categorization and memory retrieval in three-month-olds, Hayne et al. documented the retention of category-specific information over extended intervals. Supplementing these findings, Haith et al. also found that three-and-a-half-month-old infants developed expectations about events and acted on these expectations whether or not their actions had an effect on current stimulus events. Further research concerning the relationship between categorization and concept formation may help in describing how the infant distinguishes between representations relating to the self that affect internal awareness and representations relating to external reality that affect other people and objects. It is hypothesized that previewing facilitates the infant's categorization of stimuli in relation to the caregiver. Lacking exposure to previewing exercises, the infant's categorizing skills may come to primarily focus on physical objects, impeding focus on representations of the "self and "other."

Amodal Perception

Amodal perception, another innate skill, enables the infant to connect different sensory modalities, such as touch and smell, color and sound, etc. (Stern, 1985). While it is not yet known how infants transfer information from one sensory modality to the other, Gibson (1969) has speculated that such transfers are mediated by a quality common to two or more senses. For example, Gibson notes that events occurring over time have a temporal structure that may be identified by more than one sense. Thus, the sound and sight of a bouncing ball share a common temporal rhythm. This rhythm may be used to connect the ball's visual and auditory qualities. The coordination of sensory information leads to the realization that visual perception may also relate to auditory or tactile perception. Previewing exercises facilitate amodal perception, and may therefore help the infant formulate coherent representations of the self and other, especially the caregiver. An illustration may be provided by examining how speech is rehearsed through previewing exercises. As the caregiver modulates the pace and rhythm of her vocalizations, she not only previews speech as a form of communication, but also integrates the auditory qualities of speech with the tactile qualities of rhythmic stroking and the visual qualities of exaggerated facial expressions (Trevvarthen, 1980,1985; Fernald and Kuhl, 1987). When the infant exhibits a positive response, the caregiver repeats these behaviors, reinforcing the infant's amodal perception of the experience. By helping the infant coordinate the diverse aspects of perceptual

experience, amodal perception facilitates the infant's representations of self and other. Indeed, the primary way in which the infant may experience the self during early life may be as "the entity that integrates perceptions." It may also be proposed that the perceptions of different senses become interrelated during direct experience. According to this view, perceptual equivalences occur when at least two sensory modalities are experienced simultaneously. For example, when the infant associates an object's visual properties with the object's sounds, a connection is established between these two sensory modalities. While amodal perception appears to be a component of the infant's natural endowment, however, the caregiver's contribution to the emergence of this ability should not be underestimated. Studies by Messer and Vietze (1988) and Kurzweil (1988) suggest that maladaptive or grossly insufficient caregiving interferes with the emergence of the infant's amodal capacities, as well as a host of other developmental skills. In such a caregiving environment, representational capacities may be impeded, thereby delaying the infant's ability to experience amodal perception.

Other Capacities In addition to amodal perception and categorization, infants possess a variety of other skills that help them develop representations about the self and other. For example, Piaget (1952) has described such skills as assimilation and accommodation, which facilitate the infant's organizational experience. Assimilation has generally been defined as the taking-in aspect of intelligence which permits appropriate stimuli to be incorporated within a structure, while accommodation refers to the change in the structure itself which enables the organism to react to a given stimulus (Piaget, 1952). Piaget argues that infants can develop adequately if sufficient opportunities for stimulation are present and that it is not necessary for these opportunities to come from another individual. According to Stern (1985), however, even these skills may be inadequate for explaining how the infant organizes diverse experiences. Stern posits that it is unlikely the infant can attain sophisticated representations of the self and other on his/her own. Without the presence of a supportive other with more advanced representations, the infant's establishment of a coherent sense of self and other would appear to be an almost insurmountable task. Indeed, the pivotal role played by the caregiver emerges when we examine the work of Spitz (1945, 1946). Studying institutionalized infants deprived of the nurturance of a regular caregiver, Spitz encountered a behavioral syndrome characterized by emotional apathy and gradual withdrawal from the external world. As such, while Piaget's notions of the infant's innate abilities have contributed substantially to our knowledge of infant development, it appears that a full understanding of the maturational process requires examination of the caregiver-infant relationship. To date, theories of the infant's attachment to the caregiver have been used to explain the contributions of significant others to the infant's development (Bowlby, 1969, 1988). As Bretherton (1985) has acknowledged, however, these theories focus almost exclusively on the perspective of the attached party (the infant). As a result, the caregiver's physical and psychological role may have been eclipsed by this infant-centered approach. More recently, however, researchers have devoted attention to examining how the caregiver's representations influence the infant's development (Zeanah, Keener, Stewart, and Anders, 1985; Stern-Bruschweiler and Stern, 1989). Stern-Bruschweiler and Stern (1989) have reported, for example, that the early dyadic relationship has four components: the infant's overt behavior, the mother's overt behavior, the infant's representations, and the mother's representations. Of these, the mother's representations may be the most significant, according to Stern-Bruschweiler and Stern, since a modification of these representations is likely to alter the entire course of the relationship. As suggested by Stern-Bruschweiler and Stern (1989), it is probable that the caregiver's representations of herself, her infant, and the world significantly affect the evolution of her child's representations. Main, Kaplan and Cassidy (1985) have shown that the caregiver's representation of her own attachment figure predicts the attachment pattern she establishes with her infant. Attachment patterns appear to relate more to the caregiver's representation of her own mother than to the actual behaviors the caregiver was exposed to as a child. In effect, the mother's perception of her own mother may be replicated during interactions with the infant. For example, some studies have indicated that certain behavior patterns, such as abusive behavior, may be passed from generation to generation in this fashion (Bowen, 1978; Crittenden, 1985a, b). In comparing the developmental models of Bowlby and Stern,

Bretherton (1987) points out that the two are both similar and dissimilar. Both Stern and Bowlby emphasize that the infant's ability to engage in a meaningful relationship with the caregiver evolves in conjunction with the developing sense of self. Bowlby focuses primarily on the attachment behavior, however, while Stern focuses on the totality of the relationship between infant and caregiver. According to Bretherton, Stern's more general theory fails to explain why, for example, infants display preferences for their caregivers when they need support, but seem less discriminating in their preferences at other times. The previewing process may provide insight about how these preferences for the caregiver evolve. Since previewing exercises are endowed with emotional meaning by the caregiver, it is posited that the infant may learn about his/her self and the other in the context of the relationship with the caregiver. As such, the previewing process may help explain Bowlby's views on attachment because it focuses on the exchange of representations within the parent-child relationship. The process by which representations are transmitted from caregiver to infant warrants further study (Zeanah and Anders, 1987). Previewing, which incorporates the caregiver's past, current and future representations, as well as the infant's past, current and future representations, may shed some light on this issue. Not only does previewing encompass the caregiver's representations, which are then assimilated by the infant, but previewing may add a motivational component, compatible with the infant's effectance motivation system, stimulating the infant to test amodal perception, as well as categorization skills. When a developmental skill that has been previewed (e.g., grasping fine objects) is achieved, categorization and amodal perception help the infant to coordinate the new skill. Amodal perception also helps the infant to traverse between perceptions of internal versus external reality. For example, during previewing exercises the infant contrasts perceptions of the caregiver's gestures (external reality) with perceptions of his/her own gestures (internal reality). Similarly, previewing exercises may facilitate comparisons of current perceptions with past and future perceptions, integrating a temporal dimensions into the experience. Achieving a new skill and mastering more sophisticated skills becomes a pleasurable activity that fuels the infant's internal control. These feelings reinforce for the infant representations of the self and other that are compatible with perceptual experience. The infant's perception of the caregiver as a supportive partner who helps him/her assimilate representations of the environment may be illustrated by the game of peek-a-boo. During peek-a-boo the infant confirms the representation of an autonomous sense of self, as well as the representation of the caregiver, whose image remains constant even when he/she is physically absent. Peek-a-boo contains a symbolic message: the infant now understands that both he/she and the caregiver are stable entities, whether or not he/she sees or is seen by the caregiver. As a developmental achievement, then, peek-a-boo suggests that the infant's internal representations of self and other are becoming both permanent and consistent. One of the adaptive caregivers attending the group sessions described earlier reported that she played peek-a-boo with the infant. The mother said that when her child was three months old, she had covered her face with her hands, then took them away and said "peek-a-boo," but was disappointed when the infant failed to display any notable response. When the infant was four months old, however, the mother reported a discernible response. She would lean down so that she was in the infant's direct line of vision and cover her face with her hands. While peering through her fingers to assure herself that the infant was looking at her, the mother removed her hands and sang out "peeka-boo". Although the infant did not laugh or smile, she appeared excited. Her eyes grew wide and round, she kicked her heels together and emitted gasping sounds. The mother would smile broadly after each such episode, signaling to her daughter that this was a pleasurable interaction and reinforcing the infant's behavior, thereby increasing the likelihood that the infant will again display the behavior. When the infant was approximately five months old, the mother reported that she could use peek-a-boo to evoke laughter in her daughter. At the same time, the infant discovered a new toy-the cloth the caregiver used to wipe the baby's hands and face after nursing. The infant would rub the cloth over her face until it was completely covered. Then, she would wave her arms and legs, making loud gurgling sounds. The first few times the infant did this, the caregiver became concerned and pulled the cloth off her daughter's face. She soon realized, however, that the infant was pulling the cloth onto her face

as fast as the caregiver could remove it. Moreover, if the caregiver did not interfere, the infant would remove the cloth herself and would turn her head to look at the caregiver when she had accomplished this task. It appeared that the infant was using the memory of her past experience to imitate an episode of interaction with the caregiver. In addition, we may also hypothesize about the infant's motives. In a sense, it was as if the infant were playing "peek-a-boo" with herself and asking the caregiver to watch her. While the caregiver's first impulse was to help her daughter, she permitted the infant to experiment. Each time the infant pulled the cloth from her face, the caregiver would applaud and say, "Yippee!" During one session, the caregiver told the group that "it's as if the baby wants to be scared and that's why she kept gasping and kicking when she first started playing peek-a-boo. I just can't understand why she was so scared." The mother added that maybe the infant was teething and the sensations in her mouth bothered her. She suddenly said, "maybe that's what 'peek-a-boo' is all about. She is proving to herself that she can deal with change, because certain things-like my relationship with her-don't change." The mother's interpretations here are particularly important because the emotional content she associates with her attributions is likely to be transferred to the infant. The caregiver had inadvertently alluded to part of the allure peek-a-boo may have for young infants. By covering up her face, the infant may have experienced the mother's absence and with it the fear that the mother had gone away. By five months of age, however, the infant had begun to develop more stable representations of both "self" and "other". As a result, the momentary uncertainty that the infant may have experienced earlier because the caregiver was not visible was replaced with the pleasurable sensation the infant experienced now that she possessed a stable mental representation of the caregiver. Moreover, peek-a-boo may also be viewed as a previewing exercise, because it introduces the infant to the notion that although the caregiver will not always be physically present, representational capacities will enable the infant to keep the caregiver psychologically present. This kind of previewing exercise suggests how the infant formulates representations of "self and "other."

THE REPRESENTATION OF RELATIONAL PATTERNS

To further understand how previewing contributes to the infant's formation of representations, it is helpful to describe how representations first enter into a relationship. Stern (1989) has described a system of relational patterns that arises from interaction with the mother. Repeated attachment behaviors appear to foster these patterns (Osofsky, 1988). For example, if the caregiver engages in rocking or stroking behavior on a regular basis, the infant will eventually come to expect this behavior. The infant will also come to expect the soothing vocalizations and affectionate cooing the caregiver exhibits at these times. Taken together, all of these behaviors reinforce the attachment between caregiver and infant. Stern maintains that memory promotes continuity in object relationships. Memories of past interactions guide present interactions, while present interactions predict future interactions. Previewing exercises replicate this process because they incorporate representations of past, present and future skills. Previewing exercises also appear to provide the infant with specific learning experiences that may enable him/her to differentiate the relationship with the caregiver from other relationships. Stern's (1989) theory of relational patterns begins with a lived (L) specific interactive moment, an L-Moment. Groups of L-Moments are clustered together in memory to form a specific episodic memory, an M-Moment. Similarly, numerous M-Moments cluster to form a prototype. The prototype may be viewed as a representation of M-Moments that cluster to form a generalized moment. This representation is called an R-Moment and makes up the next unit in the hierarchy. There are also sequences of R-Moments called L-Scenarios. These, too, become specific episodic memories of M-Scenarios. Eventually, M-Scenarios become organized to form a representation, an R-Scenario. According to Stern, R-Moments are fragments of interpersonal experience that contain the perceptions, affects, goals, and actions of the self and the other organized in a sequence. Previewing exercises may facilitate the formation of these representations, the R-Moments. But previewing may also contribute to the formation of even larger representational units. Stern notes that interactive L-Moments are categorized in memory as M-Scenarios, whose representations are R-Scenarios. Stern's definition of the term "scenario" describes the representation of the mother-infant relationship and is reminiscent of the term "script." Bretherton (1990) views scripts as

representations that incorporate temporal and causal sequences of action, as well as elements of parental appraisal. Schank and Abelson (1977) refer to a script as a sequence of events that occur in a particular context. Generally, scripts are made up of slots, with requirements about the content filling those slots. The structure is an interconnected whole; the content of one slot affects the content of another, according to Schank and Abelson (1977). Exposure to previewing exercises may help the infant formulate scripts. Nelson and Gruendel (1981) have highlighted the characteristics of scripts that are relevant to the young child's representational abilities. Previewing exercises incorporate many of these characteristics. Like scripts, a crucial aspect of the caregiver's previewing behaviors is the integration of events in sequence. Among the most important features of the child's representations are the ability to experiment with causal connections; predict sequences, specify roles, actions, and props; and test their consistency over time. All of these characteristics are incorporated into a previewing exercise. When viewed as a process that fuels the formation of a script or a scenario, then, previewing appears to promote the infant's representations of the self and other.

PREVIEWING, SCRIPTS, AND THE ATTACHMENT BOND

A substantial amount of research indicates that the child's representation of an attachment figure at six years may be predicted from an attachment classification with the mother-although not with the father-at one year of age. Although this finding may be contingent upon traditional patterns of caregiving which have begun to change in recent years as mothers enter the work force, Bretherton (1985) has nonetheless concluded that the attachment figure who spends more time with the infant-whether mother or father-more strongly influences the infant's representations. In this regard, it should be noted that fathers seem as capable as mothers in devising previewing exercises for the infant. Of course, it should also be remembered that the "quality" of the time the parent spends with the infant may be as important as the "quantity" of the time. In order for previewing to foster comprehensive representations, the caregiver should engage in these exercises with the infant on a frequent basis. Most fathers do not spend as much time with the infant as do mothers. They are thus less aware of the infant's precursory behaviors and less apt to represent future infant development and convert these representations into previewing exercises. As a result, the previewing process causes the infant to focus on the primary interactive caregiver and to generalize from the events of this relationship to other relationships. All of these statements are made with some reservations given the changes in traditional caregiving patterns that have influenced our society in recent decades. Despite these changes, however, it still appears that one parent assumes the major responsibilities for the infant's nurturing. In effect, during previewing exercises the caregiver and infant develop their own language. Previewing exercises may be viewed as a language for communicating on three levels: the present, the future, and the past. In the present, a caregiver previews for the infant the message that an upcoming developmental skill consists of a particular combination of precursory behaviors. This type of communication, in which the content of the message and the means used to convey it are identical, is referred to as the analogic mode of communication (Watzlawick, Beavin, and Jackson, 1967). However, when the caregiver previews with the infant she not only conveys a message about a current activity, but also orients the infant toward upcoming developmental skills and the interpersonal implications of these skills. These latter messages are symbolic. The simulated behavior (e.g., crawling) serves as a metaphor for a future time when the infant will successfully exhibit this developmental skill. One conveys symbolic meaning through the digital mode of communication. In digital communication, the symbol used to convey the message is different from the content of the message itself. The most sophisticated form of digital communication is language, in which the content of the message and the message itself are entirely divorced from one another and arbitrary symbols-words-signify objects and concepts. While previewing exercises may not resemble digital communications in the same fashion as words, the process appears to be an effective form of communication that uses both the analogic and digital elements. As a language shared with the caregiver, previewing exercises are consistent forms of communication that enable the infant to experience sensations in a direct manner, while at the same time representing future changes symbolically.

PREDICTING INTERPERSONAL FAILURES IN THE ATTACHMENT RELATIONSHIP

Beyond transmitting parental approval, familiarizing the infant with future developmental changes, and stimulating the infant's representations of self and other, previewing exercises appear to serve another significant purpose. Since the previewing process begins with maternal representations of imminent developmental skill, access to the caregiver's representations may yield insight into potential conflict that may interfere with the mother-infant rapport. In other words, the previewing process may predict potential conflict. In this context, conflict refers to aspects of the infant's development about which the caregiver harbors ambivalence. Although conflict may be more readily apparent in caregivers with psychiatric conditions, it may also occur in caregivers who generally display adaptive behaviors when interacting with their infants. Indeed, one sign of conflict may be the caregiver's failure to engage in sufficient previewing exercises or his/her tendency to engage in these exercises before the infant is developmentally ready for new skills. Both of these responses may indicate that the caregiver possesses distorted representations of the infant. Failure to preview may also be due to the caregiver's unwillingness to recognize the significance of precursory behaviors, because such skills may signify the infant's autonomy and separation, an outcome the caregiver wishes to postpone because it will change the dyadic rapport. Premature previewing, on the other hand, may stem from a related source. If the caregiver perceives of himself/herself as incompetent, interaction with the infant may reinforce these negative feelings. Thus, previewing exercises may be used to precociously propel the infant toward autonomy, so that these negative feelings may be avoided. In either case, inappropriate representations are transferred to the infant, interfering with normal development (Trad, 1989b). The previewing process may, however, be used therapeutically to explore potential conflict before the caregiver manifests maladaptive behavior or otherwise interferes with the infant's normal developmental course. In addition, therapeutic previewing may alert the caregiver to conflict and enable her to formulate more adaptive outcomes. The following technique was instituted among the groups of adaptive and maladaptive caregivers mentioned earlier. The therapist's goal was to evaluate the caregiver's ability to preview by introducing this method during a private interview. First, the caregiver was asked to describe the infant's current developmental status. The therapist looked for physical as well as psychological attributions in this description. Subsequently, the therapist assessed the infant developmentally using a standard and accepted instrument. Next, the caregiver was asked to engage in free play with the infant while the therapist observed the interaction. Finally, the caregiver was asked to describe and predict upcoming developmental changes in the infant. The following vignette describes how previewing techniques disclosed a mother's increasing ambivalence about her infant's autonomy and independence, and assisted the caregiver in surmounting this conflict. The caregiver, a 24-year-old primigravida, was first seen for treatment in the second month of her pregnancy. She had a previous history of psychotic episodes, although she had been controlled on medication for the past few years. Since the pregnancy mandated cessation of this medication, the woman's therapist recommended that she seek guidance to monitor her pregnancy. During the first few months of treatment, the caregiver discussed her expectations of the birth. In her sixth month of pregnancy, she reported a dream. This dream may be viewed as a mental representation for predicting future interpersonal exchange with the infant. "In the dream I had given birth to a baby boy and the baby was very hungry." When the therapist asked how the mother knew the baby was hungry, she said, "I just knew." She continued: "Suddenly I became very scared because I didn't have any milk. So I improvised by mixing some sugar with water. But when I tried to feed it to the baby, he pushed it away." The mother emphasized that in the dream the baby was a boy. She had mentioned repeatedly during previous sessions that the thought of having a boy, rather than a girl, frightened her, "because little boys get older so much faster." The mother used this comment to freeassociate to her own childhood. She had been the only girl in a family of five children. Her brothers had taunted her from an early age. She noted that she believed many of her insecurities as an adult stemmed from her brothers' treatment of her when she was a child. From these comments, the therapist inferred that the caregiver feared the infant might reject her. In addition, the fact that the infant in the dream was a boy suggested that this caregiver might experience conflict around developmental

issues involving separation and individuation. Several weeks later, the caregiver reported another dream. "This time," she said, "I gave birth to a girl." The caregiver sounded satisfied and noted that in the dream the baby was so small she was able to hold the infant in the palm of her hand. When the therapist asked the mother to describe the baby, she said, "the baby's teeth were like mine, her hair was curly like mine and her complexion was like mine. I was happy that it was a girl, only I wish she didn't have my crooked teeth." The caregiver eventually gave birth to a baby boy. Her husband was supportive, changing his shift at his factory job to spend more time with his wife and the newborn. The caregiver decided to breastfeed the infant and reported that she always felt pleased when the infant took milk from her. She occasionally remarked, "It's not like in the dream when the baby rejected the milk." The infant's developmental course proceeded adaptively. Each time the infant manifested precursory behaviors indicating a new skill, the therapist encouraged the caregiver to preview the skill by predicting the infant's future behavior and her response to that behavior. The mother expressed particular excitement at the prospect of the child's eventual speech. "When he talks, we'll really be able to communicate. I will teach him things." When the infant was approximately eight months old, the therapist noted that he was beginning to stand up on his own. The therapist asked the mother to describe the skill that the baby would soon exhibit as a result of these precursory behaviors. In stark contrast to her earlier enthusiasm about the infant's development, the mother said tersely, "no . . . His daddy will teach him how to walk. That's something he has to learn on his own." This response was surprising since the caregiver had had a positive reaction to previewing speech for the infant, a milestone that was evolving normally. The caregiver subsequently reported the following dream. "I was walking with the baby and everything was fine. Then he broke away from me and began walking by himself. After a few minutes he fell down and hit his head on the ground. He had a big cut that was bleeding, so I rushed him to the hospital. The nurse took him away from me and told me to wait because they would fix the baby. In a few minutes, the nurse came out carrying two babies. I remember saying, 'baut I was the one who was supposed to have the baby.'" During this session the caregiver also told the therapist that she was thinking about having another baby. "I think it's the right time," she said. When the therapist asked why, she said, "because Tommy needs someone to play with." She also commented on what a "big boy" Tommy had become, adding that she sometimes lied about his age. "He's almost one year old now, but I don't like to think about that. Sometimes I tell people I have a newborn . . . I know it's a lie, but I like the feeling. When he was younger I always knew what to expect. Now everything is uncertain. Tommy changes every day and he's making all of us-me and my husband-change too. I'm not sure I like it anymore." The therapist interpreted the caregiver's dream as a representation of her unconscious feelings about the infant's development and, in particular, walking. In the dream, when the caregiver walked with the infant, everything was fine. However, the infant was injured when he tried to walk by himself. Moreover, in the dream the infant-not the caregiver-gave birth to another infant. This dream coincided with the caregiver's desire to have another baby, as well as her lies about the infant's true age. These disclosures suggested that the caregiver's difficulties in predicting walking behavior were connected to her fears about the infant's autonomy and the implications such autonomy would have for her relationship with the infant. The mother appeared to be predicting abandonment precipitated by the infant's walking. To quell these fears, the mother had decided to have another baby in order to replace the infant, who was perceived as moving away from her. As indicated in this vignette, the therapeutic effort to encourage the mother to engage in predictions of developmental skills through previewing encourages the disclosure of their representations. In this case, the therapist helped the mother work through her conflict by enabling her to understand that the physical separation caused by walking behavior would not necessarily alter the intimate relationship she shared with her son. As this caregiver gradually came to understand her son's behaviors, she accepted that future developmental skills could enhance the dyadic rapport. Previewing behaviors became more evident in her interactions. Of significance was the fact that this mother now looked for precursory behaviors in her son and devised a previewing exercise whenever such preliminary behaviors were observed. Her son, in turn, continued to develop adaptively. CONCLUSION

The previewing process by which caregivers predict and enact upcoming developmental skills with their infants seems to play a significant role in the infant's early representations of the self, the caregiver and the external world. The infant's innate abilities for amodal perception and categorization appear to be enhanced by previewing exercises, which provide the infant with rehearsals of particular skills under the caregiver's guidance. These exercises may help the infant to organize perceptions of external events, as well as perceptions of internal capacities. During previewing exercises, the infant receives positive appraisals about the present and the future from the caregiver, facilitating his/her ability to represent himself/herself as functioning independently from the caregiver. In short, exposure to previewing exercises may motivate the infant's perceptions of himself/herself as a separate individual. Once the infant internalizes these representations, he/she begins to comprehend the causes of events. Preliminary work with diverse groups of new mothers indicates that infants exposed to previewing enjoy a more optimal developmental course. Because previewing appears to be an integral aspect of early interaction between adaptive caregivers and their infants, it seems reasonable that the caregiver should affect the child's representations more than anyone else, allowing the infant to generalize the lessons of previewing to other areas of function.

REFERENCES

1. Behrends, R.S., and Blatt, S.J. (1985). Internalization and psychological development throughout the life cycle. *Psychoanalytic Study of the Child* 40, 11-39.
2. Bernstein, M. (1981). Psychological studies of color perception in human infants. In L.P. Lipsitt (Ed.), *Advances in infancy research* (Vol. 1, pp. 1-4). Norwood, NJ: Ablex.
3. Bourne, L.E. (1966). *Human conceptual behavior*. Boston: Allyn and Bacon.
4. Bowen, M. (1978). *Family therapy in clinical practice*. New York: Jason Aronson.
5. Bowlby, J. (1969). *Attachment and loss* (Vol. 1). New York: Basic Books.
6. - (1988). Developmental psychiatry comes of age. *American Journal of Psychiatry* 145(1), 1-10.
7. Bretherton, I. (1985). Attachment theory: Retrospect and prospect. 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).
8. - (1987). New perspective on attachment relations: security, communication and internal working models. In J. Osofsky (Ed.), *Handbook of Infant Development* (pp. 1061-1100). New York: Wiley.
9. - (1990). Communication patterns, internal working models, and the intergenerational transmission of attachment relationships. *Infant Mental Health Journal* 11(3), 237-252.
10. Bruner, J.S., Goodnow, J.J., and Austin, G.A. (1956). *A study of thinking*. New York: Wiley.
11. Campos, J. J., Campos, E.G., and Barrett, K.C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology* 25(3), 394-402.
12. Crittenden, P.M. (1985a). Maltreated infants: Vulnerability and resilience. *Journal of Child Psychology and Psychiatry* 26, 85-96.
13. - (1985b). Social networks, quality of child rearing, and child development. *Child Development* 56, 1299-1313.
14. DSM-III-R, *Diagnostic Statistical Manual*, 3rd Ed.-Rev. (1987). American Psychiatric Association, Washington, D.C.
15. Fernald, A. and Kuhl, P. (1987). Acoustic determinants of infant preference for motherese speech. *Infant Behavior and Development* 10, 279-293.
16. Fraiberg, S., Adelson, E., and Shapiro, V. (1977). Ghosts in the nursery: A psychoanalytic approach to the problems of impaired infant-mother relationships. *Journal of the American Academy of Child Psychiatry* 14, 387-421.
17. Gibson, E.J. (1969). *Principles of perceptual learning and development*. New York: Appleton-Century-Crofts.
18. Haith, M.M., Kazan, C., and Goodman, G.S. (1988). Expectation and anticipation of dynamic visual events by 3.5-month-old babies. *Child Development* 59, 467-479.
19. Harter, S. (1974). Pleasure derived by children from cognitive challenge and mastery. *Child Development* 45, 661-669.
20. - (1977). The effects of social reinforcement and task difficulty level on the pleasure derived by normal and retarded children from cognitive challenge and mastery. *Journal of Experimental Child Psychology* 24, 476-494.
21. Hayne, H., Rovee-Collier, C., and Perris, E.E. (1987). Categorization and memory retrieval by three-month-olds. *Child Development* 58, 750-767.
22. Kurzweil, S.R. (1988). Recognition of mother from multisensory interactions in early infancy. *Infant Behavior and Development* 11, 235-243.
23. Main, M., Kaplan, K., and Cassidy, J. (1985). Security in infancy, childhood and adulthood. A move to the level of representation. In I. Bretherton and E. Waters (Eds.), *Growing points of attachment and research*. *Monographs of the Society for Research in Child*

Development 50(1-2, Serial No. 209), 66-104. 24. Medin, D.L. (1983). Structural principles in categorization. In B. Shepp and T. Tighe (Eds.), *Interaction: Perception, development and cognition* (pp. 203-230). Hillsdale, NJ: Erlbaum. 25. Messer, D.J., and Vietze, P.M. (1988). Does mutual influence occur during mother-infant social gaze? *Infant Behavior and Development* 11, 97-110. 26. Neisser, U. (1967). *Cognitive psychology*. New York: Appleton-Century-Crofts. 27. Nelson, K., and Gruendel, J. (1981). Generalized event representations: Basic building blocks of cognitive development. In M.E. Lamb & A. Brown (Eds.), *Advances in Developmental Psychology*, Vol. 1. Hillsdale, New Jersey: Erlbaum. 28. Osofsky, J.D. (1988). Attachment theory and research and the psychoanalytic process. *Psychoanalytic Psychology* 5(2), 159-177. 29. Papousek, H., and M. Papousek (1982). Integration into the Social World: Survey of Research. In P. Stratton (Ed.), *Psychobiology of the Human Newborn*. New York: Wiley. 30. Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press. 31. Pipp, S., Fischer, K.W., and Jennings, S. (1987). Acquisition of self and mother knowledge in infancy. *Developmental Psychology* 23, 86-96. 32. Resnick, J.S., and Kagan, J. (1983). Category detection in infancy. In L.P. Lipsitt (Ed.), *Advances in infancy research* (Vol. 2, pp. 79-111). Norwood, NJ: Ablex. 33. Schank, R.C. & Abelson, R. (1977). *Scripts, plans, goals and understanding*. Hillsdale, NJ: Lawrence Erlbaum Associates. 34. Spitz, R. A. (1945). Hospitalism. An inquiry into the genesis of psychiatric conditions in early childhood. *Psychoanalytic Study of the Child* 1, 53-74. 35. -(1946). Anaclitic depression. *Psychoanalytical Study of the Child* 2, 113-117. 36. Stern, D.N. (1985). *The Interpersonal world of the infant: A view from psychoanalysis and developmental psychology*. New York: Basic Books. 37. -(1989). The representation of relational patterns: developmental considerations. In A.J. Sameroff and R.N. Emde (Eds.), *Relationship disturbances in early childhood*. New York: Basic Books. 38. Stern-Bruschweiler, N., and Stern, D.N. (1989). A model for conceptualizing the role of the mother's representational world in various mother-infant therapies. *Infant Mental Health Journal* 10(3), 142-155. 39. Trad, P.V. (1989a). *The preschool child: Assessment, diagnosis, and treatment* New York: Wiley. 40. -(1989b). Self-mutilation in a new mother: A strategy for separating from her infant. *American Journal of Psychotherapy* 43, 414-425. 41. -(1990a). Infant previewing: Predicting and sharing interpersonal outcomes. New York: Springer-Verlag. 42. -(1990b). Emergence and resolution of ambivalence in expectant mothers. *American Journal of Psychotherapy* 44, 577-589. 43. -(1992). *Interventions with infants and parents: The theory and practice of previewing*. New York: Wiley. 44. Trevarthen, C. (1980). The foundations of intersubjectivity: Development of interpersonal and cooperative understanding in infants. In D.R. Olson (Ed.), *The social foundations of language and thought Essays in honor of Jerome S. Bruner* (pp. 316-342). New York: W.W. Norton and Company. 45. -(1985). Facial expressions of emotion in mother-infant interaction. *Human Neurobiology* 4, 21-32. 46. Watzlawick, P., Beavin, J., & Jackson, D. (1967). *Pragmatics of human communication*. New York: Norton. 47. White, R.W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review* 66, 297-333. 48. Zeanah, C.H., and Anders, T.F. (1987). Subjectivity in parent-infant relationships: a discussion of internal working models. *Infant Mental Health Journal* 8(3), 237-249. 49. Zeanah, C.H., Keener, M.A., Stewart, L., and Anders, T.F. (1985). Prenatal perception of infant personality: a preliminary investigation. *Journal of the American Academy of Child Psychiatry* 24(2), 204-210. AuthorAffiliation Paul V. Trad, M.D. AuthorAffiliation Paul V. Trad, M.D., is Director of the Child and Adolescent Outpatient Department, Cornell University Medical Center, Westchester Division, 21 Bloomingdale Road, White Plains, New York 10605.

Publication title: Pre- and Peri-natal Psychology Journal

Volume: 7

Issue: 4

Pages: 287-312

Number of pages: 26

Publication year: 1993

Publication date: Summer 1993

Year: 1993

Publisher: Association for Pre&Perinatal Psychology and Health

Place of publication: New York

Country of publication: United States

Journal subject: Medical Sciences--Obstetrics And Gynecology, Psychology, Birth Control

ISSN: 08833095

Source type: Scholarly Journals

Language of publication: English

Document type: General Information

ProQuest document ID: 198678429

Document URL: <http://search.proquest.com/docview/198678429?accountid=36557>

Copyright: Copyright Association for Pre&Perinatal Psychology and Health Summer 1993

Last updated: 2010-06-06

Database: ProQuest Public Health

Contact ProQuest

Copyright © 2012 ProQuest LLC. All rights reserved. - [Terms and Conditions](#)