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# Separateness and attachment: Maternal referencing in toddlers

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# SEPARATENESS AND ATTACHMENT:

# MATERNAL REFERENCING IN TODDLERS

by

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Abstract

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The present study investigates the theoretical notion that individual differences in the internal working models underlying infants' attachment to their mothers will influence the way in which the dyad negotiates the child's increasing independence and separateness in toddlerhood.

Data were gathered on 16 mother-toddler dyads from videotaped play sessions when the toddlers were 28-months old. Each toddler was encouraged to play alone while mother sat at the side of the play area and conversed with an examiner. The setting did not impose complete separation, but rather required the dyad to actively choose and maintain separateness in whatever way they were able. A coding system was developed to record instances when the child referenced mother (by looking at, touching, or speaking to her) and instances when mother responded to her child's bids for attention. All dyads had been classified according to attachment status in Ainsworth's Strange Situation paradigm when the infants were 18 months old; eight dyads

were classified as securely attached and eight were classified as insecurely attached.

The findings support the hypothesis that the different internal working models of attachment which are presumed to characterize the secure and insecure groups will be reflected in different patterns of maternal referencing. Insecurely attached toddlers manifest the pattern of referencing predicted on the basis of their internal working models of mother as an inconsistently available resource. They reference mother less frequently, their referencing is more often non-verbal, and they are less flexible in choosing the distance from which they reference mother. Mothers of insecure toddlers are also less responsive to their toddlers' bids for attention. In contrast, securely attached toddlers manifest the pattern of referencing predicted on the basis of their less rule-bound internal working models of the attachment relationship. They reference mother more frequently, their referencing is more often verbal, and they show greater flexibility in the distance from which they reference mother. Mothers of securely attached toddlers are also more responsive to their children's bids for attention.

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Throughout the first years of life, the child experiences in a variety of different ways his growing attachment to his mother, their negotiation of his increasing separateness from her, and his gradual discovery of his own independence.[1] Traditional theory has regarded these experiences as successive stages in early development: for example, symbiotic attachment awakens to an awareness of greater separateness and independence (Mahler, Pine & Bergman, 1975). More recent theory (e.g. Stern, 1985), in contrast, regards experiences of attachment, separateness, and growing individuation as coinciding and inter-dependent aspects of the infant's relationship to the mother from early on. Which of these aspects is prominent in experience varies between developmental stages, but all are present throughout development.

The balance between the toddler's dependence on the mother and his capacity for autonomous activity goes through particular changes during the third year of life, as the toddler is able to move away from the mother in exploration of his environment for more prolonged periods of time. The toddler's increasingly sophisticated symbolic capacities provide him with a greater capacity for self-regulation, with an increased ability to give meaning to his own experience, and with new avenues for communication. Within a psychoanalytic-developmental framework, Mahler (Mahler, Pine & Bergman, 1975)

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[1]The pronoun "he" will be used to refer to the child and "she" will be used to refer to the mothering figure for ease in reading. However, unless otherwise stated, it should be understood that the author is referring to children of both sexes.

describes the third year as the latter phase of the separation-individuation process. She focuses on the maturation of the toddler's intrapsychic structures as the critical accomplishment during this period: the fusion of libidinal and aggressive drives allows for the integration of "good" and "bad" intrapsychic objects and leads to the establishment of libidinal object constancy. The toddler's emerging libidinal object constancy (his ability to rely on an internalized sense of the mother's "goodness" and availability even in her absence) enables him to manage his growing awareness of separateness from the mother. Mahler's theoretical emphasis is less on the nature of the toddler's attachment to the mother during this period, and more on his struggle towards greater intrapsychic separation-individuation. In contrast, attachment theory (Bowlby, 1969, 1982b; Ainsworth, Blehar, Waters & Wall, 1978) emphasizes how the child's "internal working models" of his relationship with the mother (i.e. mental representations of the relationship born out of the history of his interactions with her) influence the nature of his attachment to her. Attachment theorists are interested in how the nature of the child's attachment to the mother influences development. While the reciprocal relationship between attachment and exploratory behavioral systems in infancy is elaborated in attachment theory, the relationship between the child's subjective experience of attachment and his progression through stages of increasing intrapsychic separateness and individuation from the attachment figure during toddlerhood is not addressed.

While clinical experience shows the close relationship between attachment and independence to be obvious, little attention has been

paid to how they are interwoven in early development. Psychoanalytic theory (Mahler) and attachment theory (Bowlby) each emphasize one side of these opposing yet complementary developmental processes to the relative neglect of the other. However, a unifying perspective would see successful separateness and independence as emerging not at the expense of connectedness, but through the discovery of new ways for maintaining emotional ties to important others. The more secure the infant has felt in the mother's emotional availability in the past, the more confident he can feel of the mother's continued support and availability, albeit in new form, as he moves away from her.

Attachment theory proposes that the quality of the mother-infant relationship influences the internal working models that the infant forms of that relationship, and that those internal working models directly influence how smoothly the infant moves away from the attachment figure in autonomous exploration. By taking a step forward in development, therefore, attachment theory can provide a useful conceptual framework within which to explore the intimate relationship between the quality of attachment and the separation-individuation process in early toddlerhood.

## Statement of Purpose

The present study takes a look at how the nature of the child's attachment to the mother influences the dyad's negotiation of the processes of separation-individuation in toddlerhood. Attachment theory proposes that different internal working models of the attachment figure underlie the different behaviors which identify securely attached and insecurely attached children in infancy. If a relationship between the quality of attachment and the process of

separation-individuation exists, these internal working models would be expected to influence the nature of the dyad's negotiation of greater separateness in toddlerhood.

In the present paradigm, the toddler at 28-months is encouraged to play alone in the presence of the mother when she is engaged in conversation with an experimenter and consequently not fully available to him. By observing the toddler in the presence of the mother, one can observe both how the toddler utilizes the mother, and how the mother supports the child's efforts to play on his own. Complete separation has not been imposed in this paradigm (as in the case where the child plays in the absence of the mother). Rather, the dyad must actively choose and maintain separateness in whatever way they are able. This is a task of separation-individuation like those negotiated by the dyad in small ways throughout the day. For example, when mother is preparing dinner and the toddler is encouraged to play alone, or the toddler is engaged in a task "by himself" and wants only occasional help from the mother, or mother and child are quietly engaged in a moment of solitary activity in one another's presence, these are moments which occur naturally and repeatedly, and which require mother and child to simultaneously negotiate their connectedness and separateness with one another.

In the following pages the argument will be developed that internal working models of attachment influence the separation-individuation process. It will also be suggested that maternal referencing is an aspect of the child's way of negotiating separateness from, while maintaining a connection with, the mother. A hypothesis follows from these propositions which will then be tested:

different internal working models of attachment, derived from observation of different patterns of attachment behavior at 18 months, will be reflected in different patterns of maternal referencing in this free play situation at 28 months.

# CHAPTER ONE

## Literature Review

The review of relevant literature will fall into two main sections, the first theoretical and the second empirical. The first will be a review of theoretical concepts about the separation-individuation process (as described by Mahler), and the establishment of the attachment bond (as developed by Bowlby and expanded by others). The concept of internal working models (as described by attachment theorists, and more broadly by Stern [1985]) will also be reviewed: how does the infant form internal working models of the mother, and how do these mediate the infant's feeling of secure attachment to her? The second will be a review of two areas of empirical investigation: one which looks at how the attachment figure-child relationship is internalized; and the other which tries to predict the effect of attachment on the child's subsequent functioning. The present study would fall in with this last body of research, as it empirically investigates whether the internal working models implied by certain attachment behaviors can be recognized in the dyad's negotiation of the child's autonomous explorations at a subsequent point in development.

## Theoretical Literature

### Mahler's Separation-Individuation Theory

Mahler's theory of the separation-individuation process in early childhood charts the infant's development from what she describes as a state of symbiotic attachment and non-differentiation in earliest

infancy through stages of increased awareness of separateness from mother and individuation. Individuation "consists of those achievements marking the child's assumption of his own individual characteristics" (Mahler, Pine & Bergman, 1975, p. 4), primarily the establishment of intrapsychic structures which regulate internal states and enable autonomous functioning. Separation "consists of the child's emergence from a symbiotic fusion with the mother" (p. 4) to a growing awareness of, and capacity for, separateness from her, both behaviorally and in terms of his increasingly differentiated concepts of self and other. These developments are intertwined and complementary. Healthy development proceeds when the child's discoveries of separateness from mother do not precede his ability to cope with that awareness, nor is independence or autonomous functioning impeded.

While continuing to adhere to a theory of instinctual drives and their influence on the maturation of intrapsychic structures, Mahler brought to psychoanalytic theory her own observations of early child development and a greater appreciation of the role that mother and other caregivers play in the child's early development. While Mahler, Pine and Bergman's (1975) clinical examples of the dyads they observed richly describe different aspects of the mother-child interaction which they regard as critical to the smooth progress of the separation-individuation process, their theory focuses on the mother's successful satisfaction of the infant's instinctual needs as what is pivotal to this developmental process.

Not until the third year of life, which Mahler et al. identify as the fourth subphase of the separation-individuation process, or "the

consolidation of individuality and the beginnings of emotional object constancy", does the child, in their view, begin to internalize a sense of mother as a separate and ongoing presence. Emotional, or libidinal, object constancy is achieved when the child is able to rely on an internal image of mother in her absence, even during times of moderate fatigue or emotional discomfort, in order to soothe himself. This achievement enables the toddler to remain separate from the mother for more extended periods of time.

Mahler argues that two developmental steps are essential to the "slow establishment of emotional object constancy". One, the child must have accomplished "the cognitive acquisition of the symbolic inner representation of the permanent object" (p. 110); that is to say, the cognitive tools must be available. Second, the mother must have been successful in meeting the child's needs and in relieving his physical tensions during earlier developmental phases. This is argued to be essential for the healthy development of the drives (i.e. for the neutralization of aggression and the fusion of aggressive and libidinal drives) and for the formation of stable intrapsychic structures and representations. Mahler argues that fusion of aggressive and libidinal drives "tempers the hatred for the object when aggression is intense" (p. 110) and allows for the unifying of the "good" and "bad" object into a whole representation. In this way libidinal object constancy begins to be established, enabling the child to no longer reject the "good" mother when she is not available to attend to his needs, but to sustain an image of her as a benevolent resource.

Mahler's theory of development during infancy and toddlerhood

differs from attachment theory in two important ways. First, Mahler speaks of the development of mental representations within the context of drive theory. While Mahler et al. write: "[t]he first basis for the stability and the quality of this inner representation is the actual mother-child relationship as we saw it unfolding in the day-to-day interaction between mother and child" (p. 118), their theoretical model does not allow for a detailed understanding of how qualitative aspects of the interactions between mother and child will be reflected in the quality of the child's mental representations. Second, Mahler focuses little attention on the importance of the toddler's ongoing experience of attachment to mother as a critical component of this developmental period (see Aber & Slade, 1987). Attachment theory, in contrast, focuses on the importance of the quality of the infant's attachment to the mother for early development, and on how the interactions between mother and infant are represented by internal working models which provide the infant with feelings of security.

## Attachment Theory

Bowlby (1969) was the first to describe the child's attachment to the mother as part of an evolutionarily-determined behavioral system. This behavioral system evolved within the human species because its usual outcomes contributed to species survival. Because of the human infant's long period of immaturity and consequent vulnerability, the "human young must be equipped with a relatively stable behavioral system that operates to promote sufficient proximity to the principal caregiver - the mother figure - that parental protection is facilitated" (Ainsworth, Blehar, Waters & Wall, 1978, p. 6).

Bowlby conceptualizes attachment as a "goal-corrected control

system", wherein behaviors are activated in order to achieve a set-goal. The set-goal for the infant is "felt security". While feelings of security and actual conditions of safety are likely to occur together, it is the infant's subjective experience of security that motivates the attachment behavioral system. Therefore, "the mere knowledge that an attachment figure is available and responsive provides a strong and pervasive feeling of security and so encourages the person to value and continue the relationship" (Bowlby, 1982a, p. 668).

Operating at the same time in the child are systems mediating exploratory and stimulation-seeking behaviors. Therefore, the child's behavior can be seen as negotiating a balance between these two antithetical behavioral systems. For example, the child will be most likely to venture away from the attachment figure in exploratory behavior under conditions of felt security.

Ainsworth has developed a naturalistic laboratory procedure known as the Strange Situation for assessing the nature of the infant's attachment to the attachment figure (see Ainsworth et al., 1978, for an overview). This procedure consists of a standard series of eight episodes in which the infant is observed in an unfamiliar playroom both with and without the attachment figure (usually the mother). Ainsworth found that infants varied in the nature of their response to the mother during reunion after periods of separation. Using this procedure, infants can be classified into attachment groups primarily according to their reunion behaviors (e.g. in what way the infant approaches the mother for comfort, and whether he or she is able to return to autonomous play). Ainsworth defined three groups: securely

attached infants (group B), insecurely attached anxious-avoidant infants (group A), and insecurely attached anxious-resistant infants (group C). Group B infants responded to the stress of separation with heightened amounts of attachment behavior on reunion, i.e. increased efforts to gain and to maintain proximity and contact with the mother, with little or no avoidant or resistant behavior. Heightened proximity-seeking behavior is the predicted response of the attachment system to the stress of brief separations, therefore Group B infants were described as securely attached. Group A infants, in contrast, showed little or no contact or proximity-seeking behaviors on reunion, instead actively avoiding the mother. Their reunion behaviors were therefore described as insecurely attached anxious-avoidant. Group C infants, like Group B infants, sought proximity and contact with the mother, but they displayed angry and resistant behaviors simultaneously. Their reunion behaviors were therefore described as insecurely attached anxious-resistant, or anxious-ambivalent. Anxious-avoidant and anxious-resistant reunion behaviors were interpreted by Ainsworth as distortions of the optimal functioning of the attachment system.

Bretherton (1985), in her comprehensive review of attachment theory, points out that "the relative safety or danger of a situation and an attachment figure's availability and responsiveness are, according to Bowlby (1969/1982b), not appraised completely afresh every time". The child develops increasingly complex "internal working models" (Bowlby, 1982b; Main, Kaplan & Cassidy, 1985) of the attachment figure (i.e. expectations about the attachment figure's availability) which are used in appraising and guiding behavior in new

situations. In the Strange Situation, the child is trying to negotiate an anxiety-arousing, emotionally stressful situation: separation from the attachment figure. How smoothly or stressfully the child negotiates reunion with the attachment figure is influenced by the child's internal working model of the attachment relationship. This internal working model has grown out of the history of the attachment figure-child interactions (i.e. the child's actions and the outcome of those actions) around his security-related needs. For example, if the child's efforts to regain physical and emotional proximity to the attachment figure during times of distress are repeatedly successful, the child will form expectations about the attachment figure as a resource for alleviating his emotional distress, which in turn influence his behavior. In contrast, if the child repeatedly experiences the attachment figure as an unpredictable or unavailable resource for meeting his security-related needs, he will form expectations about her unavailability or unpredictability which will differently influence his attachment behaviors.

Internal working models and behavior form a reciprocal relationship. That is, the child who regards the attachment figure as emotionally available will be more likely to successfully seek the attachment figure's support as needs arise. And the successful outcomes of the child's attempts to gain the attachment figure's emotional support will further reinforce the child's internal working model of the attachment figure as an available resource. This same reciprocal relationship between internal working models and attachment behavior can be described for anxiously attached children. Thus the child's actions on the attachment figure, and the attachment figure's

responsivity to the child's bids for emotional support, provide the interactive context within which internal working models are formed.

## Internal Working Models

The concept of internal working models (as described by Bowlby [1969/1982b] and later expanded by Bretherton [1987] and Main et al. [1985]) is supported by the work of developmental psychologists who have examined how small children represent past experiences. These examinations of children's play or verbal narratives suggest that children form generalized representations of repeated experiences which, once constructed, "can be used to predict future events, to guide decision making, and to infer unstated components of verbal narrative" (Bretherton, 1985, p. 32). These generalized event schemas (Nelson & Gruendel, 1981) or scripts (Schank & Abelson, 1977) are proposed to be the basic units of mental representations. They describe an event in general form by generalizing across repeated experiences rather than by recalling the details of a specific episode (unless the event has been an extraordinary one). For example, a three year old child, having had the repeated experience of "having dinner", can represent that experience through play (Bretherton, 1984) or story-telling (Nelson & Gruendel, 1981). This representation will be in a generalized form, preserving the temporo-causal relations between actors, recipients, objects and location common to most of his or her "having dinner experiences", but will most often not be a recreation of a specific dinnertime experience. Generalized event schemas guide the child's interpretation of experience and are modified and updated according to new experience. While these theorists tend to talk about cognitive models of experience, Bretherton points out that

representations of experience most likely contain both cognitive and affective components (Bretherton, 1985).

Internal working models of attachment relationships, as previously described, are made up of the notions and expectations that the child forms about his relationship with the attachment figure as a result of his repeated experiences with that figure around security-related needs. Stern (1985) expands on this idea in his description of "Representations of Interactions which have been Generalized", or RIGs. Stern argues that internal working models of attachment relationships are just one group of the infant's many different RIGs. "RIGs embody expectations about any and all interactions that can result in mutually created alterations in self-experience, such as arousal, affect, mastery, physiological state, state of consciousness, and curiosity, and not just those related to attachment." (p 115)

Stern, in agreement with Bretherton's view of internal working models, states that RIGs are not just a cognitive representation of the actions and action outcomes experienced in interpersonal interactions, but that they also represent the sensations and affects of being within that relationship. Repeated experiences - involving sensory, affective and cognitive components - are "averaged" and represented preverbally in earliest infancy and later verbally as symbolic thought emerges. Stern cites an experiment by Strauss (1979) as evidence that 10-month-old infants are able to "abstract, average, and represent information preverbally". Strauss showed infants a series of schematic face drawings that differed in the size and spacing of their internal features. The infants were then able to discriminate from among a new set of face drawings which drawing best

represented the series previously shown. The selected face, which had not been previously seen, was an averaged composite of all of the faces previously shown.

Both the attachment theorists and Stern speak about the stability of internal working models. As Stern points out, "the more past experience there is, the less relative impact for change any single episode will have. History builds up inertia." (p. 113). Main, Kaplan and Cassidy (1985) argue that the infant plays an active role in perpetuating existing internal working models. They explain that "rules for the direction of attention and behavior serve actively and repeatedly to restrict and perhaps to distort the types of information that may be made available, either through memory or through attention to the immediate environment" (p. 94).

According to attachment theorists, only with the onset of formal operations would the child, and later the adult, be capable of reflecting on his or her subjective view of relationships in order to significantly alter existing internal working models.

The concept of internal working models is of course related to long-standing theoretical ideas about mental representations and libidinal object constancy, but there are also essential differences. While traditional theory has proposed that in the establishment of object constancy the toddler forms mental representations of individuals (e.g. Mahler, Pine & Bergman, 1975; Fraiberg, 1969), theories of internal working models emphasize that it is the relationship within which individuals are experienced (Stern, 1985; Main, Kaplan & Cassidy, 1985) that is internalized. Traditionally, the "stability" of the image of the mother has been described in a

structural language. If the child's image of the mother is better "delineated" or "integrated" or "whole", he will be capable of more mature levels of ego functioning. In contrast, as theory has evolved to consider the possibility of internal working models of relationships, the "stability" of the image of the mother can be thought of as referring to the nature of the child's experience of the mother within their relationship (her "stability" in an interpersonal sense). The dynamic qualities of this relationship which have supported the child's explorations in the mother's presence can be thought of as influencing the child's behavior through internal working models in her absence. Attachment theory in particular describes behavior in the context of the relationship within which it occurs and in the context of the representations of that relationship which the child forms.

## Empirical Literature

### Antecedents of Attachment Classification

Clinical experience and theory lead psychoanalytic thinkers to believe that the quality of the infant's early experiences with the mother will influence the nature of his developing mental representations of her and the nature of his attachment to her. Empirical investigations of attachment have identified some of the aspects of the early mother-infant relationship which seem to contribute to the security of the attachment bond.

Ainsworth conducted longitudinal observations of 26 middle-class mothers and infants in their homes for the purpose of tracing the

development of attachment behaviors during the first year, and to identify those factors which contribute to individual differences in the development of the attachment bond. Data were gathered during four-hour home visits every three weeks from the time that the babies were 3 to 54 weeks old. Detailed written narrative accounts of all mother and infant behaviors and interactions were recorded during these observations. In addition, everyday situations in which attachment behavior was likely to be activated (e.g. "baby is picked up", "face-to-face encounters", or "person leaves the room") were identified before data collection, and in each of these situations the behavior of both partners was coded. The occurrence of several infant behaviors (such as crying and locomotive approach behaviors), and several maternal behaviors (e.g. maternal commands and maternal behaviors in the feeding situation), were also coded (Ainsworth, 1979). Ainsworth and her colleagues found that a mother's sensitivity to her infant's signals during the first three months predicted the security of the child's attachment to the mother at twelve months (Ainsworth et al., 1978; Ainsworth, 1979). (Of the 26 original dyads, 23 were seen in the Strange Situation: 13 were classified in group B, 6 in group A, and 4 in group C.) Specifically, mothers of infants who were later identified as securely attached were more responsive to their infant's crying, their face-to-face interaction was characterized by contingent pacing rather than by a routine rhythm, and they geared their behavior in the feeding situation more closely to the baby's cues than mothers from Group A or Group C. In addition, mothers of B babies spent significantly more of their "'holding time' in tender, careful holding than did A and C mothers, and spent less

time in inept holding." (Ainsworth, 1979, p. 34) In contrast, mothers of A infants more frequently "admitted and/or displayed aversion to close bodily contact" with their infants than did mothers of B or C babies. Main (1977) further found that mothers of A babies "displayed a remarkable lack of emotional (facial) expression when watching or in interaction with their babies" (Ainsworth, 1979, p. 35). Other researchers have provided corroborating evidence that maternal warmth and sensitivity during the first six months predicts secure attachment classification in the Strange Situation at twelve months (Maslin, 1983; Belsky, Rovine & Taylor, 1984).

The differences identified between the securely attached and insecurely attached groups suggest that the mother's sensitivity to her own infant's cues (not discrete behaviors) and her expression of emotional availability (e.g. through bodily contact and facial expression) help to provide the context within which secure attachment can become established.

Not until the fourth quarter of the first year were discrete infant behaviors predictive of security of attachment in the Strange Situation. For example, infants who were later classified as securely attached in the Strange Situation (Group B infants) cried less, responded more positively to being held, and more often greeted mother positively after an absence during the fourth quarter of the first year than either Group A or Group C infants. In addition, in face-to-face interaction, they were more likely to respond to mother's intiation of interaction, and less frequently terminated an interaction. Conversely, anxious-avoidant infants (Group A) and anxious-resistant infants (Group C) cried more frequently, showed more

separation distress at home, and responded less positively to close bodily contact than did Group B babies during the fourth quarter of the first year. Group A infants also displayed more anger at home than did either B or C infants. However, none of these infant behaviors during the first three months of life predicted security of attachment at 12 months.

Ainsworth's study did not attempt to account for temperamental factors; therefore, the possible influence of constitutional characteristics on interactive patterns and later attachment classification cannot be fully assessed. However, Ainsworth points out that while the maternal behaviors examined were quite stable throughout the first year, "infant behaviors showed little stability until the second half of the first year" (p. 17). As mentioned, the infant behaviors assessed during the first three months showed no power to predict security of attachment at 12 months, and in fact none of the infant behaviors examined showed significant tendencies to persist from the earliest months into the later months of the first year. That is to say, infants did not settle into patterns of behavior that persisted across time until the second half of the first year. Ainsworth argues that "the fact that the mother's [internal working] model antedates the baby's capacity for inner representation tends to give her behavior a degree of stability during the early months that his behavior seems to lack" (1979, p. 46). In other words, the mother's internal working models of attachment relationships (formed during her own life) are already well developed and therefore exerting an influence on her interactions with her infant during the earliest months. In contrast, the infant's internal working models of the

attachment relationship are not well formed until the second half of the first year and therefore do not serve to organize behavior into identifiable patterns until then. In sum, the instability of infant behaviors during the first half of the first year argues against attributing differences in the Strange Situation solely to temperamental factors. (See Sroufe [1985] for a detailed discussion of attachment classification and infant temperament.)

Lamb, Thompson, Gardner, Charnov and Estes (1984) offer several important criticisms of Ainsworth's methodology and of the generalizability of her findings. Conventional measures of interobserver reliability were not obtained during home observations, leaving unchecked the possibility of observer bias in data collection. In addition, the small sample size, and the post hoc nature of the findings (e.g. attachment classifications for the Strange Situation were derived by clustering infants according to similarities in the reunion and separation behaviors that they demonstrated in the Strange Situation), make this study a "hypothesis-generating pilot study - not a hypothesis-testing investigation" (p. 131).

Despite these criticisms, Ainsworth's overall findings have been well replicated in other samples (e.g. Belsky, Rovine, & Taylor, 1984 [sample size = 60]; Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985 [sample size = 49]; Maslin, 1983). However, as Lamb et al. (1984) point out, Ainsworth's classification system "best fits" a 12-month old, middle-class American sample. Samples drawn from different cultural (e.g. Sagi, Lamb, Lewkowicz, Shoham, Dvir, & Estes, 1985; Grossmann et al., 1985) or socio-economic (e.g. Vaughn, Egeland, Sroufe, & Waters, 1979) backgrounds reveal some differences (e.g. in

the proportion of toddlers falling into different attachment groups, or in the stability of attachment classification over time), introducing new questions and the possibility for a broader understanding of Ainsworth's initial findings.

Predicted Consequences for Subsequent Functioning

The hypothesis being proposed here is that when the infant's attachment bond to the mother is a secure one, the possibility for maintaining flexible and supportive connections with one another through the vicissitudes of the separation-individuation process is facilitated. Follow-up studies of toddlers and pre-schoolers previously seen during infancy in the Strange Situation examine aspects of the child's functioning which can be thought of as outgrowths of the more or less successful negotiation of these developmental tasks. For example, securely attached infants, when seen again one, two or five years later, are less dependent on adults (although they go to adults for assistance more freely when needed) (Matas, Arend & Sroufe, 1978; Sroufe, 1983), are more successful in negotiating peer relationships (Waters, Wippman & Sroufe, 1979), are more competent in problem-solving (Matas et al., 1978; Arend, Gove & Sroufe, 1979), are more motivated to spontaneously perform according to their full potential (Belsky, Garduque & Hrncir, 1984; Slade, 1987b), and more freely express a range of emotional experiences than insecurely attached children (Waters et al., 1979; Main, Kaplan & Cassidy, 1985; Grossmann, Grossmann & Schwan, in press). These are qualities thought of as indicative of mature ego functioning, reflecting both independence and successful object relationships. Those follow-up studies most relevant to the current discussion will

be reviewed here.

Based on the psychoanalytic proposition that the nature of the early mother-child relationship will influence the quality of the child's emerging mental representations of important others, Bell (1970) examined the relationship between security of attachment and the development of object and person permanence during the first year. Bell refers to Piaget's observation that the development of the concept of a permanent (out of view) object does not proceed at the same rate for all objects. Person permanence usually precedes object permanence because infants find people to be the most interesting objects of all. Piaget and Inhelder argue that the "interest" that the environment elicits in the child will have an impact on developing sensorimotor intelligence. Bell cites Inhelder's statement that "'the age at which the cognitive structures appear is relative to the environment, which can either provoke or impede their appearance'" (p. 292). Bell follows this reasoning to argue that individual differences in the rate at which person permanence is established in relationship to object permanence will be directly influenced by the nature of the child's attachment to the mother.

Bell tested 33 infants for level of object and person permanence three times between the ages of 8 1/2 and 11 months. Twenty-four infants showed "a preponderance toward significant discrepancies in favor of person permanence in the first three testing sessions" and were labelled the positive decalage group; 7 showed significant discrepancies in favor of object permanence and were labelled the negative decalage group; and 3 showed no significant discrepancies between object and person permanence. Infants were then classified for

security of attachment in the Strange Situation at 11 1/2 months. Bell hypothesized that the rate of development of person permanence would be positively influenced by secure attachment to the mother. Her findings strongly supported this hypothesis: 23 of the 24 securely attached babies exhibited a positive decalage and one showed no discrepancies; 4 of the 5 insecure-avoidant babies showed a negative decalage (one showed no discrepancies); and 3 of the 4 insecure-resistant babies showed negative decalage (with one showing no discrepancies). Bell concluded that "the quality of a baby's interaction with his mother is one of the crucial dimensions of 'environmental influence' to affect this type of sensorimotor development" (p. 310).

Addressing predictions about the influence of secure attachment on competence and mature ego functioning in toddlerhood, Matas, Arend and Sroufe (1978) observed 24-month-old toddlers, who had been classified for security of attachment at 12 and/or 18 months, as they worked on problem-solving tasks. They found that securely attached children were more confident in attempting solutions to the tasks, appearing "more enthusiastic, persistent, and cooperative". At the same time, the securely attached children sought help from their mothers more easily than did the anxious-avoidant children when unable to achieve a solution on their own. In addition, mothers of anxious-avoidant children showed little affective investment in their children's activities. Further, Arend, Gove and Sroufe (1979) followed 26 children from this same sample into their preschool years in order to demonstrate continuity in individual adaptation. They found that securely attached children were rated by preschool teachers

as significantly higher on measures of ego-resiliency and curiosity at 4-5 years. Main (1973) similarly found that toddlers who had been identified as securely attached during infancy had longer attention spans during a free play session.

Many investigations into the relationship between security of attachment and symbolic play find that securely attached toddlers engage in more episodes or higher levels of pretend play than insecurely attached toddlers (Matas et al., 1978; Bretherton, Bates, Benigni, & Volterra, 1979). Belsky, Garduque and Hrncir (1984), looking at motivational aspects of play in one year olds (how closely the child's performance in free play approaches his full capacities), found that security of attachment seemed to affect the "capacity to deploy one's competencies more than it does cognitive competence per se and that securely attached infants are more able than their insecurely attached counterparts to apply themselves fully to their explorations" (p 416).

Slade (1987b) found that what Belsky et al. have called the "executive capacity" of secure infants clearly continues into toddlerhood. Slade examined the relationship between attachment and symbolic play throughout the toddler period (from 20 to 28 months). (This is the same sample being examined in the present study.) She found that secure and anxious-avoidant groups did not differ on measures of average performance. However, when highest level of symbolic play was examined, secure children spent significantly more time in the highest level of play at 26 and 28 months. In addition, Slade was the first investigator to consider what effect maternal involvement would have on the level of the child's play in light of

the nature of the individual attachment relationship. She found that maternal involvement (in contrast to the child playing alone) was associated with higher levels and longer episodes of play for all children. However, differences between the attachment groups emerged when the nature of the mother's participation was examined more closely. In the secure group, mother's active participation resulted in longer and more complex play episodes than when mother offered passive comments about the child's activities. In the insecure group, in contrast, the mother's greater involvement had no effect on the duration or level of the toddler's play. Slade suggests that in the securely attached dyad "interactive play provides a medium for the child's increased competency" and that the securely attached child's performance is "enhanced by the supports and structure of the social exchange" (p. 83). In the insecurely attached group, the social exchange did not seem to provide the same enhancement to the child's performance.

Slade's findings also showed that the nature of maternal involvement differed between the two groups. During the time that mothers were engaged with the examiner in conversation, mothers of securely attached children maintained a greater amount of contact with their children than did mothers of insecurely attached children. Further, mothers of secure children more frequently chose to be active participants in their toddlers' play, whereas mothers of insecure-avoidant children were more likely to adopt a passive role when interacting with their toddlers. Taken together, Belsky et al.'s and Slade's findings support the assertion that security of attachment contributes to the confidence with which the child employs his full

capacities, and how effectively he utilizes his interpersonal environment for support.

As Waters, Wippman and Sroufe (1979) point out, the role of positive affect is central to Bowlby's conceptualization of the attachment construct as a positive emotional bond. However, few studies have examined whether securely attached and insecurely attached children differ in their expression of positive affect. By definition, insecurely attached infants express less positive affect than do securely attached infants during reunion in the Strange Situation following the stress of separation. However, Waters et al. wanted to know whether securely attached children also express more positive affect in relationship to the attachment figure in other situations and at subsequent points in development. They tested two predictions: the first, that security of attachment would be associated with the exchange of positive affect between mother and child in the absence of stress. They examined the 3-minute period prior to separation in the Strange Situation (before any stressors have been introduced) for the presence or absence of smiling, looking, vocalizing, showing or giving toys to the mother. Of these discrete behaviors, smiling significantly discriminated among the groups (18 of the 19 secure infants spontaneously smiled, 5 of the 12 avoidant infants, and 2 of the 5 resistant infants). More strikingly, only securely attached infants exhibited combinations of these behaviors: i.e. smiling while showing a toy to mother, or smiling and vocalizing while showing a toy to mother. They also tested a second prediction: that security of attachment would be associated with free affective expression at a later point in development. They found that in a free

play situation at 24-months measures of affective sharing were significantly higher in the securely attached group than in the insecurely attached group.

Main (1973) also found that securely-attached children showed more positive affect during free play and manifested more of a "game-like spirit" on structured tasks in toddlerhood. Waters et al.'s and Main's findings support the proposition that security of attachment is related to the free expression of positive affects across contexts and at different points in development. However, the findings of Main, Kaplan and Cassidy (1985) go further to demonstrate that securely attached children have access to (and are less disrupted by) a broader range of affective expression - positive and negative - than insecurely attached children.

Main, Kaplan and Cassidy (1985) did a follow-up study of six-year-old children (and their parents) who had been seen in the Strange Situation at 12-18 months. They compared early measures of security of attachment to each parent with the child's overall functioning, behaviors in an unstructured reunion setting, and aspects of the child's and the parents' internal working models of attachment these five years later. The insights that they offer into parents' internal working models of attachment deepen our thinking about how parents' representations of their own experiences influence the development of their children's mental representations. However, these findings are beyond the scope of this paper. Of particular relevance here is their investigation of six-year-olds' internal working models of attachment.

Main et al. point out that in each of three systems used for classification of security of attachment (of which the Strange

Situation is the most widely used), the pattern of behaviors characterizing secure dyads cannot be identified as following a set pattern of rules. Rather secure dyads are characterized by "ease of physical and emotional access between the partners and corresponding ease of movement among the salient features of the environment" (p. 74). In contrast, behavior patterns characteristic of the insecure groups are far more rigidly defined. Insecure-avoidant infants attend to things in the environment while actively avoiding the attachment figure, and insecure-resistant infants often seem distressed and fearful of the environment, frequently directing themselves toward the attachment figure. Main et al. understand the internal working models underlying these different patterns of behavior as "a set of conscious and/or unconscious rules for the organization of information relevant to attachment and for obtaining or limiting access to that information ... [and to associated] feelings and ideation" (p. 92). Securely attached children seem to be the least 'rule-bound' in dealing with attachment-related thoughts and feelings.

The hypotheses they tested were derived from this view of internal working models. Of the seven hypotheses tested, the results of three are particularly relevant here. First, speech transcripts from the reunion episode at age six were scored by a psycholinguistics student for fluency and balance of dyadic discourse. The dialogues of securely attached dyads were characterized by fluidity (partners responded to one another directly with little pause), dyadic balance (neither partner exclusively led or followed in the conversation), and by a broad range of foci. Insecurely attached dyads were either "restricted or dysfluent in discourse". In other words, speech

patterns in secure dyads at age six were far less 'rule-bound' than speech patterns in insecure dyads. Second, the child's emotional openness when discussing parent-child separations was assessed. High ratings for emotional openness were characterized by an easy balance between self-exposure and self-containment. Securely attached children more often received high ratings for emotional openness. For example, these children described feelings of sadness, loneliness, fearfulness or anger, and offered reasons for these emotions. Insecurely attached children tended to respond with silence or an overtly depressed manner; some responded with irrational responses or became disorganized. Third, the child's ability to respond constructively to the question "What would a child do?" when faced with a two-week separation from his or her parents was coded from transcripts. There again was a strong relationship between security of attachment to the mother and the child's ability to imagine dealing constructively with an impending separation. Scenarios offered by securely attached children either showed active efforts to prevent the separation in order to remain with the parent, or directly expressed disappointment or anger to the parent. In contrast, insecurely attached children were more likely to choose a course of action which would decrease the accessibility of the attachment figure (e.g. killing the parent or locking oneself away).

Main et al.'s findings demonstrate that the flexible pattern of interaction which characterizes secure dyads and the 'rule-bound' pattern which characterizes insecure dyads can be seen outside of the Strange Situation. More specifically, they propose that the "rules" which guide and inhibit access to affects and cognitions and influence

behavior are largely unconscious and consequently quite stable. The behavior patterns influenced by such internal "rules" consequently are manifest across settings, through different behavioral modes (e.g. speech vs. locomotion) and at different ages (see Bowlby, 1980 for further discussion of the "defensive exclusion" of cognitions and memories from consciousness).

Bretherton (1987) reviews a number of recent studies which examine communication styles in securely attached and insecurely attached dyads which are consistent with Main et al.'s findings on dyadic discourse. For example, Grossmann, Grossmann and Schwan (in press) examined patterns of communication during the Strange Situation. They found that securely attached infants were more likely to engage in "direct communication" with mother (characterized by eye-contact, facial expression, vocalization, showing and giving of objects) than insecurely attached dyads, both during low stress and high stress episodes (i.e. episodes preceding and following separation). Securely attached infants went freely to mother when their mood was either positive or negative, whereas those anxious-avoidant infants who did engage in some direct communication with mother only did so when they were not overtly distressed.

What begins to emerge from the findings of Waters et al., Main et al., and Grossmann et al., is that attachment groups differ in the freedom with which they access and express different emotional experiences, and that they exhibit different patterns of communication. Several observations have been made about the "free communication patterns" characteristic of mothers of securely attached infants: 1) these mothers tend not to turn away from their infant's

expression of negative affect; 2) they themselves express a broad range of positive affects; and 3) they tend to respond sensitively to the range of their infant's cues rather than (according to their own needs) to selectively respond to some cues and ignore others ("defensive selection"). These mothers communicate a willingness to be available to their infants when the infant needs them, whatever the infant's emotional state. The way in which the mother is able to receive and respond to her infant's communications will influence the pattern of emotional expression established within the dyad. Bretherton (1987) states that "[t]he manner in which parents do or do not respond to their infants' communications modifies the patterning of emotional expressiveness in the developing relationship, and hence its quality. In particular, easy flow of communication between partners seems to require that the parents not selectively discount signals of distress."

Critics of the attachment construct have pointed to the fact that specific attachment behaviors are not stable over time and across contexts as evidence of the instability of the attachment construct (e.g. Coates, Anderson & Hartup, 1972). Sroufe and Waters (1977) have responded to these criticisms by arguing that attachment should be understood as an organizational construct rather than a trait construct. They point out that different behaviors can serve the same purpose (e.g. crying and active searching behaviors can both serve the purpose of proximity-seeking). Similarly, the same behaviors in different contexts can have different meanings (e.g. locomotive behavior toward the mother following separation may be in the service of the attachment system's set goal of gaining proximity, whereas

locomotion toward the mother who is holding a new toy in a play situation may be in the service of exploration). It is necessary to consider the context of behaviors (both situationally and developmentally) in order to understand their meaning. They state that attachment:

> is not a set of behaviors that are constantly and uniformly operative (in the manner of a temperamental characteristic) or even operative with a fixed probability of occurrence ... Rather attachment refers to an affective tie between infant and caregiver and to a behavioral system, flexibly operating in terms of set goals, mediated by feeling, and in interaction with other behavioral systems. In this view, behavior is predictably influenced by context rather than constant across situations. (p. 1185)

The above studies show that stability of attachment can be demonstrated across time when the organization of behaviors relevant to a given context and developmental phase is considered.

## Summary and Hypotheses

Longitudinal data gathered during the first year of life support the premise that attachment behavior in the Strange Situation reflects something about the history of the mother's sensitivity to the infant's cues during the first year of life. Further, it seems reasonable to infer that in looking at attachment behavior one is learning something about the child's internal working models of his relationship with the mother. Follow-up studies support the validity of the attachment construct by demonstrating that security of attachment as assessed in the Strange Situation is predictive of patterns of behavior and interaction in other contexts and at later ages.

The proposition being put forth here is that the internal working models of attachment which can be seen to be influencing the infant's

behavior in the Strange Situation at 18 months are individual characteristics which influence the separation-individuation process and result in, as demonstrated, qualitative differences in development. One of the most difficult aspects of the separation-individuation process is the experienced "possibility" of losing the mother entirely as one moves away from her. If one's internal working model of the attachment figure is of a figure who is unreliably available to the child when the child needs her, then separation can only proceed with feelings of great risk. The child can respond in a variety of ways to these feelings of great risk, but the solution he adopts would seem to move in one of two directions. Either the child will resist separation from the mother, or the child will move away from the mother as though untroubled by their separateness, but also markedly disconnected from her. Feelings of separateness and connection, fearfulness and brave enthusiasm, sadness and comfort are natural alternating and co-existing feelings in the separation-individuation process. The 'rigid rules' within the internal working models of the insecure toddler do not permit him free access to all of these feelings. His behavior can be seen as his solution to the dilemmas he experiences internally and interpersonally.

The present study does not look at the child's performance of a task (e.g. the quality or level of his play) but rather at the way in which the dyad goes about negotiating the situation in which they find themselves. In keeping with an understanding of attachment as an organizational construct, organizing different behaviors in different contexts toward set goals, it is necessary to understand the nature of the situation created for the dyad in the present paradigm in order to

predict what their pattern of behavior might be like. The present setting is a very familiar one for mother and child. At this observation, mother and toddler have previously visited this same room, with the same experimenter, with the same set of toys, five times. During each visit the structure of the play sessions occurs in exactly the same way. Therefore, there is nothing novel or inherently anxiety-provoking about the present setting. What is true of this setting is that limitations have been placed on the mother's availability, requiring the toddler to play autonomously in whatever way he is able. But the balance struck between separateness and connectedness, autonomy and dependence, is one created by mother and child. It is argued, therefore, that by observing the toddler's efforts to play independently in the presence of the mother, one is observing how this dyad negotiates the process of separation-individuation. Maternal referencing is suggested to be a way in which the toddler enables himself to play independently from the mother. As will be described later, maternal referencing is defined as all instances when the child looks at or speaks to the mother, from a distance or up close. He probably references her for many different reasons: to reassure himself that she is still there at moments of felt insecurity, to assist him when he needs her help, and to share with her about his activities. Since internal working models are presumed to influence the separation-individuation process, and maternal referencing is argued to be a feature of the child's negotiation of separation, then differences in internal working models should be observed in the pattern of the toddler's referencing of the mother.

It is predicted that in securely attached toddlers, the child's referencing pattern will reflect his expectation (based on internal working models) that mother is available. The mother's responsiveness to her child's needs, which has presumably characterized their early interactions, should also be observed in the present paradigm. It is similarly predicted that the referencing patterns demonstrated by insecurely attached toddlers will reflect their expectations (based on different internal working models) that mother is an unpredictable or unavailable resource. Further, the mothers in this group, relative to the mothers of the securely attached toddlers, should appear less responsive to their child's needs, as has presumably characterized their earlier interactions.

The following hypotheses will be tested:

Hypothesis #1:

a) Securely attached toddlers will demonstrate the most flexible patterns of referencing, characterized by verbal and non-verbal referencing from variable distances. Referencing will also be interspersed with periods of autonomous exploration without referencing.

It is anticipated that securely attached toddlers will go freely to the mother both when emotional needs arise (e.g. as they initially settle into the room) and with the wish to communicate about their play. However, they will be able to adapt to the limitations of the mother's availability and to turn instead to inner resources. Brief and variable contacts will be sufficient to 'refuel' the child and to enable him to return again to playing alone. This group will display a

'moderate' amount of referencing.

b) Insecurely attached toddlers, in contrast, either:

i) will be unable to significantly lessen their close contact with the mother in order to play alone, or

ii) will have significantly less referencing throughout, appearing "uninvolved" with mother.

It is hypothesized that a subgroup of insecurely attached children will cling to the mother because they are unable to feel confident in her availability once they have moved away from her. They are insecure in their expectation that mother will be responsive to their bids for her attention, therefore they will most persistently display the forms of referencing which maintain the greatest proximity to and involvement with the mother. They will display the highest amount of referencing. It is predicted that a second subgroup, having little expectation of the mother's availability, will make little attempt to maintain (or to create) a communicative tie. This group will reference the least, and when referencing does occur, they will more often choose non-verbal, distant forms of referencing that do not communicate an expectation that the mother will respond.

Hypothesis #2:

a) Mothers of securely attached toddlers will be more responsive to their toddlers' bids for their attention than are mothers of insecurely attached toddlers.

It is assumed that these mothers, relative to mothers in the

insecure group, have a history of sensitivity to their infants' cues and responsivity to their infants' security-related needs. This responsivity should be reflected in the readiness with which they respond to their toddlers' bids for their attention, and in the high degree of participation demonstrated by their mode of response.

b) Mothers of insecurely attached toddlers will be less responsive to their toddlers' bids for their attention than are mothers of securely attached toddlers.

As a group, these mothers will more often be unresponsive or slow to respond to their child's bids for attention, and will be less participatory in their mode of response.

# CHAPTER TWO

## Method

### Subjects

The subjects for the present study were 16 mother-child pairs, previously selected and videotaped by Dr. Arietta Slade. All subjects were from middle-class families in which fathers worked and mothers served as primary caregivers. Fifteen pairs were white and one was black. Eleven children were boys and five were girls. No restrictions were made as to birth order, therefore the sample includes both first and second born children (10 first born and 6 second born). All infants were full-term, and medical and developmental histories were normal. Dr. Slade recruited subjects through birth records of a hospital in a major urban medical center in the Northeast. All infants met a minimum criterion for level of intellectual functioning at the time of selection using the Bayley Scales of Infant Development. Mean level of intellectual functioning for secure and insecure groups did not differ significantly. Mean Mental Development Index for the sample was 114; securely attached group = 114 (S.E.M. = 4.40), insecurely attached group = 118 (S.E.M. = 8.32) (Slade, 1987b). All 16 pairs were observed in the Strange Situation paradigm between 16.5 and 18 months of age, and were classified according to Ainsworth's three attachment groups. (The author was blind to attachment status until the data analysis stage.) Slade scored all Strange Situation sessions for attachment status. Eight sessions were recoded by experts in the scoring of the Strange Situation, and 100% agreement on assignment to categories A, B or C was obtained. (See Slade [1987b] for further details about sample selection and classification into attachment

groups.) More than the final 16 dyads were initially seen in the Strange Situation (32 dyads), but securely attached children were randomly dropped from the study in order to obtain an equal number of securely attached and insecurely attached infants. Of the final sample of 16 dyads, eight children were classified as securely attached and eight were classified as insecurely attached (of the insecurely attached group 7 were classified as anxious-avoidant and 1 was classified as anxious-resistant). The proportion of secure and insecure children within the initial screening group of 32 dyads was roughly consistent with the proportion of these groupings found in other middle-class samples.

The dyads were then videotaped in 30-minute play sessions at bimonthly intervals from 18 to 30 months. Each play session took place in a playroom approximately 16 x 20 feet, furnished with a couch, two chairs, and a standard array of toys. The videotape camera was operated behind a one-way mirror. Each 30-minute play session consisted of 20 minutes in which the child played alone while the mother conversed with the experimenter (experimenter present segment), and 10 minutes in which the mother and child played together alone in the room (experimenter absent segment).

During the experimenter present segment, the toddler was encouraged to play by himself (the toys were spread out in the middle of the room) while the mother and the examiner, seated several feet from the play area, talked together (see diagram in Appendix A). The mother was instructed to encourage the child to play alone as much as possible while the examiner engaged the mother in conversation about aspects of the child's current development and activities at home. All

toddlers were able to cooperate with the task to some degree, although the children seemed to vary as to how frequently or actively they tried to involve the mother in their play. Similarly, mothers seemed to vary as to how attentive they were to their child's activities and in how responsive they were to their child's bids for attention.

## Procedure

### 1. Data Preparation

For the present study, data were gathered from the 28-month "experimenter present" play session. Twenty-eight months was selected because it is an age at which toddlers are able to play for brief or sustained periods at a distance from the mother. In addition, it is an age at which object constancy is becoming more firmly established (Fraiberg, 1969; Mahler et al., 1975). (The 30-month play session is interrupted by a structured elicitation procedure, therefore was not as well suited to the present study.) Due to poor sound quality on the videotapes of the 28-month play session for two subjects, the 26-month play sessions for these subjects were used. These play sessions are identical in structure to the 28-month play session. The first 15 minutes of the experimenter present segment was studied. (Timing was begun 20 seconds after all 3 persons - experimenter, mother and child - entered the room in order to allow the mother and experimenter to be seated.) The 15 minute segment was divided into 45 20-second intervals. Each 20-second interval received one rating for each of the measures to be described below. Coding sheets were prepared for each of the 16 dyads by indicating the exact beginning and ending point for each 20-second interval within the 15 minute period (see Appendix B for a sample coding sheet).

2. Scoring

A coding system has been devised by the author in collaboration with Dr. Slade and two other doctoral students, Mary Reeves and Sandra Lazdins. The two principal measures within the coding system measure 1) the Child's location and mode of referencing of the mother and 2) the Mother's response to referencing, i.e. to her child's bids for her attention. Referencing is defined as the child's speaking to, looking at, or touching the mother. The hypotheses formulated at the outset of this study are most directly addressed by these two principal measures, "Child's location and mode of referencing" and "Mother's response to referencing", therefore a brief description of these will be offered here. (See Coding Manual in Appendix C for a detailed description of all measures and scoring criteria.)

Child's location and mode of referencing is a categorical measure of the degree of the child's involvement with the mother during referencing. The rating is two-dimensional: 1) how far away the child is from the mother when referencing occurs, and 2) whether the child references the mother verbally or non-verbally (i.e. by looking at or touching the mother). Both dimensions are included in each category (except in those categories which describe no referencing of the mother). The first dimension, the child's physical relationship to the mother at the time of referencing, is divided into three possibilities: close (1) is within arm's reach of the mother; mid-distance (2) is beyond arm's reach but not as far as the periphery of the room; and far-distance (3) is the periphery of the room (see Appendix A). The second dimension, the child's mode of referencing, is divided into two possibilities: referencing by speaking to the mother

(S); and referencing by not speaking (N), but rather by looking at or touching the mother.

By considering all possible combinations of these two dimensions one can see that there are six categories of referencing (the number in the first column indicates the child's location [1, 2 or 3] and the letter in the second column indicates the child's mode of referencing [S or N]). Two additional categories describe those instances when no referencing of the mother occurs: "EX" is scored when the child references the examiner to the exclusion of any referencing of the mother; and "00" is scored when no referencing occurs during the 20-second interval, i.e. the child has remained solitary (see Table 1).

Table 1

Child's location and mode of referencing

| |
|---|
| 1S = Close, and speaking to mother |
| 1N = Close, and not speaking but looking at or touching mother |
| 2S = Mid-distance, and speaking to mother |
| 2N = Mid-distance, and not speaking but looking at mother |
| 3S = Far-distance, and speaking to mother |
| 3N = Far-distance, and not speaking but looking at mother |
| EX = References experimenter to exclusion of mother |
| 00 = No referencing |

The categories in this scale (as listed in Table 1) range from the most involvement to the least involvement with the mother. The

closer the physical distance, the more immediate the involvement; similarly, verbal forms of referencing are a more active form of involvement than visual forms of referencing. Therefore, close and speaking, or "1S", is the most proximal and actively involved form of referencing, and far and not speaking, or "3N", is the least immediately involved form of referencing. Referencing only the examiner ("EX") and no referencing ("00") of course represent the least involvement that the child might have with the mother during his play.

Only one score is given per 20-second interval. Therefore, if two or more forms of referencing occur during one interval, the code which reflects the greatest degree of involvement with the mother (i.e. the code which is highest in Table 1) will be given. For example, if the child speaks to the mother from far away, but then walks up to her and places a toy in her lap without speaking to her within the same 20-second interval, the latter form of referencing will be scored.

It has been said that the points along this scale reflect the "degree of the child's involvement with the mother during referencing". It is important to note that involvement is defined here according to proximity and overt activity (speaking or looking). The scale quantifies the child's observable behavior, that is his negotiation of the physical space between himself and mother.

Mother's response to referencing is also a categorical measure of the nature of the mother's responsiveness to and involvement with the child in response to the child's bids for her attention. The five points along this scale range from active participation in the child's play, to supportive acknowledgement of the child's activities, to no

response.

As listed in Table 2, the highest category on this measure describes that the mother has responded to the child's bid by "participating" ("P") in some way in the child's play (e.g. by wrapping a blanket around a doll which the child has brought to the mother, or by responding to the child's saying "Daddy" into the toy telephone with "Oh, are you calling daddy?"). The second category is "slow participation" ("SP") which is defined in the same way as "P", however the mother has responded only after the child has bid for her attention repeatedly (i.e. more than twice). "Acknowledgement" ("A"), is given when the mother acknowledges the child's play or behavior verbally, or accepts something from the child, but the mother has not become a participant in the child's play. (For example, child has put sunglasses on and mother exclaims "Oh, you look beautiful!".) "Slow acknowledgment" ("SA") again is scored when the mother acknowledges the child only after he or she has bid for the mother's attention more than twice. The last category is assigned when "no response" ("0") has been made to the child during the 20-second interval. (This measure has been expanded from Slade's [1987b] measure of maternal involvement.)

Again, since only one rating along this scale may be given per 20-second interval, if more than one form of response occurs, the code which reflects the greatest degree of involvement and responsiveness (i.e. the code which is highest in Table 2) will be given.

One additional, separate score for the child, and three additional, separate scores for the mother were developed in order to capture those verbal behaviors which were neither referencing nor

Table 2

Mother's form of response

| | |
|---|---|
| P | = Participation in child's play |
| SP | = Slow participation: mother responds only after 2 or more bids for her attention |
| A | = Acknowledgement of child's activity |
| SA | = Slow acknowledgement: mother responds only after 2 or more bids for her attention |
| 0 | = No response |

response to referencing. These were: for the child: Speaking to Self ("SS"); and for the mother: Initiation of a play bout ("I"); Extraneous initiated comments ("E"); and Prohibitive comments ("Pr"). The child's "speaking to self" (defined as words or sound effects indicating that the child is talking aloud about his thoughts or his play) is clearly not a form of referencing and is therefore scored separately. Each of the three categories of mother-initiated comments (i.e. "I", "E", and "Pr") are clearly not responses to the child's referencing and are therefore scored separately. Any of these additional behaviors may occur during a 20-second interval and would consequently be scored in addition to the principal score given to each member of the dyad.

3. Inter-rater Reliability:

Raters (LM, MR, and SL) were trained, the coding system was refined, and inter-rater reliability was achieved using transcripts of

30-month play sessions. Once reliability was achieved and the coding system was fully revised, 6 of the 16 28-month transcripts were again coded by two raters independently. (The two raters coded simultaneously and independent codes were reviewed and discrepancies were conferenced periodically during the coding sessions.) Reliability figures were computed using Cohen's kappa, a coefficient of agreement which corrects for chance agreement. The derived figure, "k", is "the proportion of agreement after chance agreement [has been] removed from consideration" (Cohen, 1960). For the "Child's location and mode of referencing", k ranged from .74 to .97, (with a mean of .84). For "Mother's form of response", k ranged from .44 to .96 (with a mean of .71). Agreement on both measures was highly significant.

# CHAPTER THREE

## Results

### Cluster Analysis of Insecure Group

It was hypothesized that two distinct referencing patterns would be seen within the Insecure group yielding two subgroups: a "detached" subgroup characterized by minimal referencing and greater distance from mother, and a "clinging" subgroup characterized by high amounts of referencing and close proximity to mother. A cluster analysis was carried out for the Insecure group in order to determine whether distinct subgroups could be identified. Three child variables were included in this analysis: C1 = percentage of child's referencing during the 15-minute time period (i.e. total # of 20-second intervals that contain child's referencing of any kind / total # intervals in time period); C2 = percentage of referencing which is verbal (i.e. total # intervals that contain child's verbal referencing / total # intervals that contain child's referencing of any kind); C3 = child's average distance from mother during referencing (i.e. sum of distance scores [1=close, 2=mid-distance, 3=far] for all intervals that contain child's referencing / total # intervals that contain child's referencing). By computing Z scores for individuals along each variable, two subgroups were identified. As shown in Table 3, the first subgroup, labelled "Insecure-low referencing", includes five dyads and is characterized by a relatively lower amount of referencing, a lower percentage of verbal referencing, and greater distance from mother during referencing. The "Insecure-high referencing" subgroup includes three dyads and is characterized by a

higher amount of referencing, a higher percentage of verbal referencing, and greater proximity to mother during referencing.[2]

Table 3

Cluster Analysis of Insecure Dyads

| | Variable | | |
|---|---|---|---|
| Subgroup | C1 | C2 | C3 |
| Insecure-low [a] | -.443 | -.484 | .570 |
| Insecure-high [b] | .739 | .806 | -.949 |

Note. The values represent Z scores.
[a] $n$ = 5
[b] $n$ = 3

Analysis of Child's Referencing and Maternal Response Variables Among Three Groups

A multivariate Analysis of Variance (MANOVA) comparing the Secure, Insecure-low, and Insecure-high groups was performed. Five variables were included in this analysis: the three child variables (C1, C2, and C3) and two maternal response variables. M1 = amount of mother's response to referencing relative to the total amount of

[2]A note of caution should be heeded in interpreting the significance of these subgroups. Subgroups identified by a cluster analytic procedure must be replicated in independent samples in order to determine whether they represent distinct subgroups of insecure toddlers, or whether the subgroupings are an artifact of the clustering procedure.

child's referencing (i.e. total # intervals that contain mother's response / total # intervals that contain child's referencing); and M2 = the average degree of involvement represented by the mother's mode of response throughout the time period. (Mother's response to referencing scores are rated from 1 to 4 [1=SA, 2=A, 3=SP, 4=P] with the higher score reflecting greater involvement. Sum of mother's involvement scores [1, 2, 3 or 4] are computed across intervals containing mother's response to referencing / total # intervals containing mother's response to referencing.) Mean values for each group on each of the five variables are shown in Table 4.

Significant overall differences were demonstrated among the three groups (Wilks multivariate test of significance, $p<.006$). Univariate F-tests were then performed in order to identify which of the five variables contributed to the significant differences between the groups. Significant group differences were found for amount of child's overall referencing (variable C1) ($F(2,13)=8.88, p<.004$), percentage of verbal referencing (variable C2) ($F(2,13)=7.03, p<.009$), and amount of mother's response to referencing (variable M1) ($F(2,13)=7.33, p<.007$). Inspection of the figures in Table 4 shows that the Insecure-low toddlers referenced mother far less than did Secure or Insecure-high toddlers (variable C1), that their referencing was more often non-verbal (variable C2), and that mothers of Insecure-low toddlers were far less responsive to their children's bids for their attention than were mothers of Secure or Insecure-high toddlers (variable M1).[3]

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[3]A multivariate ANOVA for two groups (Secure and Insecure) was also performed, with consistent yet less pronounced group differences demonstrated ($p<.06$). Again, the Secure group demonstrated more referencing ($p<.009$), a higher percentage of verbal referencing

Table 4

Mean Values for Child Referencing and Maternal Response Variables

| | Variable | | | | |
|---|---|---|---|---|---|
| | C1* | C2* | C3 | M1* | M2 |
| | Secure | | | | |
| M | 33.88 | .78 | 1.65 | .75 | 2.38 |
| SD | 4.58 | .18 | .44 | .18 | .49 |
| | Insecure-low | | | | |
| M | 18.60 | .34 | 1.73 | .36 | 1.96 |
| SD | 8.91 | .27 | .25 | .24 | 1.12 |
| | Insecure-high | | | | |
| M | 29.67 | .73 | 1.24 | .77 | 2.20 |
| SD | 5.77 | .16 | .14 | .10 | .28 |

Note. C1 = total # intervals containing child's referencing; C2 = % verbal referencing; C3 = avg. distance from mother (1.0 - 3.0); M1 = % mother's responses relative to child's referencing; M2 = degree of maternal involvement (0 - 4.0).
*Significant group differences were found, $p<.01$

Significant group differences were not found for the child's average distance from mother during referencing (variable C3) or for the

($p<.032$), and a greater percentage of maternal responsiveness ($p<.065$) than the Insecure group.

average degree of maternal involvement reflected in mother's mode of response (variable M2).

Follow-up Univariate ANOVAs were then performed in order to determine significant pairwise comparisons among the three groups. As shown in Table 5, for each of the significant variables (C1, C2 and M1) the Insecure-low group differed significantly from both the Secure and Insecure-high groups ($p<.05$), whereas comparison of the Secure and Insecure-high groups was insignificant. As had been suggested by inspection of the figures in Table 4, it was the Insecure-low group which differed significantly from both other groups in its low amount of referencing, minimal verbal referencing, and low maternal responsiveness. The Insecure-high group did not differ significantly from the Secure group, failing to demonstrate the "clinging" referencing pattern that had been predicted.

No significant group differences were demonstrated on variable C3: the child's average distance from mother during referencing. On further reflection, it became apparent that this averaged figure tells little about the flexibility with which the child references mother from different distances. That is, a child who references mother exclusively from mid-distance and a child who moves between close, mid- and far distances when referencing mother could receive the same averaged score. Therefore, a post hoc analysis of the shifts in the child's distance from mother during referencing was carried out. By charting the child's location during referencing across the 45 time intervals a frequency count could be made of the number of times the child changed location during referencing. This frequency count would, for example, clearly distinguish between the child who referenced

Table 5

Pairwise Comparisons on Variables Which Show Significant Group Differences

| Group | Insecure-low | Insecure-high | Secure |
|---|---|---|---|
| | | C1 | |
| Insecure-high | * | -- | -- |
| Secure | * | -- | -- |
| | | C2 | |
| Insecure-high | * | -- | -- |
| Secure | * | -- | -- |
| | | M1 | |
| Insecure-high | * | -- | -- |
| Secure | * | -- | -- |

*$p<.05$

mother exclusively from one location and the child who referenced mother from variable distances. Following the initial hypotheses, it was predicted that securely attached children would shift location during referencing more frequently than insecurely attached children, manifesting a more flexible pattern of maintaining contact with mother.

By comparing the Secure group with the Insecure group as a whole,

it was found that securely attached toddlers referenced mother from more variable distances (average # of changes in location during referencing = 8.63) than did insecurely attached toddlers (average # of changes in location = 4.88) ($t(14)=2.08, p<.05$). When pairwise comparisons were made among the three groups, it became evident that the inflexibility of the Insecure-low group (average # of changes in location = 3.40) in contrast to the flexibility of the Secure group was more specifically the source of significant group differences ($t(11)=2.72, p<.01$). That is to say, differences between the Secure and Insecure-high (average # changes in location = 7.33) groups, (or between the Insecure-low and Insecure-high groups) were not significant.

# CHAPTER FOUR

## Discussion

### The Findings

The Insecure-low Group. Cluster analysis of the insecure group revealed that five insecurely attached dyads (the "insecure-low referencing" subgroup) displayed the "detached" referencing pattern predicted on the basis of their presumed early interactional history and internal working models. These toddlers were able to cooperate with the requirements of the situation - to play with the toys provided - but they did so while maintaining minimal involvement with the mother.

Henry and his mother are illustrative of this group. Henry entered the room at the beginning of the session and walked eagerly toward the toys. He glanced briefly at his mother but then settled into playing alone. Occasionally Henry looked at mother "surreptitiously" by rubbing his eye and looking at her from under his fist. Henry's visual referencing of mother elicited no response from her. Occasionally Henry walked up to his mother and spoke to her, to which she did respond. But Henry seldom referenced his mother verbally from a distance, and she paid little attention to him when he was away from her. While Henry's mother was responsive to his bids for her attention when he approached her, their communicative tie did not seem to extend across the room.

Sara and her mother were also in the insecure-low group. Of all the dyads in the sample, they were the most dramatically uninvolved with one another during the play session. Sara sat in the middle of the room among the toys and played quietly. She referenced her mother

with brief, occasional glances but said nothing. In fact, Sara did not speak to her mother once during the 15-minute period, nor did her mother once acknowledge her. Sara moved around the room very little, mostly sitting mid-distance from mother, playing with those toys which were within arm's reach.

In contrast to the secure group, the five insecure-low dyads were far less likely to interact with one another during the play session. The fact that these toddlers, when they did reference mother, more often did so non-verbally (i.e. by looking) supports the speculations previously stated about the nature of their internal working models of the attachment relationship and how these internal working models mold behavior. If a toddler is not confident of his mother's emotional availability, it seems that he would be more likely to "check on" her when he feels he needs her in a manner which does not convey an expectation that she will respond. Visual forms of referencing clearly call for a response less than verbal forms of referencing do. That the insecure-low group was more likely than the secure group to reference mother non-verbally is consistent with the hypothesis that their internal working models are of mother as a less available resource. One can also see how the toddler's expectation of no response may be contributing to the "detached" pattern of interaction that emerges. That is, the toddler's expectation that mother may not respond to his bids for attention may cause him to adopt a style of referencing (i.e. looking at mother) which is in fact less likely to capture mother's attention and to elicit a response. One can begin to see how an interactive pattern influenced by, and confirming of, the internal working models of each member of the dyad becomes

established.

Interestingly, insecurely attached toddlers also seem to be far less flexible than securely attached toddlers in choosing the distance from which they reference mother. When watching the securely attached dyads in this paradigm, one is struck by how freely these toddlers "come and go" in relationship to the mother. The insecurely attached dyad, in contrast, seems to have a more narrowly defined mode of interaction. Henry, for instance, almost never spoke to his mother unless he approached and stood next to her. His referencing of her from a distance was far more tentative and did not succeed in eliciting a response. One can speculate that Henry's internal working model of his mother's availability and of how to get her attention, at least in a situation where he is sharing her attention, involves physical proximity. And the infrequency of his approaches to mother further suggests that ideas about how often interaction takes place and under what circumstances are more circumscribed within his internal working models than might be true for a more securely attached child.

The Secure Group. Secure toddlers referenced mother more frequently, their referencing was more often verbal, and mothers of securely attached toddlers were more likely to respond to their bids for attention than was true for the insecure-low group. In addition, the secure group displayed more variability in the distances from which they communicated with mother, suggesting that the conditions under which these toddlers were able to sustain feelings of connection with mother are less constrained or "rule-bound".

Steven and his mother nicely illustrate the kind of flexible

interaction that characterizes the securely attached group. Steven referenced his mother far more often than did either Henry or Sara (34 out of 45 20-second intervals in contrast to 11 for Henry and 22 for Sara), and his referencing was more often verbal. He also referenced mother from more variable distances than did either Henry or Sara (he changed the distance from which he referenced mother 12 times during the play period in contrast to 3 for Henry and 0 for Sara). Steven's mother also responded more frequently to his bids for attention (she responded to 91% of his bids in contrast to 45% and 0% for Henry's and Sara's mothers respectively). When Steven entered the room he headed straight for the toys and immediately commented to his mother about what he saw. From mid-distance he made occasional brief comments to her about the fantasy play he was engaged in. Every now and again Steven walked up to his mother and enlisted her involvement in his play, for example by asking her to put pretend film in his toy camera. Each time, Steven's mother participated briefly in his play before he returned again to playing on his own. Occasionally she would interrupt their play together to "shoo" him back to play on his own. He responded to her gentle shoves easily, returning to his play with no apparent feeling that their connection had been ruptured. Steven continued to make comments to his mother about his play throughout the play session, seeking her attention as easily from far away as from close up.

The Insecure-high Group. The contrasting patterns of interaction that were predicted as reflecting different internal working models of the attachment relationship were clearly demonstrated between the secure and insecure-low groups. However, the pattern of "clinging"

behavior which it was predicted would characterize some insecurely attached toddlers was not seen in the insecure-high group. While this subgroup differed from the insecure-low subgroup in their higher amount of referencing, greater verbal referencing, and greater maternal responsiveness, they did not differ significantly from the securely attached group. Therefore, the meaning of this pattern of interaction is more difficult to interpret. Does this pattern, which resembles the pattern seen in the securely attached group, identify insecurely attached dyads who have evolved over time into a more secure attachment? Or are there qualitative differences between the secure and insecure-high groups that cannot be captured in the quantitative data gathered here?

The quality of interaction of only one of the three insecure-high dyads stood out as distinctly different from that seen in the secure group. Jill began the play session by making brief attempts to play alone, but she ran back to her mother repeatedly. Twice she had her mother get up from her chair to play ball with her, prompting the experimenter to suggest (the second time): "Can mommy sit for a little while?". Jill then lingered near her mother for a few minutes, speaking to her in a whining voice, before venturing off on her own. During the bulk of the session, as Jill picked up toys or engaged in brief periods of play, she repeated in a whining tone "What's that mommy, what's that?". This repeated refrain had an unusual quality. It would begin in a rather flat, sing-song tone that sounded more like Jill was talking outloud to herself than trying to get her mother's attention. In fact her mother seldom responded initially. However, as Jill repeated the question her tone grew more shrill and demanding.

Once her mother did respond Jill often lost interest in the toy that she'd been asking her mother to identify, and she would pick up another and begin her refrain again.

The quality of Jill's referencing was not characterized by a relaxed eagerness to share with her mother about her discoveries nor an easy confidence that her mother would adequately respond to her bids. Her repetitive refrain had both an uncommunicative and a demanding quality, perhaps reflecting the ambivalence she felt: "I need something from you but I am afraid and angry that I won't get what I need!" (Dr. Slade, who had known Jill and her mother well, confirmed that Jill's mother was characteristically highly unresponsive and often rejecting of Jill.)

One possible explanation for why a "clinging" subgroup was not clearly identified is that there was only one insecure-ambivalent baby present in this sample. While the differences between securely attached and insecurely attached infants have been well investigated, the differences within the insecure group, between insecure-avoidant (Group A) and insecure-ambivalent (Group C) infants, are much less well understood (Lamb, Thompson, Gardner, Charnov & Estes, 1984; Sroufe, 1983). While there is some face validity to the notion that infants whose behavior is avoidant of the mother in the Strange Situation might exhibit "detached" referencing patterns in toddlerhood, and infants whose behavior is ambivalent (alternating proximity-seeking and angry-resistant behavior) in the Strange Situation might exhibit "clinging" referencing patterns in toddlerhood, the differences between A and C babies are not well enough understood to have made this clear prediction. Rather, the

prediction that insecurely attached infants would display either "detached" or "clinging" referencing patterns was based more generally on the conclusion that these limited solutions are what would be available to the toddler who is pushed to separate from mother when the security of his attachment to her is not well established.

In order to test the possible validity of "detached" and "clinging" referencing patterns among subgroups of insecure toddlers, further studies should be done with larger samples of A and C infants. Interestingly, while the one C infant in the present study fell in the "detached" subgroup (because of his overall minimal amount of referencing), a closer look at his behavior in the play session reveals a striking combination of clinging and detached referencing patterns. James was the only child in the sample who was unable to separate from mother at the beginning of the play session. He entered the room tentatively and stood with his back against the couch anxiously looking at the play area. He then followed mother to her seat and clung to her. Despite mother's encouragement, James refused to leave her side and would only move to the play area when his mother accompanied him. James' mother picked up several toys with which she tried to engage his interest, but he sat silently beside her and was largely unresponsive to her encouragement. After several minutes, James began tentatively to feed a baby doll that mother had offered him. Mother then returned to her chair. However, once mother left his side, James played with his back to her and referenced her only once (non-verbally) during the remaining 11 minutes of the play session.

In the example of James, clinging and detached referencing patterns seemed to be opposite expressions of the same underlying

internal working model of mother as an uncertainly available resource. The conditions under which James experienced his mother as possibly available to him seemed to be tentative and rigidly defined. Either she was immediately present (in which event he still seemed unable to relax) or there was no communicative tie connecting them, leaving him very much alone.

Maternal Responsiveness. The one prediction that was not supported by the present findings was that mothers of securely attached infants would adopt a more participatory mode of response to their infants' bids for attention than would mothers of insecurely attached infants. Most mothers "acknowledged" their children's bids for attention more often than becoming active participants in their children's play. This mode of response in fact adheres most closely to the injunction given at the outset of the play session, which was to encourage the toddler to play on his own. The paradigm, therefore, may have imposed an artificial uniformity on the mothers' mode of response (see also Slade, 1987b).

The frequency of maternal responsiveness, in contrast, was highly significant between the groups. Mothers of securely attached toddlers were more responsive to their toddlers' bids for attention than were mothers in the insecure group. This finding is consistent with Ainsworth's observation that mothers of securely attached infants are more responsive to their infants' needs during the first year of life (Ainsworth et al., 1978).

Lamb et al. (1984), and others, have raised the question of whether the behavior patterns which characterize securely attached children reflect a response to ongoing patterns of parenting as

opposed to reflecting internal working models of the relationship. Without a doubt, all behavior is in part a response to current patterns of interaction. Sorce and Emde (1981) have demonstrated that a toddler's willingness to approach mother is significantly affected by the cues that mother communicates about her availability. It seems probable that there are subtle cues that mother communicates regarding her availability which are influencing the toddler's willingness to bid for her attention in the present paradigm. However, it is argued here that response to social cues is insufficient to explain the current findings. When consistent patterns of interaction can be demonstrated across time, in different contexts, and involving different behaviors, it seems reasonable to assume that these consistencies reflect aspects of the relationship as it is experienced and understood by each member of the dyad. Constructs such as internal working models, which are argued to organize behaviors according to expectancies born out of experience, better explain such observed consistencies than do explanations regarding learned or cued behaviors. In addition, that consistencies in the organization of behaviors of securely and insecurely attached children can be demonstrated in mother's absence (e.g. Main et al., 1985) further argues for the operation of internal working models as a significant influence on ongoing relationships and the developing self.

Referencing and Autonomous Exploration. What appears to distinguish the securely attached group from the insecurely attached group in the present paradigm is the degree and ease with which a communicative tie is maintained between mother and toddler. The securely attached toddlers seem to know that mother is available and

they go to her in a variety of ways. The avenue for communication is open and interaction is abundant. What is interesting is that a high degree of interaction does not appear to take place at the expense of autonomous activity. To the contrary, the findings of several investigators demonstrate that securely attached children are able to apply themselves more fully to their explorations (Belsky et al., 1984; Arend et al., 1979). Slade's finding (1987b) that the securely attached toddlers in this sample spent significantly more time engaged in their highest level of symbolic play than did the insecurely attached toddlers is consistent with this view.

In fact the more open avenue of communication seen in the secure group seems to facilitate and enhance the child's exploratory activity and development of autonomous skills. Matas et al.'s findings (1978) support this view, demonstrating that securely attached toddlers working on problem-solving tasks went to mother more easily when help was needed, and, in turn, were more persistent in working to solve the task. Slade's findings (1987b) lend further support, demonstrating that maternal participation served to enhance the duration and complexity of securely attached toddlers' play, whereas it had no effect on the level or duration of the play of the insecurely attached group.

Limitations of the Present Study and Need for Further Research. Because of the small size of the present sample, these findings can only be regarded as suggestive of group differences. It would be necessary to replicate these findings with larger, independent samples in order to assess the significance of these results and to more accurately understand the nature of the group differences. For

example, by studying larger samples of insecure-avoidant and insecure-resistant groups, the possible validity of "detached" and "clinging" subgroups could be investigated, and those factors which lead a toddler to adopt one or the other of these coping strategies could be better understood.

As was seen in the insecure-high referencing group, at least two of the three insecurely attached dyads did not differ significantly from the securely attached dyads in the present paradigm. Does this reflect that some insecurely attached dyads evolve over time into a more secure attachment? By adding to the present design an additional assessment of the nature of the attachment bond in toddlerhood, one could assess whether changes have occurred in the child's attachment to mother since infancy. Further, by gathering data regarding life events and stressors between the age-points studied, i.e. between 18 and 28 months, one could explore which factors might have contributed to any changes found in attachment classification. In this way, more precise predictions could be made, and disconfirming results (such as the "secure-like" pattern seen in two members of the insecure-high group) could be better understood, about how the nature of the attachment bond influences the way in which the dyad negotiates the separation-individuation process.

Lastly, if Stern (1985) is correct that internal working models of attachment are only one of the infant's many types of internal working models (or "RIGs") of his relationship with mother, then more sophisticated assessment of the toddler's different internal working models of mother, and of how these influence his negotiation of the tasks of separation-individuation, could eventually be studied.

However, as in all clinical research, the more of the complexity of the problem that one tries to address, the more unwieldy one's endeavor can become. It is inevitable that in addressing any question about human development that much will remain unanswered.

## Implications for Theory

What relevance do these findings have for current developmental theory? Mahler (Mahler et al., 1975) argues that the central developmental task of this period is the establishment of libidinal object constancy, which enables increased separateness from the mother and the emergence of greater autonomy and individuality. The quality of the toddler's ongoing relationship with the mother is assumed to be important to these achievements. But Mahler focuses on the toddler's more or less successful internalization of the mother, "that delicate, newly formed inner structure of relative emotional object constancy" (p. 118), as the critical achievement which determines the toddler's ability to sustain himself in the mother's absence.

Stern (1985) argues, however, that Mahler's focus on the developmental progression from mother-infant symbiosis to greater separateness and individuation causes her to overlook the importance of the relatedness which continues between the mother and child during this period. Different qualities of experiencing being with another become possible for the infant as he matures, contributing to a more articulated sense of differentness from mother, but also to new experiences of togetherness. In contrast to Mahler's view of self-other differentiation gradually emerging out of symbiotic merger, Stern argues that the infant is able to experience increasingly complex dimensions of relatedness and differentiation as he moves

through developmental stages, and that both are part of the infant's experience from the earliest weeks of life.

The current findings shed an interesting light on the different theoretical emphases of Mahler and Stern. Mahler emphasizes that greater intrapsychic maturation in toddlerhood enables more successful self-regulation and greater separateness. However, the securely attached toddlers in this paradigm referenced mother more, not less, than did the insecurely attached toddlers. While more successful self-regulation and autonomy have been shown to characterize securely attached children in other studies, what is being highlighted in the present paradigm is the greater, more flexible connection that also exists within securely attached dyads. These findings do not challenge the proposition that toddlers develop increasingly stable inner resources that enable them to function more autonomously. Rather, they suggest that this is not the whole story. The open avenue of communication that continues between mother and toddler, influenced by the internal working models that each member forms of that relationship, appears to be a critical component of the separation-individuation process (see also Slade, 1987b).

The greater amount of referencing seen in the secure group does not mean that the secure child is less able to do without mother. As Ainsworth (1969; 1972) points out, dependency and security of attachment, while sharing many behaviors, are quite different. The clingy child has a very different experience of his relationship to mother than the child who interacts freely with her. Rather, it seems more accurate to infer that in the secure dyad mother is viewed as more accessible, and the less rule-bound relationship enables the

child to use the mother and their relationship in a way which enhances his development.

What can we imagine the child is experiencing when he references the mother? Certainly in moments when he feels frightened or uncertain he references her in order to restore feelings of security. In moments when he feels frustrated or tired he might go to her for comfort. At other times he might go to her less out of an emotional need and more for practical assistance. But there are also the pleasures he experiences in sharing with her about his discoveries, in knowing that his feelings have been understood, and in adding the dimension of her experience to his own.

Stern writes:

> When the infant returns to mother, it is not only to be 'refueled' or to deactivate the attachment system. It is a reaffirmation that the infant and mother (as separate entities) are sharing in what the infant experiences. For instance, an infant experiencing fear after wandering too far needs to know that his or her state of fear has been heard. It is more than a need to be held or soothed; it is also an intersubjective need to be understood. (p. 270)

Stern writes about the different ways in which the infant experiences himself in relationship to others. Increasingly complex modes of relating become available to the infant in successive stages as he matures and, rather than replacing one another, coexist as simultaneous aspects of self experience. "Intersubjectivity" and "verbal relatedness" are proposed dimensions of the child's subjective experience with mother which nicely describe what one observes during referencing. "Intersubjective relatedness" adds to the infant's physical and sensory sense of self and other the realization that what goes on in the mother's mind is similar enough to what goes on in the infant that they are capable of (non-verbally) communicating about

their subjective experience. "Psychic intimacy as well as physical intimacy is now possible. The desire to know and to be known is great." (p. 126) Through the mother's empathic sharing in the infant's experiential state, the infant begins to realize that subjective experience is shareable with someone else.

"Verbal relatedness" emerges with the acquisition of language. Through language the toddler moves still further toward separateness and individuation, while new avenues for communication also open: "... the infant and mother create a being-with experience using verbal symbols - a sharing of mutually created meanings about personal experience." (p. 172)

As he grows older, an increasing proportion of the toddler's experience occurs separate from mother. But separation need not progress at the expense of continued relatedness. When the exploring toddler reaches out to mother across the distance he has travelled, or briefly returns to her, he has an opportunity to share his experience with her. If she resonates with his subjective state, or converses with him about his discoveries, his experience is enriched and connectedness has not been sacrificed.

The present findings show that the opportunities for dialogue and for the sharing of experience are more abundant and less rule-bound in the securely attached dyad. The more restricted pattern of interaction seen in the insecure dyad limits the kinds of subjective experience which can be shared. As argued earlier, successful separation-individuation relies not only on the development of sufficient inner resources to allow for autonomous functioning. It also relies on the discovery that the complex feelings associated with increasing

independence, i.e. feelings of mastery and fear, excitement and anxiety, joy and sadness, can be shared with others who are important. The more fully that the ongoing attachment relationship, and the internal working models of that relationship, allow for the sharing of subjective experience, the more easily separation-individuation can progress without feelings of great risk and compromise.

## Relevance for Clinical Practice

Stern emphasizes the importance for the child of feeling that his experience has been understood. The child has a 'need for psychic intimacy', a need to be known and to be able to know another's subjective experience. Securely attached toddlers, as Slade (1987b) has shown, are able to use the relationship with the mother to function more fully within their potential. One could speculate that part of what happens in the securely attached dyad is that the infant is able to experience more of himself in his interactions with the mother. With less constraining rules to limit the kinds of experience which the securely attached child is permitted to bring into the dyad's communicative arena, the securely attached child is enabled to discover more of himself.

Winnicott (1971) describes that the infant's discovery of himself rests in the mother's ability to see and respond to her infant's emotional state.

> What does the baby see when he or she looks at the mother's face? I am suggesting that, ordinarily, what the baby sees is himself or herself. In other words the mother is looking at the baby and what she looks like is related to what she sees there ... Many babies, however, do have ... a long experience of not getting back what they are giving. They look and they do not see themselves. There are consequences ... The mother's face is not then a mirror. (pp. 112-3)

When the mother is not too preoccupied by her own concerns, or the rules within her own internal working models of attachment relationships do not exclude significant aspects of emotional experience from awareness, she is able to know about and reflect back to the infant his subjective experience. As Werner and Kaplan (1963) describe, it is "in the atmosphere of the mother" that the infant comes to give meaning to his experience; this is true in his coming to give meaning to the world of objects around him, as well as in his coming to know his subjective experience.

The critical role that the mother plays in enabling the child to come to know his "true self", as Winnicott (1960) describes it, can also be seen in the role of the analyst. The analyst does more than offer the patient a verbal understanding of his or her wishes and motivations. The analyst creates an atmosphere in which the patient feels permitted to bring forward his experience, both through verbal and non-verbal modes of communication. This atmosphere is created as the analyst conveys that the patient's communications have been heard. The analyst conveys that he 'hears' the patient's communications through his empathic comments and sounds, but also through his 'ongoing listening'. The patient comes to experience the analyst's silences as filled with his ongoing listening when these silences are followed by empathic comments which reveal his active listening to the patient's communications. The experience of the analyst's 'ongoing listening' then becomes an integral part of the therapeutic atmosphere.

One of the central tasks of the analytic work is to help the patient to gain access to aspects of self experience and ways of

relating to others which have not previously been available to him. The analyst becomes aware of those aspects of self experience which have been cordonned off by attending to the content (that which is absent as well as that which is present) of the patient's communications. But the content of the patient's associations is not the only data upon which the analyst draws to learn about the patient's self experience. Much can also be learned by attending to the shape of the interaction that emerges between patient and analyst.

Perhaps the concept of maternal referencing can provide a useful metaphor for understanding aspects of what occurs within the analytic situation, both in terms of what the patient communicates about himself through the patterns of his "referencing" of the analyst, and in thinking about what is "curative" within the analytic process. The patterns of maternal referencing observed between toddler and mother in the secure and insecure groups reflect different pictures of what one can speculate is the toddler's internal working model of himself in relationship to mother. Through the flexibility or inflexibility with which the toddler chooses his mode of referencing, one can speculate about the inner rules that define the conditions under which experience can be shared. The rules which govern access to feelings, cognitions and memories, and which guide interactions with attachment figures, will re-emerge, in some form, in new attachment relationships and of course will be apparent in the transference in the analytic relationship. The patient "references" the analyst in the analytic situation; he communicates his subjective experience verbally and non-verbally, and he expresses varying degrees of confidence that his communications will be heard. The patterns that appear in what the

patient does and does not bring to the analyst of his experience, and the rules that seem to guide his experience of the analyst's availability or receptivity to his communications, can tell the analyst a great deal about the patient's internal working models of attachment relationships.

As the analyst helps the patient to identify recurrent patterns of coping with feelings and of responding to others, he or she is responding not only to the patient's established patterns, but also to those aspects of the self which have been excluded from the realm of 'knowable' and 'shareable' subjective experience. To use Winnicott's metaphor, the analyst acts as a mirror, reflecting back to the patient the aspects of self that the patient brings to the analyst; he reflects both that which is expressed directly as part of the self, and that which can be recognized as 'discarded' or 'dismissed' parts of the self. By taking up the role that we can speculate the "good enough" mother of a securely attached child plays, the analyst creates with the patient opportunities to learn about self experiences that have not previously been fully heard.

The present data only show that the securely attached dyad has more frequent and less circumscribed opportunities for communication. We can only speculate, therefore, about how the dyads differ in the breadth of subjective experience which they are able to share and how these differences influence future development. Like we can imagine to be true for the referencing toddler, the patient brings into the analytic relationship many aspects of self experience. In addition to verbal experiences of self, physical and intersubjective aspects of self experience (Stern, 1985) are expressed. These are often more

subtle but no less critical to the patient's sense of self. As the analyst is able to recognize and respond to different aspects of what the patient "brings", previously unrecognized aspects of self move into the communicative arena between patient and analyst where they can be made meaningful. As Winnicott (1971) describes, the process of the infant (or patient) bringing forth "subjective experience", and the mother (or analyst) responding with "objective perception", is the developmental process by which experience is given meaning. Insofar as that which is "subjectively conceived of" is met, the patient "will find his or her own self". Winnicott writes:

> This glimpse of the baby's and child's seeing the self in the mother's face, and afterwards in a mirror, gives a way of looking at analysis and at the psychotherapeutic task. Psychotherapy is not making clever and apt interpretations; by and large it is a long-term giving the patient back what the patient brings. It is a complex derivative of the face that reflects what is there to be seen. I like to think of my work this way, and to think that if I do this well enough the patient will find his or her own self, and will be able to exist and to feel real. Feeling real is more than existing; it is finding a way to exist as oneself, and to relate to objects as oneself, and to have a self into which to retreat for relaxation. (1971, p. 117)

The mother's ability to meet her infant's communications is a central component to the healthy developmental process of the infant's discovering himself. Similarly, the analyst's ability to "hear" beyond the patient's idea of what is knowable subjective experience to much of what the patient brings can be thought of as recreating this developmental process where the patient is able to give meaning to broader areas of his subjective experience.

## Conclusion

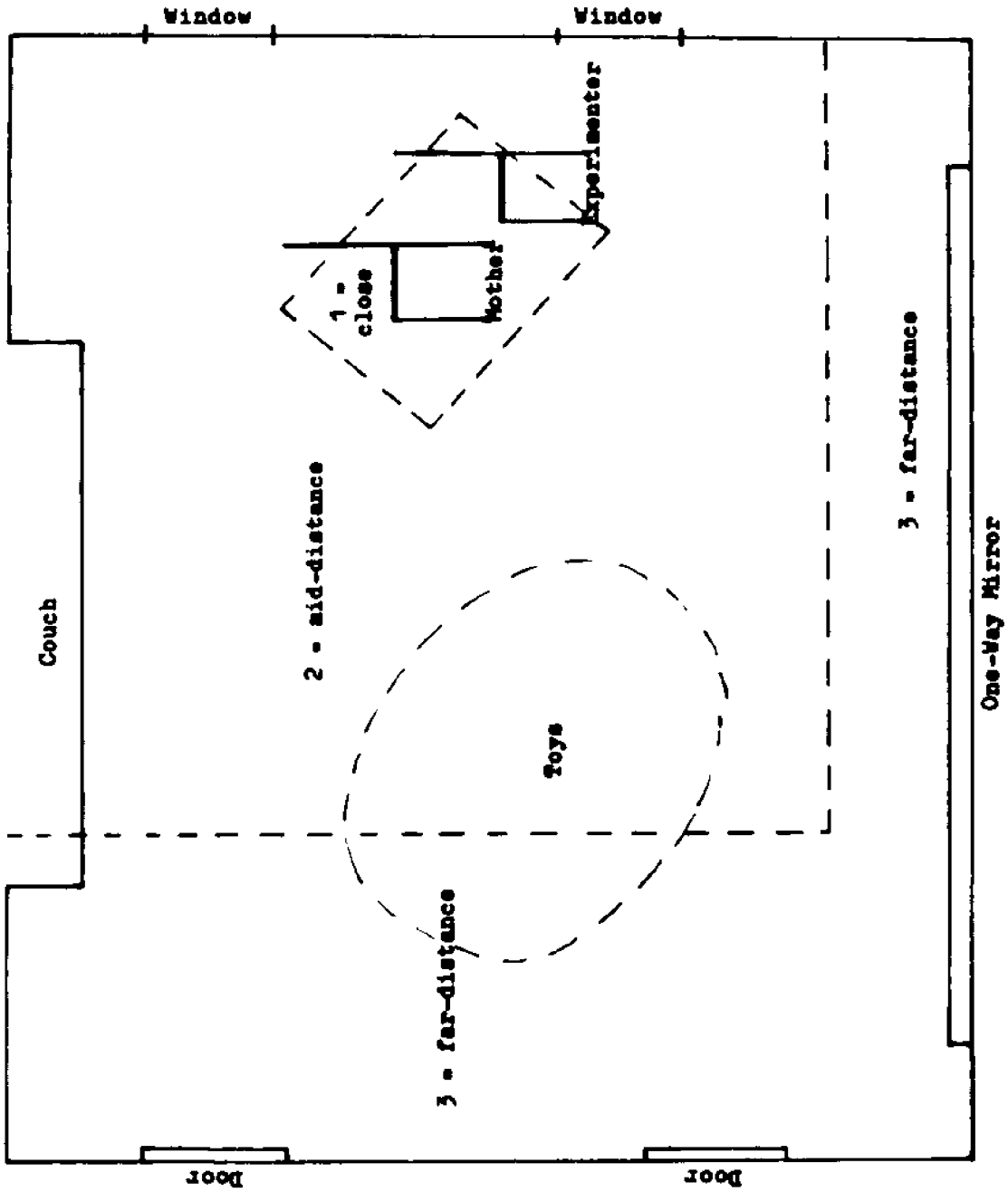
The findings of the present study support the hypothesis that the different internal working models of attachment which are presumed to

characterize securely and insecurely attached toddlers will be reflected in different patterns of maternal referencing. As a group, securely attached dyads manifested more open and flexible avenues of communication; in contrast, insecurely attached dyads were more constricted and less flexible in their efforts to maintain a communicative tie.

In many ways, securely attached dyads can be seen as working well together, and securely attached toddlers can be seen as moving through developmental tasks of the first years of life with greater personal resiliency and interpersonal skill. The present findings support the theoretical emphasis on the importance of a secure attachment bond for the dyad's successful negotiation of the difficult tasks of separation-individuation in toddlerhood. However, these data only show that securely attached dyads maintain more frequent and flexible communications through tasks of separation-individuation like the one studied here; they do not reveal what the quality of those communications is, or what their significance is for the dyad. However, one can begin to speculate about the opportunities for interpersonal discovery and growth that are facilitated by frequent and flexible contacts between mother and toddler, and about the significance that this open avenue of communication might have for the toddler's developing sense of self. These questions await further investigation and understanding.

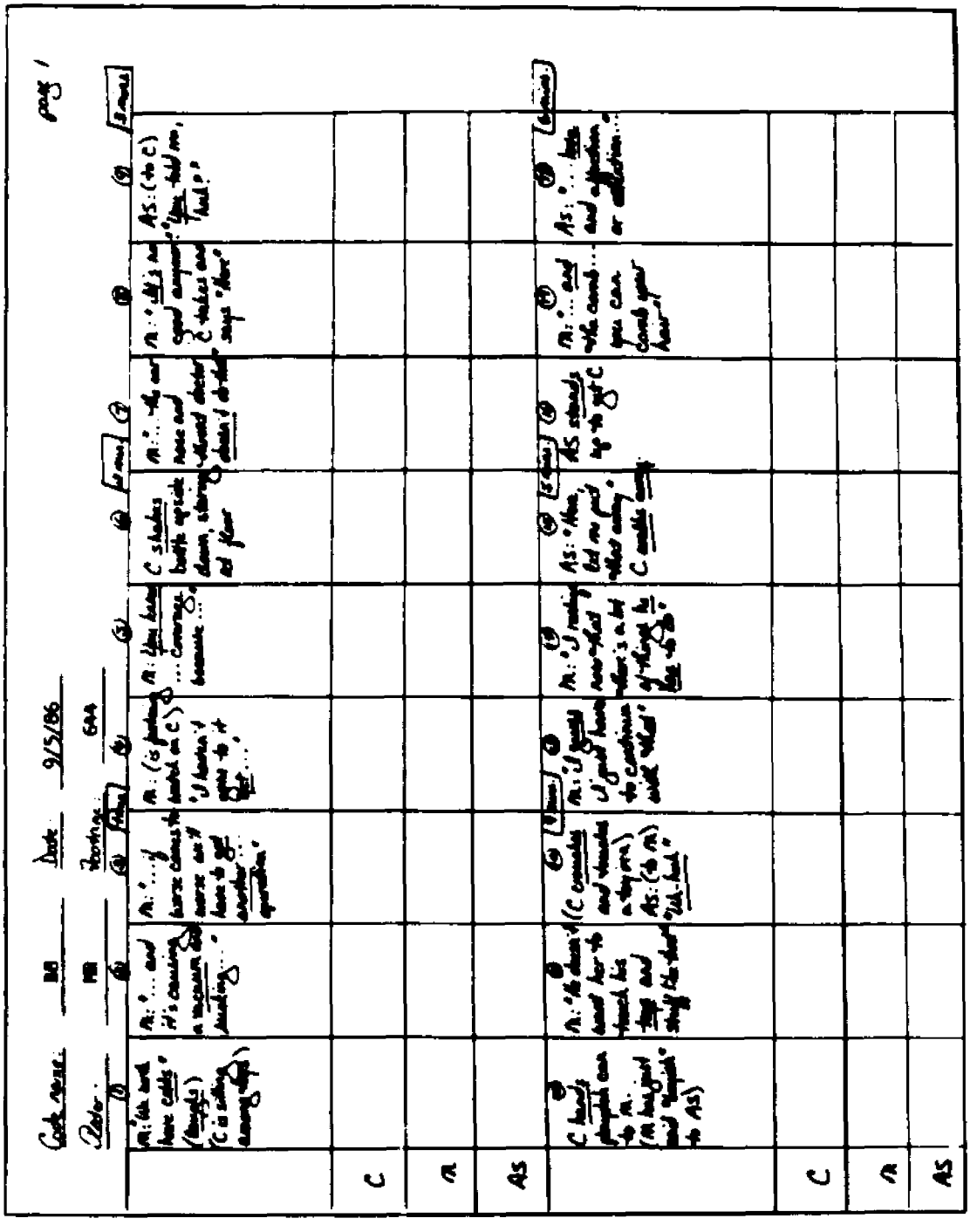
# APPENDIX A

## Map of the Playroom



# APPENDIX B

## Sample Coding Sheet



# APPENDIX C

## Coding Manual for Maternal Referencing

### Child

The child's referencing of the mother will receive the following two scores:

Location and Mode of Referencing: This rating reflects where the child is in relationship to the mother at the time of referencing, i.e. close (1), mid-distance (2), or far-distance (3). Close is defined as within arm's reach of the mother, and far-distance is the periphery of the room. Mid-distance is the large area in between, including the center area of the floor where the toys are spread out and most of a couch against a near-by wall (see Appendix A). This rating also reflects whether the child references the mother by speaking to her (S) or not by speaking (N), but rather by looking at her (or touching her).

This scale is an eight-point, hierarchically-arranged categorical measure of the degree of the child's involvement with the mother during referencing. The rating is two-dimensional: 1) how far away the child is from the mother when referencing occurs, and 2) whether the child references the mother verbally or non-verbally (i.e. by looking at or touching the mother). Both dimensions are included in each category (except in those categories which describe no

referencing of the mother). The number in the first column indicates the child's location in the room at the time of referencing (1,2 or 3), and the letter in the second column indicates whether the child references the mother by speaking or not speaking (S or N). The last two scores indicate no referencing of the mother: "EX" is given when the child references the experimenter (any form of referencing) to the exclusion of any referencing of the mother; and "00" is given when the child has not referenced at all during that 20-second period, i.e. has remained solitary. (If the child references the experimenter in addition to referencing the mother, only referencing of the mother is scored.)

1S = Close, and speaking to mother

1N = Close, and not speaking but looking at or touching mother

2S = Mid-distance, and speaking to mother

2N = Mid-distance, and not speaking but looking at mother

3S = Far-distance, and speaking to mother

3N = Far-distance, and not speaking but looking at mother

EX = References experimenter to exclusion of mother

00 = No referencing

Only one rating will be given per 20 second interval. Therefore, if two or more forms of referencing occur during one interval, the code which reflects the greatest degree of involvement with the mother (i.e. the code which is highest in the list above) will be given. For example, if the child speaks to the mother from far away, but then walks up to her and places a toy in her lap without speaking to her, the latter form of referencing is scored. Also, within the same proximity, verbal forms of referencing would supercede non-verbal

forms of referencing.

* Reserve "referencing" (vs. Speaking to Self) for those instances when child is clearly talking to mother (or experimenter), and is not simply tossing words out, unconcerned with whether mother hears or responds to them.

* If child has not spoken for 19" of a time segment and begins to speak during the last 1" and continues into the next time segment, score "no referencing" for the first segment and "referencing" for the second segment. That is to say, regard the first or last 1" of a frame as a flexible border region that can be included as part of a neighboring time segment if it seems to be so, in contrast to the other 19" of its own time segment.

Speaking to Self: A separate score will be given to indicate whether the child is speaking outloud but apparently to himself during the 20-second interval. The score "SS" (Speaking to Self) is defined as words or sound effects indicating that the child is talking aloud about his thoughts or his play. Exclamations (e.g. "Wow!" or a squeal of delight) are not included. This is a separate score from "location and mode of referencing" given that the child may talk to himself and reference the mother during the same 20-second interval.

## Mother

The mother's interactions with the child will receive the following four scores:

Response to Referencing: This rating is a hierarchically-arranged categorical measure of the nature of the mother's responsiveness to and involvement with the child in response to the child's bids for her attention. The five points along this scale range from active participation in the child's play, to supportive acknowledgement of the child's activities, to no response. The mother's more subtle non-verbal cues (e.g. looking at child from a distance), while unquestionably interactive communications, cannot be scored (because mother is not always in camera view when child is far away). Therefore, only verbal behaviors, and obvious non-verbal responses which occur when child is near mother, are scored.

P = Participation. Mother participates in child's play by taking a role (e.g. M assumes role of patient and allows C to listen to her heart with stethescope), by participating in reciprocal play (e.g. C puts sunglasses on M and M then puts sunglasses on C), or by participating in the fantasy (e.g. M suggests "Why don't you call someone else" after C has finished 'talking to daddy' on toy phone). Similarly, mother might give a fantasy identity to a play object. Mother's participation can be verbal or non-verbal.

Examples: 1. M accepts reflex hammer from C and taps C's elbow (assuming role of doctor)

2. C brings doll and blanket to M. M wraps doll in blanket and hands to C, as though 'to put to bed'

3. C is pushing iron on floor. M: "Oh are you ironing some clothes?" (participating in fantasy)

4. C is molding playdoh. M: "Are you making a pie?"

(giving play object a fantasy identity)

SP = Slow participation. Mother participates in the child's play (see definition for "P") but only after the child has bid for her attention more than twice.

A = Acknowledgement. Mother acknowledges child's play or behavior verbally, or accepts something from the child. Mother has not become a participant in the child's play.

Examples: 1. C is pushing iron on floor. M: "Yes, you're ironing"

2. C puts on sunglasses. M: "Oh you look beautiful!"

3. M accepts a toy from C, folds a baby blanket for C, or fastens a watch on C.

4. C puts arms around M's neck. M hugs C and says "I love you"

SA = Slow acknowledgement. Mother acknowledges the child (see definition for "A") but only after the child has bid for her attention more than twice.

0 = No acknowledgement of the child by mother. (Mother might look briefly at the child, but no other acknowledgement is made.)

Only one rating may be given per 20-second interval. Therefore, if more than one form of response occurs within a single interval, the code which reflects the greatest degree of involvement and responsiveness will be given. For example, if the mother acknowledges the child's having put on sunglasses by exclaiming "Oh you look beautiful!", but then accepts the sunglasses from the child and puts them on herself (reciprocal play), participation would be scored. In

other words, the scores, as listed above, are arranged from the greatest involvement to the least involvement.

* "Slowness" of response should be considered across two 20-second intervals if necessary. For example, if C bids for M's attention twice during one frame and mother doesn't respond, mother would receive a score of "0" (no response) for that frame. If, however, C bids a third time at the outset of the next frame and M then acknowledges C, M would receive a score of "Slow acknowledgement" because it is in fact the child's third consecutive bid, even though it was only the first bid within that time frame.

Initiation of Play Bout: A separate score, "I", is given when the mother initiates interaction with the child by introducing a topic of play. Here mother is not responding to the child's bid for her attention, rather she is intiating interaction of her own accord. It is therefore not a "form of response" and should be scored separately from the previous category. Note that this category of behavior is more than mother making a suggestion for child's ongoing play, or than her responding to child's request for her attention by encouraging child to play (e.g. C: "When can we go home?" M: "Why don't you play with some of these nice toys?" This would be acknowledging). Mother is initiating the interaction around a new topic of play.

Examples: 1. C is standing idly. M: "Why don't you call daddy on the phone?"

2. M: "Why don't you bring me that baby over there?"

Initiated Extraneous Comments: Occasionally the mother will

initiate interaction by making a comment to the child about something which has nothing to do with the play. "Extraneous comments" or "E" should be scored for those instances when the mother initiates a new topic of interaction that has nothing to do with the child's play.

Examples: 1. M: "Did you tell the doctor you're going to school in September?"

2. M: "Show the doctor your new teeth"

Prohibitive Comments: "Pr" should be scored for those instances when the mother responds to the child's behavior prohibitively, by telling him not to do something he's doing.

Examples: 1. C is putting playdoh in mouth

M: "Don't put that in your mouth!"

2. C goes to window

M: "Come away from there!"

3. C opens door to hallway

M: "You wanna close the door?"

## Experimenter

The experimenter's occasional interactions with the child are coded in the same way as is the mother's interactive behavior.

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