

Enhancing Early Attachments

*Theory, Research,
Intervention, and Policy*

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THE GUILFORD PRESS
NEW YORK LONDON

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72 Spring Street, New York, NY 10012
www.guilford.com

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Printed in the United States of America

This book is printed on acid-free paper.

Last digit is print number: 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Enhancing early attachments : theory, research, intervention, and policy /
edited by Lisa J. Berlin ... [et al.].

p. cm. — (Duke series in child development and public policy)

Includes bibliographical references and index.

ISBN 1-57230-996-2 (hardcover)

1. Infants—Development. 2. Infant psychology. 3. Attachment behavior.
4. Developmental psychobiology. I. Berlin, Lisa J. II. Series.

RJ134.E53 2005

155.42'2—dc22

2004029339

Examination of the Precursors of Infant Attachment Security

*Implications for Early Intervention
and Intervention Research*

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Even though the practice and study of enhancing early attachments can involve considerable disagreement, one notion typically generates consensus: If the goal is to promote secure infant attachment, it is helpful to understand the multiple and complex precursors of individual differences in infant attachment quality. The goal of this chapter is twofold. First, we describe the First Year Project, a pilot research project in which we set out to examine these precursors. Second, we discuss the implications of our preliminary research observations for early intervention and intervention research. We underscore that we are in the early stages of this project and that this chapter reflects our current thinking about issues that should be considered. Our thinking may well change when we have gathered additional data.

THE FIRST YEAR PROJECT: EXAMINING THE PRECURSORS OF QUALITY OF INFANT ATTACHMENT

Theoretical Background to the First Year Project: The “Transmission Gap”

A cornerstone of attachment theory is that a mother’s sensitively responsive behavior is an important contributor to the quality of her infant’s attachment to her (Ainsworth, 1982; Ainsworth, Blehar, Waters, & Wall, 1978). Thus, when a mother is consistently sensitively responsive to her infant’s needs, the infant is expected to become securely attached to her. Of equal theoretical importance is the notion that an important determinant of maternal behavior is the mother’s own attachment-related mental representations. A secure mother is expected to be open to the full range of her child’s needs and to respond in a way that establishes the parent as a “secure base” from which the child can explore (Ainsworth et al., 1978; Bowlby, 1988). These two theoretical notions together form the intergenerational transmission model depicted in Figure 2.1.

Considerable research has examined the theoretically based pathways of parental representations to parental behavior to infant attachment, and consistent empirical evidence has emerged for all three of the proposed direct links. These data have been summarized in a series of meta-analyses. A robust link between parental attachment representations and infant attachment (Figure 2.1, path *a*) has been established in a

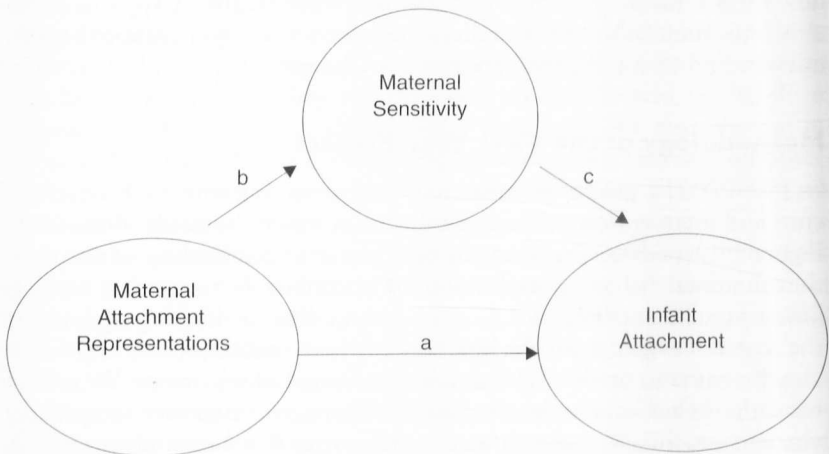


FIGURE 2.1. Path model for the relations among maternal attachment representations, maternal sensitivity, and infant attachment.

meta-analysis examining 661 parent–infant dyads (van IJzendoorn, 1995). The link between parent attachment representations and parental behavior (Figure 2.1, path *b*) was also found to be strong in a meta-analysis that reviewed 389 dyads (van IJzendoorn, 1995). The largest body of research is that examining the link between parental behavior and infant attachment. In a meta-analysis of over 4,000 infant–mother pairs, De Wolff and van IJzendoorn (1997) found a moderately strong association between mothers' sensitive caregiving behaviors and their infants' attachment to them (Figure 2.1, path *c*).

Although clear support exists for the proposed direct connections among parental representations, parenting behavior, and infant attachment, little support exists for the hypothesis that parenting behavior mediates the link between parental state of mind and child attachment. Van IJzendoorn's (1995) meta-analytic test of this mediated model (Figure 2.1 as a whole) revealed that parenting behavior accounted for a relatively small proportion of the association between parent and infant attachment. The data did not support the theoretical model whereby parenting behaviors serve as a major linking mechanism between parental attachment representations and their infant's attachment to them (see also Pederson, Gleason, Moran, & Bento, 1998, for similar findings in a subsequent study of 68 dyads). Thus, these findings leave the field with a clear theoretically based mediational model for which there is some evidence; yet there also seems to be a direct path from parental representations to infant attachment that is not accounted for by parenting: the perplexing "transmission gap" (van IJzendoorn, 1995). Understanding how these influences on infant attachment work (Figure 2.1, paths *a* and *c*) is important both to researchers interested in intergenerational transmission and to interveners interested in change.

Methodology of the First Year Project

In June 2002, a group of researchers and clinicians with both basic science and intervention interests set out to examine the model depicted in Figure 2.1, focusing first on gaining a better understanding of the ways that maternal behavior, and maternal sensitivity in particular, predicts infant attachment (Figure 2.1, path *c*). One line of thinking about why the research evidence for the link between maternal sensitivity and infant attachment is so modest relates to measurement of sensitivity. We set out with the belief that as particularly experienced observers steeped for years in attachment research we could improve this measurement of sensitivity.

So far, we have observed 18 infant–mother dyads (approximately one per month) who are control-group participants in a larger study of

irritable firstborn infants from lower-middle-income families in the Washington, DC, area. Fourteen of the 18 infants (78%) are racial or ethnic minority group members. Newborn irritability was assessed with Brazelton's (1973) Neonatal Behavioral Assessment Scale during the infant's first few weeks of life. We use this sample as a matter of convenience: the larger study from which participants are drawn provides much available data. We do not know the ways in which the temperamental, economic, ethnic, and cultural characteristics of the sample influence what we observe. Patterns in the data might well differ in another sample. In fact, there is evidence that the connections between maternal behavior and infant attachment are generally weaker in low-socioeconomic-status families (De Wolff & van IJzendoorn, 1997).

Our working procedure is as follows: Each month, each team member works independently, blind to any information about the mother or her infant. Each of us reviews videotapes made during the infant's first year and makes written assessments of maternal behavior, infant behavior, and dyadic interaction. We view videotapes made of infants and mothers in two contexts: the home and the laboratory. Our first observations occur during a 1-hour laboratory visit when infants are 4.5 months old. During the visit, infants and mothers participate in a series of standard interaction and temperament tasks. Tasks are designed, in collaboration with Dr. Cynthia Stifter, to tap infant response to novelty, infant response to frustration, and infant-mother social interaction. Tasks are drawn largely from the Laboratory Temperament Assessment Battery (Lab-TAB; Goldsmith & Rothbart, 1999) and include an arm-restraint task, a robot-dog approach, a still-face procedure, a dress/undress task, and a 10-minute infant-mother free-play session with toys. Mothers are told that they can do whatever they would like to do to soothe their baby if he or she becomes distressed. We also observe infants and mothers during the intervals between tasks. Our second observations occur during three 30-minute home visits made when infants are 7, 8, and 9 months old. During the home visits, mothers are asked to go about their normal daily routine, and, as much as possible, to ignore the noninteracting female videotaper. Visits typically include such activities as feeding the infant, bathing and dressing the infant, cooking, playing, folding laundry, talking on the telephone, and watching television.

After repeated viewings of all videotapes, team members make independent assessments of maternal sensitivity and predictions about the infant's attachment classification. Team members base their assessments of maternal sensitivity on Ainsworth's conceptualization of sensitivity, including sensitivity-insensitivity to the baby's signals and communications (accuracy of perception of cues, as well as appropriateness and

promptness of response), acceptance–rejection of the baby, cooperation–interference with the baby’s autonomy, and maternal accessibility–ignoring behaviors (Ainsworth et al., 1978). Team members do not *quantitatively* code the mothers’ behavior on each of these dimensions of sensitivity, but they do *qualitatively* track the mothers’ interactive behavior with the infant over time with respect to these dimensions of sensitivity. Written notes describe in qualitative terms the nature of the interaction and the team members’ inferences of what the baby might be feeling and learning about the mother and the self during these interactions with the mother.

Team members make predictions about each infant’s expected attachment classification based on an overall assessment of the degree of sensitivity the baby experienced with the mother, as well as the type of learning experiences the infant can be inferred to have had, given the mother’s behavior and the messages communicated in her behavior. We base our predictions on the operating assumption that the baby senses how the mother feels when he or she explores and when his or her attachment system is activated, and that we will see the baby’s behavioral response to these maternal feelings in subsequent attachment assessments (i.e., in the Strange Situation). The mother can be viewed as nonconsciously “training” the baby in the first year to refrain from behavior that makes her uncomfortable (i.e., teaching the baby to cooperate with her). The mother may indicate preferences to the baby such as “Don’t need me” or “Don’t get too far away from me” or “Don’t get upset.” We look for indications of this training. This training that the mother nonconsciously provides the child through her behavioral and emotional reactions to her baby is thought to build the child’s working model of attachment, and thus lays the foundation for the expectations the child has concerning his or her relationship with the mother. Our goal is to use our qualitative understanding of the mother’s interaction with the baby to predict, first, what the infant is learning from the mother and, second, how the infant is likely to behave in the Strange Situation based on what he or she has learned over time from the mother.

Only after making attachment classification predictions do we read the mother’s Adult Attachment Interview (AAI; George, Kaplan, & Main [1984/1985/1996] conducted at the 4.5-month laboratory visit). We next view the 12- and 18-month Strange Situation assessments of infant attachment security that have been coded by separate blind coders. We then meet for a 2-hour discussion of each dyad. Clearly, this procedure is very slow and labor-intensive.

After engaging in this procedure with the first 18 cases, we used our qualitative notes about the mothers’ behavior to classify each mother as

either globally sensitive or globally insensitive. We did not believe that mothers needed to be perfectly sensitive and attuned to their infants in order to be categorized as sensitive. Our categorization of mothers as sensitive or insensitive reflected the behavior that characterized the mother the majority of the time. Thus, a mother could show considerable insensitivity yet be placed in the sensitive group if sensitivity predominated. Qualitative notes on the mothers in the sensitive group indicated notable insensitivity.

We remain in the early stages of this project, and our comments are based on very few babies. We underscore the speculative nature of this initial thinking.

Preliminary Observations

Even though we are in the very early stages of the project, we have learned much from our initial cases. Table 2.1 shows the connection between maternal sensitivity classification and infant 12-month attachment classification. Of the nine infants who were classified as insecure at 12 months, five were classified as avoidant, three as disorganized-avoidant, and one as disorganized-ambivalent. Attachment classification at 12 months was selected because we wanted to observe the attachment assessment closest in time to the observed mother-baby interactions (which occurred between 4.5 and 9 months).

The labeling of so few mothers as sensitive was unexpected, given the rather moderate level of sensitivity required for assignment to the sensitive group. We draw no conclusions about the frequency of maternal sensitivity in the larger sample based on these few cases. This proportion may change as we observe more dyads. We note that the proportion of babies classified as secure at 12 months (50%) is consistent with that found in comparable samples (Spieker & Booth, 1988). Moreover, the 67% match of sensitive/secure and insensitive/insecure indicates that

TABLE 2.1. Cross-Tabulation of Maternal Sensitivity by Infant Security

Maternal sensitivity	Security classification	
	Secure	Insecure
	a	b
Sensitive	(<i>n</i> = 3)	(<i>n</i> = 0)
	c	d
Insensitive	(<i>n</i> = 6)	(<i>n</i> = 9)

even in this small sample a connection between maternal sensitivity and infant attachment does emerge.

Attachment theory's prediction that sensitive mothering contributes to attachment security and insensitive mothering contributes to attachment insecurity (Ainsworth, 1982; Bowlby, 1988) would be represented in the schematic of Table 2.1 by cells a and d. Yet the moderate effect size for the connection between sensitivity and security ($r = .24$, corresponding to $d = 0.50$) reported in the De Wolff and van IJzendoorn meta-analysis (1997) would suggest that some dyads must fall in cells b and/or c. One might reasonably expect that the cases that fail to support theoretically predicted patterns would fall equally into cell b and cell c—with some sensitive mothers having insecure babies and some insensitive mothers having secure babies.

Observations from our initial set of 18 dyads, however, reveal that with the use of a dichotomous measure of global sensitivity, the error of prediction results because of the presence of mothers who behave insensitively but who nonetheless have babies who are securely attached to them (i.e., dyads who fall into cell c of Table 2.1). We did not observe any cases of sensitive mothers with insecurely attached babies (Table 2.1, cell b). Certainly, some researchers may find dyads in which mothers who obtain high scores on sensitivity have insecurely attached infants. We wondered if it may be these mothers (those in Table 2.1, cell b) who could account for some of the true error of measurement of sensitivity. In our sample, we observed some mothers who for a 10-minute free-play segment in the lab received relatively high sensitivity scores for that segment. These mothers might play with their infants in a fairly nurturing, nonintrusive way. Yet when we examined maternal behavior across all the contexts that we had, both in the home and in the lab, clear shortcomings in the mothers of babies who became insecure were evident, particularly in response to the infants' distress. For example, one mother would have received at least moderately high scores on sensitivity if we had only examined the 10-minute free-play period, during which time the play included a pleasant shared game of rolling a ball back and forth. However, in other segments of the lab and home visits, the mother was observed responding with frightening behavior to her infant's distress or bids for closeness. Thus, we have observed at firsthand that it is difficult to use a single observational context with confidence that a mother's caregiving capacities are fully captured. The De Wolff and van IJzendoorn (1997) meta-analysis found that simply increasing the amount of time during which observations of sensitivity were made did not improve the capacity to predict infant attachment from maternal sensitivity, and likewise that it did not matter whether observations were made in the lab or in the home. Our observations led us to agree that it is not

enough to simply watch the mother and baby for longer periods of time. Rather, observation of the mother and infant across a variety of situations in both the home and the lab, including opportunities to view mothers' responses both to distress and exploration, provided a fuller picture of the mothers' caregiving repertoire than did observations of any single segment or situational context.

There is much consensus among our team members that, even though measurement of sensitivity is a complex issue, the placement of dyads into cell c of Table 2.1 is unlikely to be accounted for by incorrect measurement of sensitivity. Though our dichotomous classification of mothers as sensitive or insensitive was based on a rough estimate of the degree to which sensitivity versus insensitivity predominated in the mother's behavior toward her baby, it was evident that some mothers of secure infants behave in ways that observers using a wide range of coding perspectives would consider notably insensitive. We all found it difficult to imagine how, if attachment theory's core tenets are correct, the mother of a securely attached baby could behave in such insensitive ways. We now believe that mothers of securely attached babies can, in fact, behave with striking insensitivity. We were surprised by our findings, which prompted considerable discussion about how much insensitivity can precede infant security.

Our preliminary observations lead us to believe that the baby can tolerate some maternal insensitivity and nonetheless be secure when two conditions are met. First, something else (positive) must be happening within the relationship. In our research meetings, we continue to grapple with identifying this positive interactive component. Our current focus is on the way that the mother communicates a fundamental willingness to serve as a secure base. This thinking is discussed in the following section of this chapter. Second, our observations suggest that certain negative behaviors must not be present: frightening behavior, extremely cold and hostile behavior, or consistent interference with the infant's attempts to self-soothe. Any mother who exhibited these behaviors had an infant who was insecurely attached to her.

Our observations have led us to adjust our thinking to believe that although sensitivity is important, insensitivity as typically measured is not antithetical to security. In sum, we now believe that global sensitivity as typically measured may never be found to be more than moderately linked to security, and may not account for the connection between maternal representations and infant security. We agree with the conclusions that Pederson and his colleagues (1998) reached following their own study of maternal sensitivity and attachment: "The results of the present study . . . suggest that further attempts to bridge the transmission gap should focus on the development of descriptions that are capable of cap-

turing aspects of the infant–mother interaction beyond those encompassed by the traditional notion of sensitivity” (p. 931).

Secure-Base Use and Secure-Base Provision

What aspects of maternal behavior, other than those encompassed by the traditional notion of sensitivity, contribute to infant attachment security and could be accounting for the connection between maternal attachment representations and infant attachment security (shown in Figure 2.1)?

We began our thinking by considering precisely what infant behaviors must be present in the Strange Situation for a classification of secure attachment: the baby has to use the mother as a secure base from which to explore. That is, on reunion, the baby must do two things. First, the baby has to approach the mother (or at least interact with her across a distance), sufficiently convinced that approach will not be rejected. This is the attachment component of what Ainsworth (Ainsworth, Bell, & Stayton, 1971) called “the attachment–exploration balance.” Second, the baby, when calm, must explore. We hypothesized that in order to be able to approach the mother on reunion and explore when calm, the baby needs to have had a set of experiences with the mother in which the baby has learned from the mother that both sides of the “attachment–exploration balance” are acceptable; that neither attachment nor exploration makes the mother exceedingly uncomfortable or tense; that both are negotiable. *Moreover, we hypothesized that maternal secure-base provision is evident when the mother is “comfortable enough” with the baby’s exploratory behavior and willing to support it, and when she is “comfortable enough” with the baby’s attachment behavior and willing to support it, so that the baby has experiences, even in the face of insensitivity, of the mother as a secure base.*

Throughout our work on the First Year Project, we have relied on observations of sensitive/insensitive maternal behavior as traditionally defined. Yet we came to wonder whether the different aspects of maternal insensitivity could be viewed as different risk factors, and we struggled to understand which of these (singly and in combination) would have the greatest impact on the development of attachment (see Thompson & Raikes, 2003, for parallel thinking in relation to a broader set of risk factors). Our observations have led us to believe that not all aspects of insensitivity are equally influential on the baby’s sense of the mother as a secure base. What we are thinking about as central to maternal secure-base provision hinges on whether, in the end, the mother’s behavior allows the infant enough satisfactory secure-base experience related to both parts of the “attachment–exploration balance” so that he or she

can move comfortably between attachment and exploration. In the remainder of this section, we provide examples of maternal secure-base provision both when the infant's attachment system is activated and when the infant's exploratory system is activated. We describe maternal behaviors that we found to be important as well as those we found to be unimportant for predicting security. We then explore the potential application of the notion of secure-base provision to the problem of a lower than expected correlation between maternal sensitivity and attachment. Later, we explain how the concepts of maternal sensitivity and secure-base provision relate to each other, and discuss the implications of infant temperament for secure-base provision.

The first pattern of maternal behavior that we speculate may relate to the infant's sense of the mother as a secure base relates to times when the infant's attachment system is activated. It appeared that an important difference between insensitive mothers whose babies became secure and insensitive mothers whose babies became insecure was that the former managed to respond to the baby's attachment behavior in the end. Even though these mothers were engaging initially in a great deal of rejecting insensitive behavior, at some point the mothers would relent and allow the baby to come in for contact if the baby persisted; the baby's needs for contact or for comfort were finally met to some degree, even if only briefly, and not wholeheartedly. It appeared to us that as long as mothers responded, in the end, to the infant's attachment behavior, even if there were many insensitive moments along the way (and with none of the negative behaviors cited earlier: frightening behavior, intense hostility, or consistent interference with the infant's attempts to self-soothe), the baby would be secure. In contrast, the mothers of insecure infants tended to be continuously rejecting, and not responsive, even in the end. We found it useful to ask: Even if the baby has to work hard, can his or her signals finally get through? Moreover, we observed a different pattern in other mothers of insecure infants who can also be considered as failing to provide the infant with secure-base experiences. These mothers showed warm responses at times, but nevertheless ultimately failed to respond to distress, thereby communicating their unwillingness to provide a secure base. For example, one mother initially offered cuddling when the baby was not in distress but offered a toy if the baby cried, communicating a willingness to engage in physical contact only as long as the child's attachment system was not activated. Another mother consistently offered soothing words while simultaneously keeping the infant held away and/or turned out from her body during intense distress such that the infant did not experience the emotional regulation that front-to-front contact would have allowed (see Haft & Slade, 1989, and Escher-Graeb & Grossmann, 1983, for similar descriptions). Thus, for both

patterns of maternal behavior, it is as if the infant pays relatively little attention to the initial maternal behavior, instead focusing more on the mother's final response to distress. In other words, a baby may discount much of what a coder might consider *insensitive*—as long as a response to activation of the attachment system comes in the end; and a baby may discount much of what a coder might consider *sensitive*—unless those behaviors serve as a response to activation of the infant's attachment system.

We also considered maternal secure-base provision when infants were exploring. We were initially struck by our observations that mothers can engage in a great deal of intrusive behavior while the baby is exploring with minimal effects on the infant's security of attachment at 12 months. We came to hypothesize that some aspects of maternal insensitivity during infant exploration are more detrimental to the infant's use of the mother as a secure base than are others. There may be a number of factors that impede mothers' ability to sensitively match their responses to their infants' needs during exploration. For example, a mother may intrude on the child's play because she wants to teach the baby, she is entranced by the toys herself, or she is concerned that the infant's mouthing of toys is unsanitary. It may be that intrusive, insensitive behavior that merely interrupts the baby's thoughts or attention and refocuses the baby on some other activity has some other negative consequences for the child, but that such behavior does not make the child believe the mother will be unavailable when needed. If this is true, the child should not develop an insecure attachment. Importantly, such reasons for intruding on infant play do not involve activation of the infant's attachment system.

Our observations led us to conclude that intrusive maternal behavior that is not followed by activation of the infant's attachment may be unrelated to attachment security. We began to speculate about whether intrusive maternal behavior that *does* result in the activation of the infant's attachment system might be related to insecurity. We note that we rarely observed examples of maternal intrusion into play that created conditions in which the child's attachment system would become activated. Because of our limited observations, the hypothesis we present concerning maternal secure-base provision while the infant is exploring is more speculative than the previous hypothesis we presented regarding maternal secure-base provision when the infant's attachment system is activated.¹ Our current hypothesis is that only when the mother's insensitive intrusion in play is an attempt to activate the infant's attachment system (i.e., when the mother is uncomfortable with the infant's attachment system not being activated) will the infant experience the mother as failing to provide a secure base during exploration. For example, the

mother may frequently gesture with outstretched hands that she is concerned that the infant is hurt (when this is not the case), show a facial expression of concern while the baby explores, and ask "What's wrong?" when the infant looks fine. Our thinking is that when a mother insensitively intrudes in this way, the infant senses the mother's wish that the infant activate his or her attachment system; interactions of this sort leave the infant little experience of the comfortable movement between attachment and exploration evident in the Strange Situation behavior of secure infants.

Secure-Base Provision: Implications for an Important Question

Our thinking about secure-base provision can address a question related to the "transmission gap" that has been vexing the field of attachment research: Why has the correlation between maternal sensitivity and attachment security been found to be lower than expected (De Wolff & van IJzendoorn, 1997)? We believe that our observations in the First Year Project can shed some light on this important question, and we propose that a focus on secure-base provision may provide a potential solution to the dilemma, producing a higher correlation with attachment security than does sensitivity.

Our observations thus far have suggested to us two reasons for possible attenuation of the correlation between maternal sensitivity and infant attachment security. First, we observed that mothers with similar sensitivity scores can have infants with different attachment classifications. As an example, consider a comparison of two cases discussed earlier. One mother was rejecting and insensitive when her infant was in distress, but finally relented, picked up the infant, and offered comfort. A second mother, on the other hand, played affectionately and sensitively with her baby until he cried, and then offered him a toy. The first infant was securely attached at 12 months, whereas the second was insecurely attached. To the extent that a coding system bases the sensitivity score on an average of the amount of matching of maternal behavior to infant cues, the system will fail to capture the difference between these two mothers. Both mothers show some sensitivity and a fair bit of insensitivity, so their average sensitivity scores would be similar. The correlation between sensitivity and attachment will thus be relatively low because although the mothers have similar sensitivity scores, the infants vary in terms of attachment security/insecurity.

If, however, the notion of secure-base provision is used instead, the differing patterns of sensitivity and insensitivity shown by the two mothers would be noted. The first mother provided a secure base because she finally allowed the infant to be comforted in response to attachment

cues. The second mother, on the other hand, though apparently sensitive at first, in the end rejected the infant's bid for attachment, and thus did not provide a secure base. Based on the secure-base framework, the infants would be expected to vary in attachment despite their mothers' similar scores on sensitivity because the infants varied on whether or not they were provided a secure base. In this case, an analysis of secure-base provision would provide better prediction of attachment security than would one based on maternal sensitivity.

A possible second reason for the relatively modest correlation between sensitivity and attachment security relates to our observation that mothers may differ on sensitivity, yet nonetheless have infants with the same attachment classification. As an example, consider two mothers whose infants were securely attached at 12 months. One mother showed high levels of sensitivity throughout all observation periods. Another mother showed high levels of insensitivity (including negative attributions about the baby, frequent refusals to respond to the baby, and roughness in handling), yet she tended to relent at times when her baby persisted and allow the baby to receive the comfort he wanted. The sensitivity scores for these mothers would be quite different, though both mothers' infants were securely attached at 12 months. Once again, the correlation between sensitivity and attachment would be low. If the notion of secure-base provision were invoked, however, an examination of both mothers' behaviors would reveal that each mother provided a secure base, at least minimally. We believe that both mothers' secure-base provision is what allowed both infants to develop a secure attachment. This example illustrates how gradations in sensitivity, though they reflect real differences in maternal behavior, can be irrelevant to the prediction of attachment security. In fact, inclusion in a correlational model of fine gradations of sensitivity that lack predictive power will reduce the strength of the association between sensitivity and attachment. The notion of secure-base provision allows us to collapse gradations of sensitivity scores based on whether mothers provided a secure base or not. In other words, we focus only on the final result (Did the mother provide a secure base?), rather than on the level of sensitivity that the mother exhibited prior to her ultimate response to the infant's attachment bids. We propose that it may be the provision of a secure base itself that predicts security, rather than the style with which the mother provides (or fails to provide) a secure base. Because some forms of sensitivity/insensitivity appear to be ignored by the baby (and thus should be ignored by coders interested in better predicting security), a framework that includes secure-base provision can help us to understand which maternal behaviors can be ignored and which behaviors are crucial for prediction.

Clarification of the relations between the notions of maternal sensi-

tivity and secure-base provision is important. Secure-base provision clearly has maternal sensitivity as its starting point: in analyzing secure-base provision, we examine the same discrete maternal behaviors considered in scoring sensitivity. We propose, however, that the notion of secure-base provision involves looking at sensitive and insensitive behaviors using an organizing filter. This organizing filter allows us to sort through the observed sensitive and insensitive behaviors in order to examine patterns of behavior, rather than taking an average of the degree of sensitivity and insensitivity. The central question that guides the application of this organizing filter has been discussed earlier, namely: Is the mother able to meet her child's needs when the attachment system is activated and is she able to allow her child to explore by refraining from attempts to activate the child's attachment system during exploration? Discrete behaviors typically considered to be sensitive or insensitive that do not bear directly on answering this question may be filtered out. These sensitive or insensitive behaviors are thus ignored when attempting to predict infant attachment security from maternal behavior. Because we are proposing that certain maternal behaviors can be ignored, it may appear that we are simply suggesting that a lower level of sensitivity will lead to security than had been expected. This is not the case. Rather, we speculate that it is the extent to which a specific pattern of sensitivity and insensitivity leads to secure-base provision that best predicts attachment security.

Our observations of variations in the extent to which the baby has to "work" to obtain a response from the mother led us to pay particular attention to the contribution of the infant. When we observe 4-month-olds in the Lab-TAB assessment tasks, we see considerable temperamental variation: robust babies, active babies, laid-back babies, frail babies, irritable babies, sociable babies. Certainly these different babies react to mothering in different ways. A converging body of research suggests no main effect of temperament on attachment security (Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990; Seifer, Schiller, Saner, Resnick, & Riordin, 1996; Sroufe, 1985; see Vaughn & Bost, 1999, for a review). There may be some temperamental characteristics that are particularly difficult to measure, just as there are aspects of maternal behavior that are difficult to measure. There may be temperamental variation in infants' capacities to continue to attempt to use the mother as a secure base when met with insensitivity. Perhaps there is a temperamental component to how much insensitivity the infant can tolerate without needing to develop a protective stance linked to insecurity. Moreover, temperament may serve as a moderator of the connection between sensitivity and security, such that maternal insensitivity is more likely to contribute to insecurity in babies with particular temperamental characteristics

(e.g., babies with poor regulatory capacities, highly reactive babies) than in other babies. Belsky, Hsieh, and Crnic (1998) found evidence for infants' differential susceptibility to rearing experiences depending upon aspects of infant temperament. We are continuing to track this temperamental variation and to consider its role, yet we remain uncertain about how it relates to attachment security. As our project continues, we keep in mind Luthar and Cicchetti's (2000) argument that consideration of the neurobiological framework within which relationships occur will have important implications for intervention.

In sum, our preliminary thinking is that the infant's perception of maternal secure-base provision may be more predictive of later infant attachment quality than discrete sensitive and insensitive maternal behaviors. We have attempted to describe how the concepts of maternal sensitivity and secure-base provision relate to each other. Our model clearly needs greater behavioral specificity; we are working to develop markers that a mother has minimally met her infant's attachment needs while we simultaneously consider infant temperamental contributions. A mother's willingness to serve as a secure base must be communicated to her baby through her behavior. When the child's attachment system is activated, does the mother understand and respond to the child's needs in a way that allows termination of attachment system activation? Is the mother at least minimally responsive to the child's bids for interaction, contact, or comfort? Does the mother refrain from behavior that might contribute to activation of the infant's attachment system when he or she is instead interested in exploring? We continue to seek ways to distinguish among mothers who are eagerly supportive in response to their child's secure-base needs, mothers who are reluctant respondents to these needs, and those who are actively blocking. There are of course many forms that reluctance and blocking can take, and we are trying to better understand these forms. Our current thinking is that even when mothers are reluctant participants in some aspects of secure-base provision, the infant will experience the mother as a secure base if the mother is eventually sufficiently responsive.

IMPLICATIONS FOR INTERVENTIONS TO ENHANCE EARLY ATTACHMENTS

What are the implications of our preliminary observations for interventions to enhance early attachments?

Our observations that infant security can emerge in the face of substantial maternal insensitivity, which mesh with the meta-analytic findings of only a moderately strong correlation between sensitivity and se-

curity (De Wolff & van IJzendoorn, 1997), lead us to wonder whether intervention directed solely at improving sensitivity, without attention to those elements crucial to secure-base provision, might be problematic, given a goal of increasing security. Intervention aimed only at increasing sensitivity may be limited either because it is unnecessary for insensitive mothers whose babies would be secure anyway, or because the intervention increases maternal sensitivity in only limited contexts. Our observations suggest that increasing mothers' sensitivity in some limited contexts may not affect their ability to provide a secure base and might not lead to greater security.

The failure of several studies to increase infants' security even when increasing maternal sensitivity (see Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003, for a review) may be better understood by considering the distinction between maternal sensitivity and secure-base provision. An intervention can be designed to train mothers to be sensitive in certain ways, in certain contexts. For example, an intervention that focuses on sensitivity during play may include teaching the mother not to be intrusive in play, to show positive affect, and to follow the baby's lead. Even if some mothers show increased sensitivity during a brief, postintervention free-play assessment, our observations suggest that such change may not affect attachment. Similarly, if the goal is to help the mother to be more sensitively responsive by picking up her crying infant, intervention may help achieve this goal, and then the mother will appear more sensitive, particularly if the sensitivity assessment focuses on responsiveness to crying. Yet if the mother's prior reluctance to pick up the baby reflects a fundamental desire to limit activation of the baby's attachment system, she will likely find other ways to limit such activation. She will signal her wish to the baby in many ways that are difficult to perceive in limited observations. She may pick up the baby yet relinquish contact before he or she is fully soothed or she may pick up the baby with tense movements that preclude calm soothing. The baby will recognize the mother's signals, the baby will know of her discomfort, and the baby's cooperation with the mother's wishes will be evident in an insecure attachment classification. Teaching the mother to engage in specific sensitive behaviors in specific contexts may be considered evidence for improved sensitivity in a postintervention assessment focused on those behaviors, yet fail to yield an increased likelihood of infant security if maternal secure-base provision is not enhanced.

When the aim of intervention is the promotion of infant security (i.e., infant use of the mother as a secure base), researchers should consider whether intervention should be aimed at helping the mother *serve* as a secure base. Such a framework has three components, and incorporates attention to both behavior and representations. First, the interven-

tion should facilitate the mother's understanding of what a secure base is, and of what her particular baby, with his or her particular temperamental style, needs from her. The mother needs observational skills not only to recognize her baby's needs, but also skills to recognize when she has successfully served as a secure base. This entails helping the mother recognize and understand the baby's needs in relation to both attachment and exploration: that comforting a distressed baby will help rather than hinder a baby's development (i.e., it will not "spoil" a baby), and that a baby thrives when allowed the pleasures of exploration without intrusive control. Moreover, helping mothers understand the *link* between attachment and exploration—that the baby's confidence in the mother's availability helps the baby explore—can also be useful. Many intervention approaches contain these important components (e.g., Cooper, Hoffman, Powell, & Marvin, Chapter 6, this volume; Egeland, Weinfield, Bosquet, & Cheng, 2000; Lieberman, Weston, & Pawl, 1991; van den Boom, 1994).

Second, the intervention should help the mother know *how* to be able to respond behaviorally. For instance, once the mother understands that calming a distressed infant is a helpful response, she needs to know how to adjust her responses to match her infant's temperament so that he or she can experience her as a secure base. Some interventions, for instance, help mothers understand that simple, slow, rhythmic movements with soft vocalizations, as opposed to boisterous jostling or vigorous attempts at distraction with toys, can be effective ways of soothing (e.g., Cooper et al., Chapter 6, this volume; van den Boom, 1994). It also can be helpful for the mother to have opportunities to practice these behaviors in the context of the intervention.

And third, the intervention should examine what stands in the way of maternal secure-base provision. Although a wide range of factors (e.g., recent maternal loss or trauma, depression/mental illness) can interfere with secure-base provision, we focus here on the mother's motivation to serve as a secure base. The mother will want to serve as a secure base only if it feels "comfortable enough," and the mother does not find the prospect so anxiety-provoking that she simply cannot respond, even though she knows it would help her baby. The intervener should explore what may be making the mother uncomfortable with responding to her infant's needs. Sometimes, of course, it is the intervener's perception, and not the mother's perception, that the mother experiences discomfort with some aspect of secure-base provision.

Attempts to help a mother feel "comfortable enough" will benefit from flexibility in the choice of approach, given that different approaches will work better with different dyads. A change in maternal be-

havior and a subsequent experience of having interactions with the infant go more smoothly may increase a mother's comfort with particular aspects of secure-base provision. Especially if a mother is unwilling to acknowledge any discomfort with secure-base provision, such a behavioral approach may be most useful. Moreover, as Egeland and his colleagues (2000) have noted, mothers whose infants offer particular challenges may be quite comfortable with accepting suggestions about changes in behavior that might help them manage these difficult situations (e.g., mothers of irritable infants; see van den Boom, 1994). Other mothers can be helped by being given the opportunity to talk about their discomfort, explore the sources of this discomfort, and discuss how this discomfort influences their behavior. To the extent that an intervention can provide a mother with some skills for real-time processing (i.e., skills for tracking her discomfort with particular aspects of secure-base provision, and for regulating her emotions so that she can provide a secure base at least some of the time), the mother's capacity for secure-base provision should be enhanced.

We do not intend to suggest that there are aspects of maternal insensitivity that uniformly should be ignored during intervention. Even if the baby discounts much insensitive maternal behavior in relation to use of the mother as a secure base, this does not mean that maternal sensitivity has no effect on the relationship, on models of self and other, or on personality development. It is easy to imagine ways in which maternal sensitivity, both when the infant's attachment system is activated and when he or she is exploring, fosters not only social and personality development, but also a variety of additional aspects of functioning such as emotion regulation and cognitive development. Certainly there is much converging evidence that maternal sensitivity plays an important role in children's lives (Belsky & Pasco Fearon, 2002; NICHD Early Child Care Research Network, 2001a, 2001b, 2002, 2004a, 2004b). Yet our observations lead us to speculate that *if the goal is promoting secure attachment, intervention should focus first on secure-base provision*. Thus, if resources are limited, some aspects of maternal behavior may be more crucial targets of intervention than others. For instance, it may be that insensitive intrusiveness during nonstressful play should be a focus of intervention principally when the intrusiveness serves to activate the infant's attachment system. Moreover, a focus on secure-base provision may help when thinking about termination plans: at a minimum, before termination, interveners may want to consider whether a mother's capacities for secure-base provision have been enhanced. If, for instance, a mother has learned to respond to activation of the infant's attachment system and to refrain from needlessly contributing to such activation

herself, and can do this most of the time, she may be able—even in the context of some insensitivity—to provide a secure base sufficient for her infant to be securely attached to her.

Attention to the mother's past attachment experiences may prove useful in some cases. Bowlby (1988) noted that therapeutic attention to the past is useful only to the extent that it helps an individual make sense of present feelings and behavior. Although therapeutic progress can be made without considering the influence of the past, it may be that when it is possible to make such links, the mother's current feelings and behavior can be set in a richer context. In relation to the influence of the past, Bowlby quoted Freud (1909): "A thing which has not been understood inevitably reappears; like an unlaidd ghost, it cannot rest until the mystery has been resolved and the spell broken." The value that arises in making links with the past may emerge in part because, at the very least, it may help improve the mother's representations of herself. Understanding the past may reduce her confusion about why she behaves as she does. With such understanding, the mother may come to feel that she behaves as she does for a reason (often, a reason that at one time made very good sense), and such knowledge may give her a coherence that in some major way can be calming and reassuring. Understanding herself, and feeling understood by the intervener, may help her better respond to her baby. Moreover, the experience of remembering and discussing with a supportive intervener the painful affect that accompanied a difficult childhood may, in turn, help increase the mother's greater empathy for her own infant (Cassidy, 2004; Fraiberg, Adelson, & Shapiro, 1974; Lieberman & Pawl, 1993).

One question that arises concerns whether exploration of past trauma may actually have a negative impact on secure-base provision, at least for a time. This is an empirical question that our observations cannot address. It is possible that exploration of maternal trauma could result in a mother's feeling less comfortable with her infant's attachment needs or less able to refrain from attempting to activate the infant's attachment system during exploration—particularly if her own attachment system is activated by the rigors of exploring the trauma. It may be necessary to titrate the intensity of intervention in order to avoid negative impact on secure-base provision.

In sum, for a baby to use the mother as a secure base, intervention should help the mother to feel "comfortable enough" as a secure base. To help the mother gain greater capacity for and comfort with serving as a secure base, it will help to (1) make sure the mother knows what is needed and knows how to respond, and (2) explore whether anything makes the mother uncomfortable about specific aspects of secure-base provision. In other words, the mother may benefit both from the provi-

sion of tools to understand her baby and from tools to understand her own response to her baby. Such a process links the mother's feelings to her behavior, in the context of the baby's needs. At least in theory, this should improve the mother's secure-base provision, which should improve the baby's secure-base use, which should be reflected in a secure attachment classification.

IMPLICATIONS FOR INTERVENTION RESEARCH

Thus far we have discussed potential implications of observations from the First Year Project for intervention with mothers and infants. Our observations also have implications for intervention research. The central question is whether interventions that target maternal secure-base provision result in greater security for infants. Other intervention research questions that so far have emerged from the First Year Project observations can be roughly categorized into three types, though there are clearly relations among these: (1) questions about how to measure secure-base provision, (2) questions concerning which components of intervention best bring about change in secure-base provision, and (3) questions about intervener factors that may have some bearing on intervention process and outcome.

Measurement of Secure-Base Provision

If the goal is to test whether an intervention that targets secure-base provision is effective in promoting security for infants, then it is important to ascertain first whether the intervention actually brings about change in secure-base provision. In order to assess whether an intervention improves mothers' secure-base provision, valid and reliable measures of secure-base provision must be developed. It will be important to develop ways of measuring maternal comfort/discomfort with allowing the infant to move as needed between exploration and attachment. Currently, researchers from several labs are working to develop methods for measuring aspects of secure-base provision. In our own lab, we are developing a system for coding mothers' secure-base provision in the context of infant distress episodes (Woodhouse, Boldebeck, & Cassidy, 2004). Also, as stated earlier, the First Year Project Working Group continues to work toward identifying behavioral indicators of secure-base provision, that is, the specific behaviors through which mothers communicate their willingness to serve as a secure base, despite other insensitive maternal behavior. A current focus of this ongoing project is to identify positive maternal behaviors that may serve as a buffer against otherwise insensi-

tive behavior. Much work remains to be done to identify quantifiable aspects of mothers' secure-base provision and to develop appropriate measures.

Intervention Components and Change in Secure-Base Provision

Which components of the intervention contribute most to change in secure-base provision? The answer to this question may vary depending on the particular dyads being served by the intervention. As discussed in the section on implications for intervention, a number of approaches may be valid ways to influence mothers' secure-base provision. The intervener may ask mothers to make behavioral changes, which then contribute to increases in mothers' comfort with both infants' exploration and attachment needs. The intervener may ask a mother to reflect upon past experiences in order to gain insight into how these experiences impact her current comfort with the baby moving as needed between exploration and attachment, and in order to help a mother to make changes based on this new understanding. The intervener may focus on helping mothers to develop greater immediate awareness about their internal experiences while mothering, and assist mothers in finding ways to regulate in-the-moment affect that bears on mothers' capacity to offer themselves as a secure base. Of course, these approaches may be integrated, and, in fact, many programs currently provide interventions using multiple levels as needed (e.g., Cooper et al., Chapter 6, this volume; Egeland et al., 2000; Lieberman et al., 1991; van den Boom, 1994). Research, however, could provide clearer guidance about decision rules that interveners could use in choosing intervention components for particular types of mother-infant dyads. Hypotheses about when and with which mothers particular components would be most useful could be tested using manualized treatments that delineate decision-making processes for selecting intervention components. As an example, research could identify cues from mothers that would indicate that a behavioral approach would be more engaging and more effective than would an insight-oriented approach (or vice versa). Guidelines about how to decide when and with which mothers to emphasize either a behavioral- or an insight-oriented approach may help to promote more effective intervention. Expert clinicians may make these decisions intuitively in the moment based on their empathy, experience, and training. Research, however, can help to codify how master clinicians make their decisions about treatment. These decision rules could then be useful in training new interveners or in the process of expanding a pilot intervention.

Another research question concerning potentially useful compo-

nents of intervention emerged from our observations that certain negative maternal behaviors were always associated with insecure attachment. Infants appeared resilient in the face of a great deal of insensitivity, except when these negative behaviors (frightening behavior, extremely cold or hostile behavior, and consistent interference with infant self-soothing) were present. Should these negative behaviors be a particular focus of intervention? If we can diminish these behaviors, will the baby be more resilient in the face of insensitivity? If so, what would be the best ways to approach changing these behaviors in a way that is not shaming to the mothers and invites their engagement in the process of change? Do we need to help mothers understand the roots of this behavior, help them understand how it might feel to the baby, or help them find other ways to cope with their own feelings that contribute to the behaviors? Several interventions attend to at least some of these negative behaviors, and view change in these areas as indications of successful intervention (e.g., Cooper et al., Chapter 6, this volume; Egeland et al., 2000; Lieberman et al., 1991). Research, however, can help to determine which approaches work best with particular mothers in changing negative behaviors. For example, it may be possible to reduce frightening behavior in some mothers without explicitly addressing the frightening behavior *per se*. With these mothers, frightening behavior may be reduced simply through increasing the mothers' empathy and comfort with their children's movement between attachment and exploration. In other cases, however, it may be important to consider nonshaming ways of addressing the frightening behavior itself and to explore the role of fright in the mothers' own lives. How does an intervener decide which approach to take with a particular mother? Research could help identify decision rules, based on cues from the mother, that allow interveners to deal most efficiently and effectively with the issue of frightening behavior in different types of mothers. These data-based decision rules could then be useful to intervention planners and trainers.

Intervener Factors and Intervention Process and Outcome

One often-neglected area of research is investigation of intervener factors that may have some bearing on intervention process and outcome. Researchers sometimes consider the professional qualifications necessary for an intervener to be effective (e.g., nurse vs. paraprofessional intervener; Olds et al., 2002). The personal qualities of the intervener, however, have rarely been considered. One notable exception from the adult attachment literature includes the work of Dozier and her colleagues (e.g., Dozier, Cue, & Barnett, 1994; Tyrrell & Dozier, 1997), who have

examined the effects of clinicians' attachment strategies on treatment. If we believe that in order to change mothers' secure-base provision we need to change how comfortable the mother is with the child's exploration and attachment behaviors, then it might make a difference how comfortable interveners are with facing the mother's emotions as she explores the experiences from her past (and present) that contribute to her discomfort. Moreover, are there ways in which the relationship with the intervener, in addition to the specific techniques employed by a particular intervention, help to foster greater secure-base provision? For example, if the intervener is comfortable enough exploring negative affect, will this capacity help mothers become comfortable enough to explore negative affect/negative past experiences that interfere with secure-base provision? Will we find different outcomes based on how comfortable interveners are with the negative emotions mothers are facing? Little intervention research has focused on intervener capacities. There are intriguing exceptions. For example, Korfmacher, Kitzman, and Olds (1998) found that mothers' ratings of intervener empathy interacted with mothers' psychological resources to predict mothers' empathy toward their own children: mothers with higher levels of psychological resources (e.g., intelligence, mental health, coping skills, and self-efficacy) were more empathic to their own children when the nurse interveners were judged as more empathic. This may be a promising area of research. Psychotherapy research has begun to consider the effects of the relationship with the therapist (Norcross, 2002) on process and outcome, but more such research in the area of infant interventions could be helpful in developing our understanding of the mother-intervener relationship and its bearing on intervention outcomes (see Berlin, O'Neal, & Brooks-Gunn, 1998).

CONCLUDING REMARKS

Our observations are based on very few mother-infant dyads. We underscore how preliminary our propositions are, and how we view our project as work in progress. In this chapter, we have outlined areas in which we need further understanding. We believe that the crux of our work now centers on identification of what aspects of maternal behavior, in the context of insensitivity, contribute to the child's use of the mother as a secure base and to a subsequent secure attachment classification. We are trying to understand what differentiates the insensitive mothers whose babies become secure from the insensitive mothers whose babies become insecure (i.e., what differentiates cells c and d in Table 2.1). Our basic propositions may change with further observations. Here, we set

forth our early observations and thinking with the hope that these might be useful to the thinking of others. Our thinking should not be viewed as containing strong conclusions.

In particular, we want to clarify that we are not suggesting that maternal sensitivity has few implications for children's development. In fact, we interpret our own observations of these 18 dyads (which reveal that 67% fall into the categories indicating an association between sensitivity and attachment) as supportive of the important role of sensitivity; our working belief, at least for economically stressed families (and this may be a crucial qualifier), is that the moderate connection between maternal sensitivity and infant attachment is not a function of measurement error but reflective of a situation in which "sensitivity plays an important but not exclusive role in the emergence of attachment security" (De Wolff & van IJzendoorn, 1997, p. 586).

The core of our current thinking boils down to this: if the goal is to have the baby use the mother as a secure base, then intervention should focus on helping the mother serve as a secure base, even in the presence of some maternal insensitivity. In 2000, Waters and Cummings, when proposing an agenda for the field in the new millennium, urged that the secure-base concept be kept "at center stage in attachment theory and research" (p. 164). We share a belief in the importance of this focus, and propose that attempts at intervention similarly may be advanced by renewed attention to the core concepts of secure-base use and secure-base provision.

ACKNOWLEDGMENTS

Motti Gini joined the First Year Project Working Group during our second year of work. Several other colleagues have participated in the group at various times: Badia Albanna, Matthew Dykas, Fatima Ramos-Marcuse, and Yair Ziv. We are grateful for all their contributions. We are also grateful to Lisa Berlin and Mark Greenberg for thoughtful and incisive comments on an earlier draft of this chapter. Support for the collection of the data used in the First Year Project came from National Institute of Mental Health Grant No. 58907 to Jude Cassidy.

NOTE

1. A further speculation: The paucity of examples of intrusiveness of the sort that contributes to activation of the infant's attachment system may relate to the fact that most of the insecure infants we observed were classified as avoidant rather than as ambivalent at 12 months. It may be ambivalent, rather than avoidant, infants whose mothers tend to intrude on play in such a way that the infant's attachment system becomes activated.

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