Infant Irritability, Mother Responsiveness, and Social Support Influences on the Security of Infant-Mother Attachment

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CROCKENBERG, SUSAN B. Infant Irritability, Mother Responsiveness, and Social Support Influences on the Security of Infant-Mother Attachment. CHILD DEVELOPMENT, 1981, 52, 857-865. This study investigates the influence of infant irritability, maternal responsiveness, and social support on the development of secure and anxious infant-mother attachments at 1 year. Infant irritability was assessed during the neonatal period using the Neonatal Behavioral Assessment Scale, maternal responsiveness to crying was measured during observations at 3 months, and social support was based on interviews also conducted at 3 months. Security of attachment measures were derived from strange-situation videotapes. Results indicate that social support is the best predictor of secure attachment, and that it is most important for mothers with irritable babies. Maternal unresponsiveness is associated with resistance during reunion episodes and appears to be a mechanism through which anxious attachment develops. Some evidence suggests that social support may mitigate the effects of unresponsive mothering by providing the infant with a responsive substitute. Results are discussed in terms of a transactional/contextual model of development.

Introduction

The quality of the infant-mother attachment has been defined in terms of the infant's ability to use the mother as a secure base from which to explore and as a comfort in times of distress (Ainsworth, Blehar, Waters, & Wall 1978; Sroufe & Waters 1977). Securely attached infants are confident of, insecurely attached infants anxious about their mothers' availability and responsiveness. These feelings of confidence and anxiety are reflected in their reactions to separation and in their interaction with the environment. Evidence is accumulating also that there are long-term effects of insecure attachments during the first year (Lieberman 1977; Matas, Arend, & Sroufe 1978; Waters, Wippman, & Sroufe 1979). In comparison with securely attached infants, those insecurely or anxiously attached are less competent and less sympathetic in interaction with their peers and less effective in eliciting and accepting help in problem-solving situations. In view of the far-reaching significance of the infant-mother attachment, the development of secure attachments is an issue of considerable theoretical and social import.

Conditions Affecting Attachment

Mother-infant interaction.—There is empirical as well as theoretical support for the view that the quality of infant-mother attachment is a product of the ongoing mother-infant interaction (Ainsworth et al. 1978). More specifically, infants with mothers responsive to their cues during the first few months and throughout the first year of life tend to develop secure attachments. Mothers of securely attached infants are more responsive to their infants' cries, hold their babies more tenderly and carefully, pace the interaction contingently during face-to-face interaction, and exhibit greater sensitivity in initiating and terminating feeding. Infants appear to learn what to expect from their world through their experiences with their primary caretaker. When those experiences include sensitivity and responsiveness to their cues, infants develop expectations that their caretakers will continue in the same fashion. Hence, their attachments are considered secure.

Despite a growing recognition that interaction is a reciprocal process involving both mother and infant (Sameroff 1975; Sander 1975), current research has focused almost ex-
clusively on the mother's behavior as the precipitating event. Little attention has been given the role infant characteristics may play either in eliciting particular patterns of interaction or in determining the effect of certain mother behaviors on subsequent development.

**Infant characteristics.**—Among others, Rutter (1979) has insisted that the infant's temperament—some organismic quality of infant functioning—affects the infant-mother attachment. If the infant is viewed as an active participant in the interaction, the infant's contribution to the evolving quality of the relationship must perforce follow. Moreover, there is evidence that infant temperamental differences are associated with the development of psychiatric disorders (Graham, Rutter, & George 1973; Thomas, Chess, & Birch 1968). Apparently the infants' characteristics either elicit maladaptive mothering (Rutter 1978) or influence the infant's response to that experience.

An issue in assessing the contribution an infant makes to the relationship arises from the rapid changes that occur during infancy due to maturation and interaction. Thus, it makes sense to examine infant characteristics neonatally and independently of the mother. The Neonatal Behavioral Assessment Scale (NBAS) (Brazelton 1973) provides such an opportunity.

One recent study (Waters, Vaughn, & Egeland 1980) administered the NBAS to 100 economically disadvantaged infants who were subsequently observed in the Ainsworth and Wittig (1969) strange-situation procedure at 1 year. Infants later classified as insecurely attached/resistant had shown signs of unresponsiveness, motor immaturity, and problems with physiological regulation. The researchers note that while these infant characteristics may not directly cause the anxious attachment, they may influence the mother and thereby the attachment relationship.

**Social context.**—Just as the infant's contribution to his own development must be viewed in conjunction with his mother's behavior, both occur in a broader social context (Bronfenbrenner 1979). While the context may be defined at a variety of levels, the most immediate contextual variable is the person's social support network, those people who engage in activities and exchanges of an affective and/or material nature with the individual (Cochran & Brassard 1979; Lewis & Weinraub 1976). Evidence links the adequacy of social support to amelioration of developmental crises and to the attenuation of stress effects (Gottlieb, Note 1) including the stressful life event of childbirth. Nuckolls, Cassel, and Kaplan (1972) related measures of stress to complications in pregnancy. The results revealed that for women with high levels of stress, support from kin and marital solidarity were associated with lower complication rates. Similarly, Gottlieb and Carveth (Note 2) reported that social support in the form of frequent contacts with their spouses and physicians was the strongest predictor of low perceived stress of mothers during the first several weeks of life at home with a newborn.

It is reasonable, then, to propose that availability of social support will facilitate responsive mothering, particularly under stressful conditions, and thereby encourage secure infant-mother attachment. As Cochran and Brassard (1979) point out, however, the network may also affect the child directly, through the contact of the child with members of the network.

In summary, the quality of the infant-mother attachment appears to evolve through the transaction of mother and infant within the immediate social context. This study examines the effect of infant characteristics and mother behavior on the development of secure infant-mother attachment, and it assesses the influence of the mother's social support on her responsiveness to her baby and on the child's subsequent attachment. Assuming that an irritable infant constitutes a stress for the mother, the hypothesis is that social support will be most related to secure attachment for irritable infants.

**Method**

Forty-six Caucasian and two Asian-American mothers and infants participated in the study during the first year of their child's life. All of the mothers had completed high school, 29 had 2 years of college or more. When they joined the study, all families were intact, with fathers either employed or attending college (N = 4). One-half of the families, excluding the four student families, were middle class as indicated by their placement in the first, sec-

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1 Of an original 56 infant-mother pairs, seven moved prior to 12 months and one strange-situation videotape was considered unscorable. The remaining 48 mothers agreed to participate in the collection of attachment data.
ond, and third levels of Hollingshead's (1965) occupational code, the remaining one-half were working class as indicated by their placement in the fourth, fifth, sixth, or seventh levels.

There were 31 firstborn and 17 second-born infants (25 males and 23 females). All were carried to term, above the tenth percentile for gestational growth, with no physical anomalies. There were 44 vaginal and four C-section deliveries. All mothers and infants were in good physical condition when they left the hospital and thus were considered low risk.

**Procedures**

**Neonatal Behavioral Assessment Examination (NBAS).**—Instructions for administering and scoring the exam were followed exactly as described in Brazelton (1973), except that the pinprick aversive stimulus was eliminated, thereby reducing the maximum rating to 8 for two irritability items. The assessments were made in the infant's homes on the fifth and tenth days following birth. Scores from the peak of excitement, rapidity of buildup, and irritability items were combined in an irritability cluster identified by Kaye (1978) and averaged across the two administrations. For dichotomous analyses, infants whose irritability scores were 6.00 or greater were considered high irritable; those with scores below 6.00 were considered low irritable. An infant whose average score was 6.00 or greater was, at the minimum, consistently above the median score of 5 (4.5 on the rapidity of buildup and irritability items) for all irritability items over both administrations.

**Mother-infant observations.**—Four-hour home visits, including approximately 38 hours of observation time, were made when infants were 3 months old. A 10-sec-observe, 10-sec-record-time sampling schedule was used, with both mother and infant behavior recorded in each interval. The measure of maternal responsiveness employed in this study was the inverse of the average number of seconds before a mother responded to her infant's distress signals. For dichotomous analyses, a median split was employed. Low-responsive mothers were those below the median; high-responsive mothers were those above the median.

**Social support interview.**—At the 3-month observation mothers were interviewed about their sources of support and stress. They were asked who helped them when they needed it, who they talked to when they were concerned about the baby, and whether they felt they received as much (help/support) as they expected. If a mother did not volunteer the information, she was specifically asked about the help/support provided by husband, extended family, other children, friends and neighbors, and professionals. Mothers were asked also if they had experienced any stresses during those early months.

Social support was an assessment of the affective and material assistance experienced by the mother in her mother role, relative to the stresses experienced by her. This explicitly subjective approach was adopted on the assumption that the impact of an event depends on how that event is perceived and experienced by the individual (Bronfenbrenner 1979; Lewin 1951; Mead 1934). Low social support might have little impact on mothers with few additional stresses in their lives, while moderate social support might have a tremendous impact if it were coupled with many stresses. Thus, a relational measure of social support which reflected the functional adequacy of support to the needs of specific mothers was considered preferable to a simple measure of available support. Lowenthal, Thurner, and Chiriboga's (1975) finding that close interpersonal relationships differentiated individuals challenged or overwhelmed by multiple stresses lends credence to this approach.

Social support from three sources—father, older children in the family, and others (extended family, neighbors, friends, profession-

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2 There were no differences in security of attachment between C-section and vaginal deliveries.

3 The principal investigator and postgraduate research assistant were trained to administer the NBAS by Dr. Suzanne Dixon, University of California, San Diego Medical School. Agreement between testers was 100% within two levels, 90% within one level just prior to data collection.

4 Only one test score was included if any of the following conditions occurred: if the tester noted this was not the infant's best performance, if the mother indicated the baby's performance was atypical, if the testing conditions varied markedly from recommended conditions, or if the infant's scores on the two exams differed sharply. As a result, only one score was used for four of the 48 infants, \( x = 5.57, \text{ SD } = 1.16 \).

5 Coding categories and decision rules for the observations are available from the author.
The strange situation.—Each infant and mother were seen in the Ainsworth and Wittig (1969) strange situation near the infant’s first birthday. The procedure lasts approximately half an hour and consists of eight episodes involving the mother, the baby, and a stranger. The stranger and the mother alternately leave and return in a standard order. Each strange situation was videotaped and all ratings were based on those records. Ratings and classification procedures were based on Ainsworth et al. (1978) and Sroufe and Waters (1977). Proximity seeking, contact maintaining, avoidance, and resistance to the mother and crying during the reunion episodes (5 and 8) were rated. Each infant was assigned to one of three attachment categories: securely attached, anxiously attached/avoidant, anxiously attached/resistant. Reliability was established using tapes provided by Waters (Note 3). Ratings of proximity seeking, contact maintaining, resistance, and avoidance in the reunion episodes corresponded with those of Waters in 74%–94% of the ratings, mean agreement = .83. Subsequent reliability between an experienced rater and each of two independent raters was 85% and 87%, respectively, based on the scoring of the reunion episodes in five pilot tapes. Agreement was 100% for the A, B, and C classifications on those tapes. One of the two raters scored all tapes; questions were resolved by consensus between raters on 24 of the tapes.

Using this procedure, 71% (34) of the infants were classified as securely attached, 10% (5) as anxiously attached/avoidant, and 19% (9) as anxiously attached/resistant.

Results

To assess the relative contribution of infant temperament, maternal responsiveness, and social support to attachment measures, hierarchical multiple-regression analyses were employed. Parity was entered first as a potential covariate, followed by neonatal irritability. Maternal responsiveness and social support were then entered in two orders: with responsiveness preceding social support and vice versa, with support preceding responsiveness.

Table 1 presents the intercorrelations of predictor variables. Neonatal irritability was associated with second born status and with responsiveness. Support and responsiveness were uncorrelated, although that relationship approached significance. Table 2 presents the intercorrelations of outcome attachment measures. Consistent with theoretical expectations and previous research, proximity seeking and contact maintaining correlated positively with each other, negatively with avoidance and positively with resistance and crying. Resistance and avoidance were themselves uncorrelated, and correlated differently with crying. In view of the high correlations between certain variables and considering their conceptual similarity, only proximity seeking, resistance, and avoidance were subsequently analyzed.

<table>
<thead>
<tr>
<th>Parity</th>
<th>Irritability</th>
<th>Responsiveness</th>
<th>Social support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.28*</td>
<td>.03</td>
<td>-.05</td>
</tr>
<tr>
<td>Irritability</td>
<td>-.29*</td>
<td></td>
<td>-.07</td>
</tr>
<tr>
<td>Responsiveness</td>
<td></td>
<td>-.25</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 presents the results of the hierarchical multiple regressions (analyses of partial variance) for the selected attachment measures. Social support significantly predicted both avoidance and resistance after maternal responsiveness was extracted from the equations. Mothers with high social support had less resistant, less avoidant babies. In contrast, maternal responsiveness predicted proximity seeking, predicted resistance only when it was extracted prior to social support, and failed to predict avoidance. Responsive mothers had babies who showed less proximity seeking and less resistance.

Separate hierarchical regressions were then calculated for those infants high and low in irritability to investigate the specific question of whether low support would have a greater impact on high irritable infants. The results of those analyses are presented in table 4. Low social support was associated with high resistance and high avoidance only for high irritable infants.

**Security of Attachment**

The relationships between the predictor variables and security of attachment were also investigated. Table 5 presents the frequencies of secure and insecure infants in each irritability/support subgroup. Only the relationship between social support and security of attachment was significant, χ²(1) = 9.04, p = .003, as 11 of the 14 anxious infants came from families with low social support. Subsequent analyses indicated that low social support was associated with anxious attachment only in the high irritable group, χ²(1) = 10.59, p = .001, and that high irritability was associated with anxious attachment only for the low social support group, Fisher's exact test, p = .01. Similarly, in examining the relationship between maternal

### TABLE 2

**INTERCORRELATIONS OF INFANT ATTACHMENT BEHAVIORS IN THE REUNION EPISODES**

<table>
<thead>
<tr>
<th></th>
<th>Contact Maintaining</th>
<th>Resistance</th>
<th>Avoidance</th>
<th>Crying</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity seeking</td>
<td>.69***</td>
<td>.29*</td>
<td>-.37**</td>
<td>.41**</td>
</tr>
<tr>
<td>Contact maintaining</td>
<td>.50***</td>
<td>-.53***</td>
<td>.60***</td>
<td></td>
</tr>
<tr>
<td>Resistance</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
<td></td>
<td></td>
<td>-.24*</td>
</tr>
</tbody>
</table>

* p < .05.
** p < .01.
*** p < .001.

### TABLE 3

**PREDICTORS OF INFANT ATTACHMENT BEHAVIORS IN THE REUNION EPISODES**

<table>
<thead>
<tr>
<th>PREDICTORS</th>
<th>df</th>
<th>Resistance</th>
<th>p</th>
<th>F</th>
<th>Avoidance</th>
<th>p</th>
<th>F</th>
<th>Proximity Seeking</th>
<th>p</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Parity</td>
<td>1,46</td>
<td>.00</td>
<td>.10</td>
<td>.24</td>
<td>2.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: Irritability</td>
<td>1,45</td>
<td>.01</td>
<td>.11</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: ResponsivenessAB</td>
<td>1,44</td>
<td>-.30*</td>
<td>4.39</td>
<td>.19</td>
<td>1.65</td>
<td>-.43***</td>
<td>9.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ResponsivenessABD</td>
<td>1,43</td>
<td>-.22</td>
<td>2.20</td>
<td>.28</td>
<td>3.57</td>
<td>-.45***</td>
<td>10.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: SupportAB</td>
<td>1,44</td>
<td>-.37***</td>
<td>7.19</td>
<td>-.24</td>
<td>2.76</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SupportABC</td>
<td>1,43</td>
<td>-.32*</td>
<td>4.82</td>
<td>-.31*</td>
<td>4.70</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>4,43</td>
<td>.43</td>
<td>2.41</td>
<td>.39</td>
<td>1.89</td>
<td>.50**</td>
<td>3.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.**—Significance levels are based on the F value for that variable at entry. Subline letters indicate partialed variables.

* p < .05.
** p < .025.
*** p < .01.
**** p < .005.

7 Eighty percent of the avoidant babies were in the high irritable group, 73% of the resistant babies were in the high irritable group.
TABLE 4
PREDICTORS OF INFANT ATTACHMENT BEHAVIORS FOR HIGH AND LOW IRRITABILITY GROUPS

<table>
<thead>
<tr>
<th>PREDICTOR VARIABLES</th>
<th>df</th>
<th>Resistance</th>
<th>Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>p</td>
<td>F</td>
</tr>
<tr>
<td>High irritability:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>1,22</td>
<td>.08</td>
<td>.44*</td>
</tr>
<tr>
<td>B:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness_A</td>
<td>1,21</td>
<td>-.30</td>
<td>2.12</td>
</tr>
<tr>
<td>Responsiveness_AC</td>
<td>1,20</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>C:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support_A</td>
<td>1,21</td>
<td>-.51**</td>
<td>7.32</td>
</tr>
<tr>
<td>Social support_AB</td>
<td>1,20</td>
<td>-.43*</td>
<td>4.63</td>
</tr>
<tr>
<td>R</td>
<td>3,20</td>
<td>.52</td>
<td>2.42</td>
</tr>
<tr>
<td>Low irritability:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>1,22</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>B:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness_A</td>
<td>1,21</td>
<td>-.31</td>
<td>2.17</td>
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<tr>
<td>Responsiveness_AC</td>
<td>1,20</td>
<td>-.30</td>
<td>1.95</td>
</tr>
<tr>
<td>C:</td>
<td></td>
<td></td>
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<tr>
<td>Social support_A</td>
<td>1,20</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>Social support_AB</td>
<td>1,20</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>3,20</td>
<td>.38</td>
<td>1.10</td>
</tr>
</tbody>
</table>

Note.—Significance levels are based on the F value for that variable at entry. Subline letters indicate partialled variables.

* p < .05.
** p < .025.

TABLE 5
FREQUENCY OF SECURELY AND INSECURELY ATTACHED INFANTS IN SOCIAL SUPPORT/IRRITABILITY SUBGROUPS

<table>
<thead>
<tr>
<th></th>
<th>High Irritability</th>
<th>Low Irritability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Support</td>
<td>High Support</td>
</tr>
<tr>
<td>Securely attached</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Anxiously attached*</td>
<td>9</td>
<td>1</td>
</tr>
</tbody>
</table>

* Ten of the anxiously attached infants are male, four are female.

Responsiveness and security of attachment, it was again found that the two were related only when social support was also low, \( \chi^2(1) = 5.24, p = .02 \). Of the 11 anxiously attached infants in the low support group, 10 had unresponsive mothers.

Discussion

The adequacy of the mother’s social support is clearly and consistently associated with the security of the infant-mother attachment. Low social support was associated with high resistance, high avoidance, and with anxious attachment. Moreover, that support had its strongest effect on the irritable babies and their mothers suggests that the availability of social support is particularly critical when the family is under particular stress. This is consistent with the Nuckolls et al. (1972) and Gottlieb and Carveth (Note 2) studies cited earlier, and with Vaughn, Egeland, Sroufe and Waters's (1979) finding that shifts from secure to anxious attachment were associated with high stress in the mother's life. The apparent impact of support and stress on infants and mothers suggests again the necessity of considering the social context when attempts are made to understand development (Bronfenbrenner 1979).

It is noteworthy in contrast that less irritable infants appear somewhat impervious to the low support environments which disrupt the development of their more irritable peers. Like Rutter’s (1978) temperamentally easy children who escaped the flak in discordant and quarrelsome homes, the easy babies in this study were unlikely to develop insecure attachments even when potentially unfavorable social milieus existed.

What accounts for their apparent invulnerability? Was maternal behavior toward the
child unaffected by the lack of social support, or did the less irritable children simply exhibit different, more developmentally appropriate reactions to unresponsive mothering? Some of both seems to have occurred. Four low-irritable infants in the low support group had unresponsive mothers, yet they achieved secure attachments. Apparently these infants were unaffected by their mothers' behavior by virtue of their own easy temperaments. One may speculate that when those mothers finally did respond to their infants' distress signals, the infants were able to reorganize quickly (as evidenced by the rapid calming of initially low irritable infants [Crockenberg & Smith, Note 4]) and to reenter an alert state more conducive to interaction (Dunn 1977).

The other low support mothers were moderately responsive to their less irritable infants. It is tempting to conclude, therefore, that those children simply did not bear the brunt of their mother's lack of social support. There is no doubt that these mothers felt stressed. One mother was frantic caring for an injured husband and feeding a sick cat with an eyedropper, yet she managed to respond appropriately to her baby. Possibly the mothers were "super-copers," exceptionally mature women who experienced stress but did not allow their feelings to affect their mothering. Alternately, the low irritability of the infants may have buffered them against a potentially inhospitable environment. Because they were easygoing they demanded little of their mothers. They cried infrequently and calmed quickly during the early months. It may have been easier for these stressed women to mother appropriately because appropriate mothering required relatively little.

Beyond the question of the infant's contribution to her own invulnerability, the process by which social support affects development is also at issue. As Cochran and Brassard (1979) have indicated, social networks may affect a child directly, or indirectly through the mediating influence of the parent. It makes intuitive sense that mothers with social support are less harried, feel less overwhelmed, have fewer competing demands on their time, and as a consequence are more available to their babies. The link between a mother's support and her responsiveness to her infant is also congruent with a general theory of altruistic behavior which posits that one is more aware of and responsive to the needs of others when one's own needs are met (Berkowitz 1972; Hoffman 1976). Findings from this study support the view that social support affects security of attachment in part through a mother's unresponsiveness: (1) The negative correlation between responsiveness and resistance is no longer significant when support is partialled prior to responsiveness; and (2) 10 of the 11 anxiously attached infants in the low support group also had unresponsive mothers. When these data are considered in conjunction with the nonsignificant correlation between support and responsiveness, it seems unlikely that a general unresponsiveness to others elicited the low support, although this possibility remains to be investigated.

Social support may have had a direct impact on the infants also. Not only did support continue to significantly predict resistance and avoidance after responsiveness was extracted from the regression, but maternal unresponsiveness was associated with anxious attachment only when support was low. Support available to the mothers in this study was frequently available to the babies as well. Grandparents provided mothers with emotional support and eager babysitters; they provided their grandchildren with doting care. In some cases grandparents were considerably more responsive than were the babies' own mothers, leading several mothers to complain that the grandparents were spoiling their children. Similarly, fathers were sometimes especially responsive to their infants. One mother described her husband as the "softie" since he couldn't bear to let the baby cry. Occasionally it was an older sibling who adopted the nurturing role toward the baby. Like children buffered from the effects of a psychologically disturbed mother through strong, positive relationships with their father (Hetherington, Cox, & Cox 1979) or from family strife and instability through the continuity and support of grandparents (Werner & Smith, Note 5), the infants with unresponsive mothers may have been buffered by exceptionally involved grandparents, fathers, and even siblings.

The possibility that responsiveness in a person other than the mother facilitates security in the strange situation raises additional theoretical and methodological issues, however. Why should an infant feel secure with an unresponsive mother simply because another caretaker who is not present is responsive? Can we assume that an infant's security in the strange situation reflects or is generalized from that other secure attachment? An explanation of such cases may lie in the intensity of a child's attachment to another.
attachment to his mother. If the attachment is low in intensity, separation in the strange situation may fail to elicit distress and that situation may therefore constitute an inappropriate context for assessing the quality of attachment. This explanation is consistent with: (1) The view that security of attachment must be inferred from behavior in a context that activates the security system (Sroufe & Waters 1977); and (2) the number of infants who show little or no distress at separation and relatively little interest in contact when their mothers are present. In the absence of experienced stress the infant may not exhibit the other behaviors (avoidance, depressed exploration) which would allow discrimination between a comfort that comes from security and a comfort born of psychological distance. One may speculate that the availability of an alternative, responsive caretaker allows the child to remain emotionally uninvolved with an unresponsive mother so that her unresponsiveness has little impact on the child's everyday functioning.

Worth noting is the absence of relationship between responsiveness and avoidance in contrast to the negative correlation between responsiveness and resistance. This juxtaposition of findings suggests that examination of other qualitative aspects of the mother-infant interaction may be necessary to explain the avoidant behavior exhibited by some infants (Tracy, Farish, & Bretherton, Note 6).

The transaction between infant and environment is well illustrated in the present study. Irritable infants growing up in contexts, characterized by low support for their mothers experience less responsive mothering. Under those conditions infants developed insecure attachments. Unresponsive mothering does indeed appear to be one mechanism through which a child's trust is undermined and his attachment to his mother rendered anxious. But whether a mother behaves unresponsively appears to be influenced by the infant's irritability and her attitudes (Crockenberg & Smith, Note 4) as well as by the social support available to her as a mother. Further, the impact of her unresponsiveness seems to depend similarly on the infant's irritability and on his access to someone who is responsive to his needs (social support).

In sum, although single variables predict quality of attachment, multiple indices are necessary if we are to understand the development of secure attachments and accurately identify infants at risk for later attachment difficulties. In this study, as in others (Sigman, Cohen, & Forsythe 1980; Werner & Smith, Note 5), children who are irritable or in other ways less rewarding/more demanding of their parents are at risk for later developmental difficulty only if their environments are deficient in meeting their special needs.

Reference Notes
3. Waters, E. Personal communication, July 1978.

References


Hollingshead, A. Two-factor index of social position. New Haven, Conn.: Yale Station, 1965.


