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3. Classical and contextual determinants of attachment security

Abstract

Research is reviewed that pertains to the role of maternal, infant and social-contextual influences on the development of secure vs. insecure infant-mother attachments. First, evidence pertaining to the role of maternal caregiving behavior and infant temperament is examined and it is concluded that mothering behavior is a more powerful determinant of attachment security than infant temperament. Next, evidence pertaining to maternal psychological well being, marital quality and social support is examined and it is concluded that secure attachments are fostered when mothers are psychologically healthy and feel supported, emotionally and instrumentally, by spouses and others. Finally, it is concluded that contextual influences affect attachment relationships by influencing mother-infant interaction and that single factors are less important than the accumulation of risk (or support) across contextual factors when it comes to predicting attachment security.

Introduction

Why do some children develop secure relationships with their primary caregivers whereas others do not? That is the central question to be addressed in this chapter.

Whereas Bowlby's (1944, 1958) original thinking on the roots of security /insecurity was organized around the development of serious disorders (e.g., juvenile thieves) and led to a focus upon major separations from parents early in life, it was his North American 'disciple', Mary Ainsworth, who is primarily responsible for raising the issue of origins of attachment security with regard to variation in the normal population. Central to Ainsworth's (1973) elaboration of Bowlby's theory of attachment was the proposition that a sensitive, responsive caregiver is critically important to the development of a secure as opposed to an insecure attachment bond during the opening years of life. Such a person understands the child's individual attributes, accepts his or her behavioral proclivities, and is thus capable of orchestrating harmonious interactions between self and infant, especially those involving the soothing of distress.

Not long after Ainsworth (1973) first advanced these ideas and generated data from a small, but intensively investigated sample of 26 middle-class Baltimore, mother-child dyads (Ainsworth, Blehar, Waters &Wall, 1978), a 'cottage industry' developed within the field of developmental psychology seeking to replicate - or refute - her findings. Child temperament was the major focus of those seeking to disconfirm Ainsworth's theory and evidence. For some theorists and investigators, the source of security and insecu-

rity lay not in the caregiver's ministrations, but in the constitutional attributes of the child. In the first part of this chapter I examine research on maternal and infant determinants of attachment security, contrasting evidence which highlights the role of maternal care with that which highlights the role of the infant.

As a student of Bronfenbrenner's (1979) ecological perspective on human development, it has always been obvious to me that what transpires between mother and infant, or between any members of an enduring relationship, takes place 'in context'. Moreover, because I, like Ainsworth and numerous students of attachment theory, regard the day-to-day interactions that occur between caregiver and infant as the proximate determinants of attachment security, the issue of influences upon mother-infant interaction are of central theoretical importance (Belsky, 1984; 1990). Whereas attachment theory is essentially a theory of the microprocesses of development, emphasizing the daily interactional exchanges between parent and child and the developing internal working model of the child, the ecological/social-contextual perspective draws attention to the contextual factors and processes likely to influence these micro-developmental processes. In essence, then, the ecological perspective turns what is an independent-variable in attachment theory - patterns of mother-infant interaction - into a dependent-variable, something itself to be explained. In the second part of this chapter attention moves away from proximate determinants of attachment security to more distal, contextual ones, including maternal personality, social support and marital quality.

Maternal and infant influences

I begin this review of the determinants of attachment security by considering the relative importance of characteristics of the infant (particularly his or her temperament) and the role of the mother in determining whether a child develops a secure or insecure attachment to the caregiver.

Infant temperament

The study of infant temperament and particularly its influence on infant development has been hotly contested over the years (Chess & Thomas, 1982; Sroufe, 1985). Even though few students of early development deny the impact of infant behavior or infant attributes upon infant-parent interactions, much disagreement exists regarding the role of the infant in determining whether a secure or insecure attachment bond develops between infant and caregiver. Indeed, with regard to temperament-attachment associations, there are two general schools of thought concerning the role that temperament plays in the development and assessment of individual differences in infant-mother attachment relationships.

Some contend that temperament does not directly influence the quality of attachment that develops between infant and mother, because even a difficult infant, given the 'right' care, can become secure - there being multiple pathways to security. It is recognized, nevertheless, that some infants are more difficult than others to care for in a sensitive, security-promoting manner, and that even infants with 'easy' temperaments, if provided insensitive care, can develop insecure relationships. This line of argument sug-

gests, of course, that temperament does not exert a 'main' effect in determining attachment quality (Sroufe, 1985). In my view, this is the 'classic' perspective of attachment theory as articulated by Bowlby, Ainsworth, Sroufe and others. While acknowledging the moment-to-moment impact of the baby's behavior on the moment-to-moment care he receives, the long-term course of the relationship is judged to be disproportionately influenced by the mother, as the more powerful agent in the relationship.

Even though temperament is not thought by students of attachment theory to determine whether an infant will be securely or insecurely attached, it remains possible that it shapes the 'kind' of secure or insecure attachment that develops between infant and mother. One reasonable hypothesis is that temperamentally less irritable babies, if cared for in a sensitive manner, will display secure attachments in the Strange Situation that are classified as B1 or B2 and involve limited overt distress upon separation and greeting across a distance upon reunion (e.g., smile, wave, show toy), whereas, if cared for in an insensitive manner will develop insecure-avoidant attachments. Like children classified B1B2, those classified insecure-avoidant evince little distress in the Strange Situation (Frodi & Thompson, 1985); unlike B1B2s, however, they fail to establish psychological contact upon reunion and are thus labelled avoidant. In contrast, babies characterized by high levels of irritability would be expected to display B3 or B4 type secure attachments when cared for sensitively and to develop insecure-resistant attachments when they receive insensitive care. Common to each of these relationship types is a greater susceptibility to distress upon separation (Frodi & Thompson, 1985). Belsky and Rovine's (1987) finding that one-year-olds classified in the Strange Situation as A1, A2, B1 or B2 differed from those classified as B3, B4, C1 or C2 on early indices of temperament (e.g., autonomic stability as neonates; perceived difficulty at 3 mos.) is consistent with this interpretation (see also Frodi & Thompson, 1985).

The second school of thought regarding the temperament-attachment association contends that an infant's temperament, and particularly his or her susceptibility to distress, directly affects the development of the attachment relationship via its impact upon mother-infant interaction, and is the principal determinant of behavior used to evaluate attachment security in the Strange Situation (Chess & Thomas, 1982; Kagan, 1982). The claim is advanced, moreover, that infants classified as securely attached are simply less upset by separation in the Strange Situation, whereas those infants classified as insecurely attached are simply more distressed - despite the fact that both secure *and* insecure infants display the same kinds of discrete behaviors (i.e., crying) in the Strange Situation assessment. A meta-analysis of some 18 studies provides some support for the assertion that insecurity is a direct function of an infant's proneness to distress (Goldsmith & Alansky, 1987). Resistant behavior measured in the Strange Situation (e.g., kicking legs, pushing away upon reunion) was found to be reliably, though weakly associated with proneness to distress as measured by both questionnaire and observational measures.

Somewhat consistent with such findings are more recent data that both insecure-resistant and insecure-avoidant

infants were more likely to cry than secure infants in response to pacifier withdrawal as newborns (Calkins & Fox, 1992). To be noted, though, is that assessments of infant negative reactivity when the same infants arms were restrained and when they were exposed to novel visual stimuli at five months of age did not distinguish attachment groups. Studying expression of anger and positive reactivity at eight months, Mangelsdorf and McHale (1992) also failed to chronicle an association between temperament and subsequently measured attachment security. The same is true in studies of negative reactivity by Vaughn and colleagues (1989) and Gunnar and associates (1989). To be noted, of course, is that such null findings do not preclude the possibility that the negative emotionality or temperament more generally interacts with other factors to shape attachment security. The most extensive investigation done to date on the topic of temperament/ irritability and attachment security most compellingly challenges the view that temperament directly affects attachment security. In a sample of economically at-risk families in the Netherlands, Van den Boom (1990, 1994) longitudinally followed 100 infants who scored very high on irritability on two separate neonatal examinations. Contrary to the Goldsmith and Alansky (1987) findings, more than three of every four of the distress-prone infants whose mothers received no intervention services (n=50) and who were classified as insecure were categorized as insecure-avoidant, not insecure-resistant. As Van den Boom (1990, p. 241) noted, these "data directly challenge the assumption of Chess and Thomas (1982) and Kagan (1984) who have contended that variation in security of attachment is a product of temperamental differences among babies."

Recent research from our own laboratory also poses serious problems for the notion that temperament - and especially distress proneness - is a major determinant of attachment security. Belsky, Fish, and Isabella (1991) discovered that almost 25% of their 148 subjects changed substantially in their relative level of negativity over a six month period. In fact, 11% of infants who were highly negative at 9 months scored low on negativity six months earlier, with the reverse being equally frequent (12%). This discontinuity in negative emotionality was not random. Personality and marital characteristics of both parents measured *before* their infants were born, as well as the quality of parenting observed when babies were three months of age accounted for the observed changes. Such data not only lead nicely to a consideration of the role of parenting and family ecology in fostering security, but alert us to the fact that associations between temperament and attachment such as those chronicled by Goldsmith and Alansky (1987) may themselves reflect (earlier) parental influence on temperament and attachment security rather than effects of a child's inborn constitution, as is often presumed (see Thompson, Connell & Bridges, 1988).

The role of the parent/caregiver

As noted already, central to Ainsworth's (1973) elaboration of Bowlby's (1969/ 1982) theory of attachment is the proposition that it is the day-to-day care that the mother provides the child, and particularly the sensitivity of that care, which is of critical importance to the development

of secure attachments. In this section I summarize evidence pertaining to the contribution of caregiving, first by focusing upon investigations of caregiving by mothers and then by considering research on the caregiving of nonmaternal childcare providers, including fathers.

The quality of maternal care

A critical review of the data available a decade ago led Lamb and his colleagues (1984) to conclude that the evidence pertaining to Ainsworth's (1973) proposition that the quality of mothering was the primary determinant of the child's attachment security was not particularly strong. Not only was Ainsworth's sample far from representative and particularly small (n=26), but a good deal of the other evidence in the mid 1980s could be interpreted as either consistent or inconsistent with Ainsworth's ideas regarding the role of maternal sensitivity in promoting security (for a more detailed analysis, see Belsky & Isabella, 1988). Nevertheless, as Clarke-Stewart (1988, p.51) astutely noted with regard to the evidence in question, we are "doomed to frustration...if we demand complete consistency across different studies and different measures." We should not expect exact duplication among our results, she further observed, concluding that "the problem is probably with the measure not with the hypothesis about maternal sensitivity."

Looking at the data now, it is ever more apparent that Clarke-Stewart (1988), like others, was correct about maternal sensitivity. Even though the evidence is still not perfectly uniform (see Schneider-Rosen & Rothbaum, 1993), there should be little doubt given the findings of more recent studies of the contribution of caregiving behavior. Consistent with Clarke-Stewart's appraisal, ratings of maternal sensitivity in the first year are linked to security in the Strange Situation in samples of middle-class American (Ainsworth et al., 1978; Cox, Owen, Henderson & Margand, 1992; Isabella, 1993) and German families (Grossmann, Grossmann, Spangler, Suess & Unzner, 1985), as well as economically disadvantaged, often single-parent ones (Egeland & Farber, 1984). Furthermore, security is associated with prompt responsiveness to distress (Crockenberg, 1981; Del Carmen, Pedersen, Huffman & Bryan, 1993), moderate, appropriate stimulation (Belsky, Rovine & Taylor, 1984), and interactional synchrony (Isabella, Belsky & Von Eye, 1989; Isabella & Belsky, 1991), as well as warmth, involvement, and responsiveness (Bates, Maslin & Frankel, 1985; Isabella, 1993; O'Connor, Sigman & Kasasi, 1992). In contrast, insecure-avoidant attachments are related to intrusive, excessively stimulating interactional styles and insecure-resistant attachments to an unresponsive, under involved approach to caregiving (Belsky et al., 1984; Smith & Pederson, 1988; Isabella et al., 1989; Lewis & Fiering, 1989; Malatesta, Grigoryev, Lamb, Albin & Culver, 1989). It should be noted that in addition to such associations in studies using the Strange Situation procedure, similar contemporaneous and time-lagged relations have emerged in research relying upon Waters and Deane's (1985) Q-sort measures of attachment security (Pederson et al., 1990; Moran et al., 1992).

This summary of data reported during the past decade should not be read to imply that the strength of associations be-

tween mothering and security is large. As Goldsmith and Alansky (1987) observed in their meta-analysis of 15 studies carried out between 1978 and 1987, thus excluding many more recent investigations just-cited, "the effect [of maternal interactive behavior on attachment security] that has enjoyed the confidence of most attachment researchers is not as strong as was once believed" (p.811). Nevertheless, I am aware of no study that has found high maternal sensitivity to be reliably associated with *in*secure attachment.

The modesty of the association between maternal behavior and attachment security, coupled with the logical possibility that this reliably-discerned association could be a product of the effect of infant characteristics on maternal functioning, continues to provide grounds for skeptics to question the role of maternal care in fostering security or insecurity. Fortunately, Van den Boom's (1990, 1994) aforementioned longitudinal study of 100 irritable Dutch infants from economically at-risk families puts the issue to rest. After all, as she demonstrated, experimentally enhancing maternal sensitivity led to the development of secure attachment relationships.

It is noteworthy, nevertheless, that a recent meta-analysis of a number of attachment studies which include infants or mothers with problems and disorders considered to increase the probability of insecurity are strongly consistent with Van den Boom's (1994) compelling experimental findings. An analysis of 34 clinical studies revealed maternal problems show attachment classification distributions highly divergent from the normal distribution, whereas groups with a primary identification of nonpsychiatric child problems such as prematurity and deafness show distributions that are similar to the distributions of normal samples (Van IJzendoorn, Goldberg, Kroonenberg & Frenkel, 1992, p.840). More specifically, whereas groups characterized by maternal problems such as mental illness and child maltreatment evince rates of security of 49% (clearly lower than the normative average of 67%), groups with child problems have rates of security of 66%. Consistent with the nonclinical data reviewed above, "in clinical samples, the mother appears to play a more important role than the child in shaping the quality of the infant-mother attachment relationship" (p.840).

The quality of nonmaternal care

Although attachment theory is often cast as a theory of the infant-*mother* relationship, in point of fact most attachment theorists and researchers today consider attachment to be involved in close child-*adult* relationships in general. Thus, a theoretically important question is whether the interactional processes highlighted as important to the development of secure relationships with mothers also operate in other cases. The few available studies of fathers and of nonparental caregivers indicates that this is indeed the case.

In one of two published studies of the interactional origins of infant-father attachment security, Cox and her colleagues (1992) found that men who related to their three-month olds in a more positive, sensitive, and reciprocally playful manner had infants who evinced more security in the Strange Situation with them nine months later. It is notable that

these data are strikingly similar to those reported a decade earlier by Chibucos and Kail (1981) who endeavored to measure security at age 7 1/2 months and found that infants who engaged in more proximity seeking and contact maintaining behavior and less proximity avoidance and physical resistance (i.e., infants who might be judged to be more secure) had fathers who at age 2 months were more sensitive toward, and playful with, them.

Work in the U.S. by Howes and her associates (1988) using the attachment Q-sort reveals that 12-24 month olds are more likely to score low on security to a nonparental caregiver if the caregiver frequently ignores them and when caregivers care for many children. Additional evidence from the Netherlands indicates that infants classified in the Strange Situation as securely attached to their caregivers have caregivers who provide more sensitive care (Goossens & Van IJzendoorn, 1990). In sum, then, interactional processes similar to those delineated in studies of mothering appear relevant to the development of secure relationships with others with whom the child is expected to develop a close, affectional bond.

Conclusion

When considered in its entirety, the evidence summarized in this section pertaining to maternal and infant determinants of attachment security provides compelling support for Ainsworth's (1973) extension of Bowlby's theory of attachment. Individual differences in attachment security, whether measured with the laboratory-based Strange Situation or the home-based Q-sort procedure, are systematically related to the nature of the care that an infant or toddler experiences with a particular caregiver. What makes the evidence particularly convincing is that it is both correlational and experimental in nature; longitudinal as well as cross-sectional; involves samples of so-called normal mother-child dyads as well as more clinical samples; and applies to fathers and day care providers as well as to mothers. Even though infant temperamental characteristics may contribute to the quality of interaction between caregiver and child, the evidence that such attributes are the primary determinants of attachment security is weak.

Psychological and social-contextual determinants of attachment security

Most investigations of the determinants of infant attachment security have focussed, as we have seen, upon the contribution of the infant (temperament) and of maternal behavior (sensitivity, maltreatment). Often in discussions of these issues, these forces of influence are pitted against one another. What has been appreciated all too rarely is that it is psychological characteristics of the mother herself, not her mothering per se, which are the appropriate contrast to infant temperament when trying to understand the origins of security and insecurity. After all, what the infant brings to the relationship is his/her temperamental characteristics which, presumably, affect interaction patterns; and what mother brings is her own psychological make up which, too, presumably, shapes the course of what transpires between she and the infant.
In the second half of the chapter which focuses upon more distal sources of influ-

ences affecting the developing attachment relationship, I consider first the role of maternal psychological attributes. After the immediate psychological context of the infant-mother relationship is examined, attention is turned to the broader context of child-parent attachment relationships, and thus to social-contextual sources of stress and support (marital relationship, social support).

Parental psychological resources/ personality

In light of the fact that the hallmark of security-producing sensitive care is considered to involve the accurate reading of, and timely and empathic responding to, the child's affective and behavioral cues so as to affirm the experience of the child, there is every reason to expect that psychological attributes of the caregiver would be related to the security of attachment that the child develops. After all, much theory and evidence suggests that a parent's psychological health and well being are related to the quality of care that she or he provides (Belsky, 1984; Belsky & Vondra, 1989; Gelfand & Teti, 1990). A review of evidence involving nonclinical samples reveals, in the main, that psychologically healthier parents are more likely to have infants who are securely attached to them than are less psychologically healthy parents.

Both cross-sectional studies (Ricks, 1985; Benn, 1986) and longitudinal investigations (in which personality is measured prior to attachment security: Belsky and Isabella, 1988) indicate that in nondisturbed populations secure attachment relationships are more likely to develop among psychologically healthier mothers than ones who might be considered psychologically less healthy. One large-sample project (n=160) found, for example, that mothers whose infants were classified as securely attached to them scored higher on a series of personality subscales measuring nurturance, understanding and autonomy and lower on ones measuring aggressiveness (Maslin & Bates, 1983) than mothers of infants classified securely attached. More recently, Del Carmen and colleagues (1993) reported that mothers who scored higher on prenatal anxiety were more likely to have infants classified as insecure at age one than those scoring lower on anxiety. It is notable that such findings are not restricted only to economically well off families, but also emerge in research on high-risk, low SES households (Jacobson & Frye, 1991).

Not all relevant investigations, however, provide evidence of the anticipated associations between personality and attachment security (Levitt, Weber & Clark, 1986; Barnett, Blignault, Holmes, Paine & Parker, 1987; Zeanah, Benoit, Barton, Regan, Hirshberg & Lipsitt, 1993). Indeed, data from our own ongoing study of families rearing toddlers show no significant relations in the case of either mothers or fathers between attachment security and four different measures of personality, as well as a composite measure scaled to reflect well being (extraversion + agreeableness + interpersonal affect - neuroticism) (Belsky, Rosenberger & Crnic, in press). Perhaps more noteworthy, however, is the fact that no evidence, to our knowledge, suggests that parents of secure infants are *less* psychologically healthy than other parents.

How do psychological characteristics of mothers come to be associated with

attachment security? Theoretically one would expect maternal attributes to influence the quality of care provided to the child the most proximate determinant of attachment security - and, thereby, the security of attachment. Perhaps the best evidence that it is the effect of maternal psychological condition on actual parenting that explains how personality/psychological-well-being factors relate to attachment security is to be found in Benn's (1985) study of nondisordered women. When a composite index of emotional integration (drawn from clinical interview ratings of competence, emotional responsivity, warmth and acceptance of motherhood) was statistically controlled, a previously discerned and significant association between maternal sensitivity and attachment security was substantially attenuated. Such data clearly supports a mediational hypothesis linking distal factors - in this case involving maternal personality -with attachment security via the more proximate mediating processes of parenting.

Contextual sources of stress and support

Although both parent and child contributions to attachment security have now been considered, an ecological perspective on this topic requires consideration of the *social context* of the infant-parent relationship. For this purpose, we turn to evidence which highlights the generally beneficial impact of social support on both psychological and physical health (e.g., Mitchell & Trickett, 1980). Of particular significance is research showing that parents who experience more social support are more psychologically healthy than parents who are relatively unsupported (Nuckolls, Cassell & Kaplan, 1972; Colletta & Gregg, 1981; Colletta, 1983). But even more important is research demonstrating that, probably as a consequence of the positive impact of social support on psychological well being, such support is positively related to parental functioning (for reviews of literature, see Belsky, 1984; Belsky & Vondra, 1989; Belsky, 1990). Such a surmise is certainly consistent with the evidence reviewed above pertaining to parental psychological resources and infant-parent attachment security. In line with the extensive literature on social support, it is likely that support from spouses, friends, relatives, and neighbors, as well as from professionals (e.g., physicians, community workers), influences infant-parent attachment security by influencing the quality of care parents provide.

The marital/partner relationship

Numerous investigations provide evidence that supportive spousal relations during the infancy and toddler years are correlated with the very kinds of parenting theorized (and found) to predict attachment security namely parenting that is warm, sensitive and responsive (for review of relevant literature, see Belsky, 1984, 1990). In view of such evidence linking marital quality with many of the same facets and features of parenting implicated in the study of the interactional origins of attachment security, there are grounds to expect lawful relations between marital functioning and infant-parent attachment security. In the main, the data gathered to date tend to support this expectation. That is, children growing up in families with better functioning marriages are more likely to establish secure

attachments to their parents than those growing up in households where spouses are less happy in their marriages. Such evidence appears in cross-sectional analyses carried out in the U.S. (Goldberg & Easterbrooks, 1984; Crnic, Greenberg & Slough, 1986; Howes & Markman, 1989; Jacobson & Frye, 1991) and in Japan (Durret, Otaki & Richards, 1984).

Perhaps more noteworthy are the findings from several longitudinal studies. In one such investigation, Howes and Markman (1989) found that wives who reported higher levels of marital satisfaction and lower levels of spousal conflict prenatally had preschoolers who scored higher on the Q-sort measure of attachment security when 1 to 3 years of age. Tracking similar middle-class families across a somewhat shorter time period, Lewis, Owen and Cox (1988) reported that one-year-old daughters (but not sons) were more likely to be securely attached to their mothers when marriages were more harmonious during pregnancy. Furthermore, marital quality declines more precipitously across the transition to parenthood in the case of infants classified as insecurely attached to their mothers (but not to their fathers) in the Strange Situation than it does in the case of infants classified as secure in their attachments to their mothers (Belsky & Isabella, 1988). Also noteworthy is Spieker's (1988; Spieker & Booth, 1988) research on high-risk mother-infant dyads which indicates that the lowest levels of spousal support measured prenatally and at three-months postpartum characterize the marriages in families in which infants develop the most insecure form of attachment relationships with their mothers, i.e., disorganized attachments.

Despite the seeming persuasiveness of all this cross-sectional and longitudinal data, it would be a mistake to selectively cite only the aforementioned research and leave the impression that all studies of marriage and attachment present such positive results. Not only is it the case that a number of investigations have discerned no direct association between some index of marital quality and infant-parent attachment security (Levitt, Weber & Clark, 1986; Teti, Nakasawa, Das & Wirth, 1991; Zeanah et al., 1993), including our ongoing toddler research, (Belsky, Rosenberger & Crnic, in press), but one study actually reports results directly contrary to those presented above. In this research on an unusual sample of upper-middle-class Japanese mothers temporarily living in the U.S. as a result of their husband's employment, higher levels of marital quality was associated with less Q-security (Nakasawa, Teti & Lamb, 1992). Although this contrary result is difficult to reconcile with the remainder of the evidence, the null findings just reported present less severe obstacles to interpretation.

In fact, two recent studies draw attention to the possibility that null findings may reflect the limits of only studying direct effects rather than the absence of a relation between marital quality and attachment security. In one important piece of work, Isabella (1994) found that even though no direct relation between marital quality (measured prenatally) and attachment security (one year) could be discerned, an indirect pathway of influence did appear to exist: Higher levels of marital quality predicted greater maternal role satisfaction at four months postpartum, which itself predicted greater maternal

sensitivity five months later and, thereby, attachment security (at age 1).

Whereas this path-analytic work of Isabella (1994) underscores an indirect - and typically unstudied - process by which marital quality might impact the infant-mother attachment bond, new work by Das-Eiden, Teti, and Corns (1993) draws attention to the need to study marital quality in context. Although Das-Eiden et al. found that higher levels of marital quality were related to higher levels of Q-security, further analyses revealed that this relation was restricted to those families in which mothers were classified as insecure on the Adult Attachment Interview. What is fascinating about these data is not only that they are consistent with other research showing that a mother with a risky developmental history is less likely to mother poorly if she has a supportive marriage (see Belsky & Pensky, 1988, for review), but they also suggest that in order to fully understand the impact of the marital relationship on the development of secure or insecure attachment bonds, additional information about the family is useful. This theme of multiple determinants is one that will be returned to in the conclusion to this chapter. For now it suffices to point out, again, that acceptance of null findings may be premature when only direct effects are examined. Developmental influences do not operate only directly; thus, there is a need to take into consideration mediational processes (e.g., via role satisfaction and mothering) and moderational ones (e.g., interactions with maternal state of mind), when considering linkages between marriage and attachment.

Social support (nonspousal)

It is not just relations with spouse or partner that are systematically related to what transpires between parents and their children. Consistent with the theorizing of Cochran and Brassard (1979), a number of investigations now provide evidence that the amount and nature of contact and support that parents, especially mothers, experience from significant others in their lives affects the way they interact with their infants (for review, see Belsky, 1990). Given the mediational process central to this chapter (i.e., social context → mother-infant interaction → attachment security), such research leads to the expectation that (nonspousal) social support should be positively associated with attachment security. In what follows, I consider both correlational and experimental evidence bearing on this issue.

Correlational evidence. Ten studies pertaining to the relation between nonspousal social support and infant-mother attachment security have been reported. Four of these provide positive evidence that support provided by someone other than a mate is related to attachment security. Three of these four investigations involve populations at some degree of risk for developing an insecure attachment. Crockenberg's (1981) research on a low-risk sample showed that low social support predicted insecure attachment only in infants who were highly irritable. Crockenberg considered an irritable infant as a stressor and thus as having an 'at-risk' status due to his temperament. Crnic, Greenberg, and Slough (1986), studying a high risk premature infant population, found that an index of total support, which included intimate,

friendship, and community support, was positively correlated with attachment security.

In Crittenden's (1985) investigation of a high-risk sample of infants with abusive and/or neglecting mothers, low social support did predict insecure attachment, but only when actual quality of maternal care (maltreatment or neglect) was not included in regression analyses. Such findings are consistent with the proposition that social support influences attachment security by influencing the quality of daily care that the mother provides. By controlling for the putative mediator of support effects, these otherwise discernible influences should attenuate, if not disappear entirely.

The final correlational investigation to be considered produced positive findings consistent with such reasoning. Upon employing path-analytic techniques, Isabella (1994) observed that although social network support (like marital quality) did not exert a direct influence on infant-mother attachment security, it did exert an indirect influence. In fact, even though social support did not directly predict maternal interactive behavior (at 9 months), which itself did directly predict attachment security (at one year), high social support significantly forecast high maternal role satisfaction and, thereby, quality of maternal care and attachment security. Thus, while the contribution of social support to attachment security was neither overwhelming nor direct, a process of influence postulated by Isabella (1994) - and consistent with the mediational-process argument developed throughout this chapter - was confirmed.

The fact that Isabella (1994) could only discern the influence of social support on attachment by examining complex mediational processes may help to account for why five other studies of both low risk (Belsky et al., in press; Crnic et al., 1986; Levitt, Weber & Clark, 1986; Belsky & Isabella, 1988; Zeanah et al., 1993) and high risk families (Spieker, 1988; Spieker & Booth, 1988) - failed to uncover a significant association between indices of social support and attachment security. After all, Isabella (1994), too, failed to discern any direct effects, clearly raising the prospect that the contribution of social support to attachment security may be more indirect than direct. In fact, in light of conflicting results across studies, as well as the fact that mediational processes may be a more appropriate venue for understanding the effects of social support on attachment security, it seems entirely inappropriate to embrace the null hypothesis of no relation between social support and infant-mother attachment.

Experimental evidence. Whatever conclusions are drawn regarding the just reviewed data linking social support and attachment security, it must be acknowledged that because of the correlational nature of the findings, the possibility cannot be discounted that effects of social support, just like effects of marital quality for that matter, might be an artifact of a third-variable, such as parental personality, which directly affects support received and attachment security (presumably via parenting). Fortunately, several experimental programs have been conducted to examine the effect of supportive services on infant-mother attachment security. Two such programs that failed to discern effects on attachment security will not be considered because differen-

tial attrition in experimental and control groups compromised the internal validity of the research (Barnard et al., 1988; Beckwith, 1988).

In the first experimental study of the effects of social support to be considered, Lyons-Ruth, Connell, and Grunebaum (1990) provided economically-disadvantaged and often-depressed mothers with weekly home visits between 9-18 months to, among many other goals, decrease social isolation from other mothers. When infants of 28 treated mothers were studied at 18 months of age in the Strange Situation and compared with 10 infants of high-risk, untreated mothers, the rate of insecurity among the control infants was 80%, whereas that for the experimental infants was much lower, 43%.

In a second social-support oriented intervention study, Jacobson and Frye (1991) randomly assigned a group of mostly uneducated and unmarried mothers-to-be using a federally-subsidized prenatal nutrition program to a treatment or control group. The intervention continued through the first postpartum year and, like Lyons-Ruth et al.'s (1990) intervention, involved a multi-dimensional service focused upon maternal and infant needs, as well as strategies for obtaining support. Rather than relying upon the Strange Situation, attachment security was assessed at 14 months with Waters and Deane's (1985) Q-sort, completed by observers blind to the experimental condition after a single 3-4 hour observation period in the home. In this study, too, it was found that infants whose mothers received extensive social support were rated more securely attached than controls on two subscales (differential responsiveness to attachment figure, attachment/exploration balance), though not on the overall security index.

The third and final intervention evaluation differed from those just described in that it offered psychotherapy to a group of mostly Spanish-speaking immigrant mothers from Mexico and Central America whose infants were evaluated as being insecure in the Strange Situation at 12 months of age (Lieberman, Weston & Pawl, 1991). Unstructured, home-based, weekly sessions lasting approximately 1½ hours were provided for a period of a year. "In attachment theory language, this intervention approach ... provide(d) the mother with a corrective attachment experience. The intervenor spoke for the mother's affective experience, addressing the legitimacy of her longings for protection and safety both when she was a child and currently as an adult, and enabled her to explore unsettling feelings of anger and ambivalence toward others..." (p.202). When randomly assigned experimental and control infants were compared on the basis of their behavior in a laboratory free-play situation (which included a separation and reunion) at 18 months, it was discovered that the experimental infants evinced less angry behavior during free play and less resistant and less avoidant behavior during reunion than control infants. Quite conceivably, this was a function of their mothers' greater empathic responsiveness and initiation of interaction. Even though no significant effects of the intervention were discerned when the Q-sort procedure was employed to evaluate attachment security at 18 months, Lieberman et al. (1991) considered it noteworthy that when Strange Situations were re-administered at 24 months, most of those experimental subjects who had been classified

as avoidant earlier now were classified as resistant or even disorganized, whereas the originally classified anxiously-attached control infants remained avoidant. Thoughtful speculation led the investigators to hypothesize that the intervention served to break down - via changes in their mothers' caretaking - the avoidant defensiveness of the infants in the experimental group, but that the full effects of such a process were not sufficiently internalized by 24 months so as to be reflected in increased rates of security in the experimental group.

Conclusion

Although the results of the various experimental studies are by no means entirely uniform, there is certainly enough data, particularly when coupled with that emanating from correlational inquiries, to indicate that social support provided to parents - either by spouse, friends, relatives, and neighbors, or by formal community services - contributes to the development of a secure attachment relationship. The specific elements of social support most likely to foster the development of a secure relationship are yet to be articulated, but there is reason to believe that the effect of support on the process of parent-infant interaction is central to the process. Not only do the findings pertaining to maternal behavior in the lab at 18 months generated by Lieberman et al. (1991) point in this direction, but so, too, do the results of the path analysis carried out by Isabella (1994).

Integration and conclusions

In the first part of the paper I discussed evidence highlighting the role of maternal care in fostering secure and insecure attachments and drew the strong conclusion that there is insufficient ground for concluding that temperament exerts a direct impact on attachment security. In the second part of this chapter, determinants of attachment suggested by an ecological perspective were examined. Central to my analysis of psychological and contextual factors was the assumption that so-called 'distal' influences - be they less distant, like personality, or more distant, like social support - exert their influence by impacting more proximal processes of parent-child interaction. This is because it is principally via the child's direct experiences with his or her caregiver that the quality of the attachment bond is presumed to take shape.

Although there was certainly ample evidence presented to highlight the role that all the factors examined play in shaping the development of a secure or insecure attachment bond, I repeatedly highlighted inconsistency in the evidence as well as more general trends. What I have not as yet done is put the many factors themselves, especially the so-called distal ones, 'in context'. By organizing the chapter around various factors, even while emphasizing mediational processes of influence, I risk leaving the impression that these sources of influence upon the parent-child relationship, and thus upon the child's attachment to his or her parent, operate in isolation. Nothing could be farther from the truth.

Indeed, theorizing by myself and others draws attention to the need to consider stresses and supports simultaneously (Belsky, 1984; Belsky & Isabella, 1988) or, in the terms of developmental psychopathology, risk and protective factors (Cicchetti, 1984; Sroufe &

Rutter, 1984). Central to both of these theoretical orientations is the assertion that risks can be balanced by strengths and, moreover, that risks of problematical developmental outcomes, including attachment insecurity, are more likely to be realized as risk factors accumulate and are not balanced by supports or compensatory factors.

Evidence consistent with this viewpoint comes from two studies carried out with colleagues (Belsky & Isabella, 1988; Belsky, Rosenberger & Crnic, in press). In each we selected a set of measures reflective of parent psychological resources (e.g., personality), child characteristics (e.g., temperament) and social-contextual support (e.g., marital quality), split them at the median, and created a 'cumulative' risk score for each family or relationship dyad. We then tested the hypothesis that as cumulative risk increased, so would rate of insecure attachment. In both studies this is exactly what we found. Families or dyads at greater risk were more likely to have infants who established insecure attachments to their parents (mother and fathers) than families at lower risk. Although in neither study did we test the mediational proposition central to this chapter, it was our inference that these findings resulted from the fact that the actual quality of parent-infant interaction varied directly as a function of cumulative risk. To the extent this is true, it should be apparent why it is my view that attachment needs to be studied 'in context', as well as why such a contextual orientation in no way violates the basic tenets of attachment theory which emphasizes quality of parental care more than the contextual conditions which characterize the lives of children, parents and families.

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