

ATTACHMENT, MATING, AND PARENTING

An Evolutionary Interpretation

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A modern evolutionary perspective emphasizing life history theory and behavioral ecology is brought to bear on the three core patterns of attachment that are identified in studies of infants and young children in the Strange Situation and adults using the Adult Attachment Interview. Mating and parenting correlates of secure/autonomous, avoidant/dismissing, and resistant/preoccupied attachment patterns are reviewed, and the argument is advanced that security evolved to promote mutually beneficial interpersonal relations and high investment parenting; that avoidant/dismissing attachment evolved to promote opportunistic interpersonal relations and low-investment parenting; and that resistant/preoccupied attachment evolved to foster "helper-at-the-nest" behavior and indirect reproduction.

KEY WORDS: Attachment security; Facultative responses; Mating; Parenting; Reproductive strategy.

Central to contemporary attachment theory are the propositions that (a) individual differences in the quality of infant-parent attachment relationships are principally determined by the quality of care provided to the child (i.e., maternal sensitivity) (Ainsworth 1973) and (b) early security (or insecurity) shapes later development, such that insecure "patterns compromise the capacity for dealing with subsequent developmental

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issues, especially those surrounding intimate social relationships and parenting" (Sroufe 1988:25). Although debate continues among developmental psychologists regarding the influence of early temperament on the development of attachment security (e.g., Fox 1995; van den Boom 1995) and the degree to which continuity in development should be attributed to continuity in context rather than to early experience (Sroufe 1988), there has been little discussion of *why* variation in care experience should influence patterns of attachment or *why* patterns of attachment established in the opening years of life (though not necessarily restricted to the first year) should be causally related to later social and emotional functioning. This is not to say that important questions about *how* these developmental processes operate have not been addressed. After all, caregiver sensitivity has been singled out as the explanation of how secure and insecure patterns develop, and Bowlby's "internal working model" has been identified as the intra-psychic mechanism linking early and later development (for review, see Belsky and Cassidy 1994).

In contrast to questions of "how" that pertain to the mechanics or processes of development, "why" questions address ultimate or evolutionary functions. Thus, in the case of individual differences in the security of infant-parent attachment relationships, we can ask two core theoretical questions: (1) Why should the quality of caregiving (i.e., maternal sensitivity) influence attachment security? And, (2) why should early development shape later development (at the level of individual differences)? In fact, why should it not simply be that patterns of attachment are completely temperamentally determined and inherited? And why should it not be that patterns of attachment established in the early years of life have no bearing whatsoever upon social and emotional functioning later in development?

The central focus of this paper is upon the three core patterns of attachment identified using (a) the emotionally stressful Strange Situation procedure, which subjects the infant and young child to repeated separations from the mother in an unfamiliar laboratory while exposing him to an unfamiliar adult (secure, insecure-avoidant, insecure-resistant); (b) the emotionally demanding Adult Attachment Interview, which focuses upon recollections of child rearing in the family (autonomous, dismissing, preoccupied); and (c) brief paper-and-pencil measures developed by social psychologists to assess orientation toward romantic relationships. The central premise of the paper is that the re-introduction of ideas from modern evolutionary biology can advance thinking about individual differences in attachment and their sequelae by answering the two core "why" questions posed above. It seems only

appropriate to call upon evolutionary biology, as this field of thought provided one of the cornerstones upon which Bowlby (1969) initially developed his theory.

By adopting the perspectives of life history theory (Charnov 1993; Stearns 1993) and behavioral ecology (Krebs and Davies 1991), it is my purpose to develop the argument advanced (but left undeveloped) by Belsky, Steinberg, and Draper (1991:663) that "variations in attachment security . . . evolved to serve reproductive fitness goals in an ecologically sensitive manner." Central to these evolutionary vantage points are the notions that life cycles vary both across and within species for biological reasons and that environmentally induced modifications in life history traits (e.g., litter size, age of maturation, mating strategy, parental investment) tend to be reproductively strategic (i.e., optimize fitness). The latter formulation not only provides a means of resolving aspects of the nature-nurture debate, which all too often pits these two broad sources of influence against each other, but fosters thinking about environmental influences in terms of biological functions. This should prove especially beneficial in the case of phenomena that pertain to mating and parenting, as has been theorized in the case of attachment, since it is generally recognized that the more a phenomenon concerns reproduction—as mating and parenting certainly do—the more subject it has been to selection pressures. The application of a modern evolutionary perspective to attachment, especially one which emphasizes the biological function of environmental influences, also seems especially appropriate in light of evidence from the only behavior-genetic study of the three attachment patterns that these relationship styles are not substantially heritable (Ricciuti 1992).

In the remainder of this article I endeavor to answer the two "why" questions posed earlier by arguing that patterns of attachment evolved as psychological and behavioral vehicles for "translating" information about prevailing ecological conditions into a fitness-enhancing reproductive strategy (or at least did so in ancestral human environments) (see also Chisholm 1996). Virtually none of the evidence dealing with attachment and mating was available for consideration at the time Belsky et al. (1991) published their evolutionary theory of socialization. Further, this paper will neither review available evidence chronicling links between child rearing and attachment patterns (see Belsky and Cassidy 1994) nor consider the important issue of the ecological conditions that shape parenting and, thereby, attachment security (see Belsky et al. 1991; Chisholm 1996; Hill et al. 1994). Nevertheless, work on both of these topics must be considered central features of any modern evolutionary perspective on attachment.

PATTERNS OF ATTACHMENT AS (COMPONENTS OF) REPRODUCTIVE STRATEGIES

Contemporary attachment theory stipulates that not only will individuals with secure relationship histories cope with stress more successfully than those with insecure histories, but also the former will be more motivated to establish, and more skilled in maintaining, close interpersonal relationships than the latter. This leads to the prediction that harmonious and stable pair bonds (i.e., marriages) in adulthood, and sensitive and security-promoting parenting, will be fostered by a secure rather than an insecure attachment history (Belsky and Cassidy 1994). Such theoretical linking of parent-child relationship experience in infancy and childhood with patterns of mating and parenting in adulthood invites the hypothesis that the attachment system evolved as an environmentally contingent mechanism for promoting reproductive fitness in adulthood (Belsky et al. 1991; Chisholm 1996), in addition to being selected to promote safety and survival in childhood (Bowlby 1969).

In an effort to explore this proposition, I consider first the hypothesized function of a secure attachment relationship in childhood before proceeding to do the same with respect to insecure attachments of the resistant and avoidant variety. Evidence is presented linking attachment with mating and with parenting in order to situate this functional analysis in a life history and behavioral-ecological framework. It is important to recognize from the outset that the forthcoming analysis of developmental and social psychological evidence is more speculative than definitive, for a variety of reasons. Perhaps the most important reason is that virtually all the data concerning attachment and intimate relationships in adulthood (i.e., mating) comes from cross-sectional or relatively short-term longitudinal investigations. Thus, no prospective evidence is yet available linking attachment in infancy or childhood with mating processes in adulthood. Noteworthy as well is the fact that most of the pertinent data on attachment to be found in studies of mating are based upon brief questionnaires developed by social psychologists which have not yet been linked to related measurements obtained in childhood. Thus, it should not be presumed that the data to be cited demonstrate that early attachment shapes or even predicts reproductive behavior in adulthood, even though results from the available studies will be discussed in such terms for theoretical reasons.

Two basic assumptions underlie the discussion of evidence linking individual differences in attachment—however and whenever measured—with mating and parenting behavior in the forthcoming life history analysis of the evolutionary basis of variation in attachment.

Consistent with the results of several recent studies, the first working assumption is that patterns of attachment are relatively stable from the opening years of life through adolescence and young adulthood (Hamilton 1994; Waters et al. 1995; Zimmerman 1994). There is no presumption, however, of absolute stability.

The second working assumption concerns the relative stability of environmental conditions across the first 20–30 years of the human lifespan in the environments of evolutionary adaptation (EEA). The contention that patterns of attachment developing early in life represent facultative responses to caregiving conditions in the service of reproductive goals, that is, they are central components of reproductive strategies, is premised on the assumption that in many environments of evolutionary adaptation ecological conditions were relatively stable within the first two or three decades of the human lifespan. It would only be adaptive, after all, for organisms to develop reproductive orientations during their juvenile years that would not be fully expressed until adulthood if there was reasonable stability in the contexts in which humans developed. Surely it would have proved maladaptive for a reproductive strategy to be initiated on the basis of experiences during childhood if ecological conditions during childhood and during the young adult years tended to be totally unrelated. In view of the fact that we do not know how stable environmental conditions were within human lifespans in ancestral times, assumptions of relatively more or less environmental stability are necessary.

The argument will be made, and certainly not unreasonably given the contemporary world, that it is misguided to assume relative stability of ecological conditions, and further, it makes much more sense that a psychological “program” guiding reproductive strategy would have evolved to remain as open as possible until the age of maturation and even afterward. Nevertheless, caution seems called for before presuming that rates of environmental change to which we are currently subjected reflect life in the ancestral environments in which human behavior evolved. Moreover, currently unrecognized constraints on biological and psychological development could have demanded that organisms commit themselves to alternative reproductive strategies at some early point in the life cycle; obviously, this would preclude the possibility of a totally open and ever re-programmable reproductive program.

Having outlined limits of the data base to be considered, as well as some basic working assumptions, several final comments are in order before proceeding to advance evolutionary interpretations of secure, insecure-avoidant, and insecure-resistant patterns of attachment established during the first five to seven years of life—not just in the first

year—as components of facultatively developed reproductive strategies. The first is that these three core patterns are the central focus of concern principally because they have been the subject of most research and theory on attachment and mating, not because of any belief that they are the only patterns that exist in nature or that 100% of infant-parent relationships can be neatly classified in such terms. Second, even though it is presumed that parenting exerts a significant influence on attachment security, it is not assumed that this is the sole factor shaping what Bowlby (1969) referred to as the child's "internal working model" of the self, of others, and of relationships. Nor is it assumed that all children in the same family develop the same attachment pattern or that this important feature of psychological development and interpersonal style is the only thing that shapes personality and relationship functioning in adulthood. Clearly, then, when it comes to considering reproductive strategy, it would be a mistake to infer even on the basis of the arguments to follow that mating and parenting are singularly shaped by infant and child attachment security.

Secure Attachment

Upon advancing the proposition that the capacity for developing different patterns of attachment evolved as central components of facultatively induced reproductive strategies, Belsky et al. (1991) theorized that these divergent life trajectories promoted (at least in the EEA) the reproductive fitness of *both* parents and children. In the case of secure attachment, it was hypothesized that caregivers providing sensitive care were responding to ecological conditions (in their own past, as well as when rearing progeny) that indicated (or at least were perceived as indicating) that resources were reasonably abundant and would remain so for the foreseeable future. In consequence, the often unconscious goal of parents was to care for their children in a way that would foster beliefs and expectations (*a*) that the world was more benign, if not benevolent, than hostile, and (*b*) that others could be trusted because (*c*) relationships were enduring and emotionally rewarding. Belsky et al. (1991) theorized further that such views would promote in children an orientation toward and capacity for close, enduring relationships (including pair bonds) that were mutually rewarding to the individuals involved, as well as the desire and ability to invest heavily in parental care. By emphasizing parenting over mating, such a reproductive strategy was expected to increase the likelihood of childhood survival and reproduction, as well as the parenting ability of offspring, even as it delayed mating and reduced the number of children sired. In consequence, a quality-oriented strategy of mating and parenting, fostered as it would

be (at least in the EEA) by sensitive, responsive care in infancy and early childhood, would promote the reproductive fitness of both grandparent (who initially cared for the parent in a sensitive manner) and parent (who developed a secure attachment in response to sensitive responsive care during childhood).

Not surprisingly, there is no evidence linking attachment to actual reproductive fitness. Nor should we necessarily expect such evidence to emerge in contemporary society (though it might). Nevertheless, psychological and behavioral data consistent with the preceding evolutionary analysis can be found in (a) studies of the functioning in close heterosexual relationships of individuals classified as secure on the Adult Attachment Interview (AAI) or evincing higher levels of security on questionnaires developed by social psychologists to appraise attachment in close relationships and (b) findings from research on the parenting of mothers classified as autonomous (i.e., secure) on the AAI.

When it comes to work on mating and close-relationship functioning, observational research reveals that men classified as secure on the basis of their responses to questionnaires engage in more positive and supportive interactions with their spouses than do insecure men (Cohn et al. 1992b; Ewing and Pratt 1995; Kobak and Hazan 1992). Other work shows that secure women are more likely to seek emotional support and accept physical contact from their male partners in a stressful situation than insecure women (Simpson et al. 1992). One contributing factor to such behavior is likely to be that men who are secure—and who happen to be disproportionately likely to be the partners of secure women (van IJzendoorn and Brakermans-Kranenburg 1996)—provide more emotional support to their mates than do insecure men, make more reassuring comments, and display greater concern for their partner's well-being. Certainly consistent with this pattern of results are observational findings that conflict and negative affect are particularly pronounced in married couples in which both partners are insecure (Cohn et al. 1992b), whereas when both partners are secure negative interaction is least likely to be observed (Senchak and Leonard 1992).

Data from sources other than observations of couple interaction also show that lower levels of conflict, as well as more skilled ways of managing conflict, occur in relationships involving secure individuals. Consider in this regard data from O'Connor and colleagues (1995) indicating that, in contrast to insecure women, those who are secure report less marital conflict related to issues of time spent together and household division of labor (see also Owens 1993). Even more noteworthy, perhaps, is the finding that secure individuals are more likely than insecure individuals to engage in mutually focused—as opposed to self- or other-focused—strategies for managing conflict in romantic

relationships (Pistole 1989). Such a conflict management style probably accounts for why conflict occurs less often and becomes less heated when secure individuals are involved. Furthermore, these data also highlight the fact that security facilitates the development of mutually rewarding relationships.

Evidence that secure individuals evince higher levels of satisfaction when dating (Simpson 1990) and when married (Kobak and Hazan 1992; Owens 1993) is certainly consistent with this analysis. So, too, are study results showing that the heterosexual experiences of secure individuals are characterized by greater commitment to the relationship and stronger feelings of love for the partner (Owens 1993). Indeed, in the very first study of attachment security and romantic relationships, Hazan and Shaver (1987) found that secure individuals characterized their most significant love relationships as being more positive, trusting, and supportive than did individuals who were insecure.

The facts about secure individuals and their close relationships considered through this point invariably explain a related finding, namely, that romantic relationships of secure men and women are longer lasting than those of insecure people (Hazan and Shaver 1987). The most compelling evidence comes from Kirkpatrick and Davis's (1994) three-year longitudinal study of more than 300 dating couples, which found that secure males and females were most likely to have stable and satisfying relationships. But also pertinent are the results from a longitudinal study of a diverse sample of respondents to a newspaper survey indicating that those who were secure four years earlier were most likely to have married by the time of the follow-up (Kirkpatrick and Hazan 1994).

The modern evolutionary perspective on secure attachment being advanced in this paper not only anticipates that a history of security will foster the development of mutually rewarding and stable pair bonds, just as the preceding analysis suggests (but does not demonstrate), but that it will do so in the service of promoting high-investment parenting. High-investment parenting is defined for purposes of this psychological and developmental analysis as that which is sensitively responsive to the individualized needs of the child and which, thereby, fosters the development of security in the child. Two sets of data indicate that security is associated with high-investment parenting. One shows that parents (whether mothers or fathers) who are classified on the basis of the Adult Attachment Interview as autonomous-secure are particularly likely to have infants and young children who are themselves secure, as determined by their behavior in the Strange Situation (for meta-analysis, see van IJzendoorn 1995); this proves to be true even when adult attachment is measured more than a year before the child is tested, even before the child is born (Fonagy et al. 1991; Ward and Carlson 1995). The

second and related source of relevant information is evidence that mothers classified as autonomous-secure on the AAI parent in a more sensitive and responsive way than do those classified as insecure-preoccupied (i.e., resistant) or insecure-dismissing (i.e., avoidant) on the basis of their representations of their own child-rearing histories (e.g., Crowell and Feldman 1988, 1991; Haft and Slade 1989; Grossmann et al. 1988). Just as important are findings from two studies of fathers that document the same expected relation between security in adulthood and the provision of warm, supportive care (Cohn et al. 1992a; van IJzendoorn et al. 1992).

In summary, and consistent with the evolutionary interpretation of attachment being advanced, there are grounds for tentatively concluding that secure attachment in childhood may be a central component of a developing, facultative reproductive strategy selected to promote a quality vs. quantity orientation toward reproduction. By fostering the establishment and maintenance of mutually rewarding and enduring pair bonds and sensitively responsive and security-inducing parenting, security in childhood is theorized to provide a means of translating contextually significant information about the availability and predictability of resources—including parental care and attention—into a developmental strategy for promoting reproductive fitness. Whether reproductive fitness is actually enhanced in the modern world is less central to this analysis than the argument that natural selection fostered psychological and developmental processes that remain operative today because they afforded such consequences in the environments of evolutionary adaptation.

Insecure-Avoidant Attachment

Upon originally proposing as part of their evolutionary theory of socialization an alternative reproductive strategy associated with insecure attachment, Belsky et al. (1991) did not distinguish between two primary insecure patterns. Without doubt, however, the arguments they presented dealt more with insecure-avoidance than insecure-resistance. More specifically, Belsky et al. (1991) contended that limited and unpredictable resources would promote insensitive and rejecting care as part of a reproductive strategy selected to foster in offspring beliefs and expectations (*a*) that the world was an uncaring place; (*b*) that others could not be trusted; and (*c*) that relationships were not likely to be mutually rewarding or enduring. A child so “programmed” by experiences which would promote an insecure-avoidant attachment pattern, Belsky et al. (1991) further theorized, would pursue interpersonal relationships that were disproportionately self-serving, opportunistic,

and exploitative. In consequence, children who developed insecure-avoidant attachments would, later in life, mate with many partners, be involved in unstable pair bonds, and conceive many children who would be poorly cared for (i.e., limited parental investment). In other words, in pursuing a "quantity" rather than "quality" reproductive strategy, reproductive energies would be disproportionately invested in mating rather than parenting as a means of promoting reproductive fitness (see also Chisholm 1996).

Even though such a life history and behavioral-ecological perspective has not stimulated inquiry into the developmental consequences of insecure-avoidant attachment in childhood or adulthood, available data on the mating and parenting of adults classified as insecure-dismissing (i.e., avoidant) on the Adult Attachment Interview or insecure-avoidant on brief questionnaires measuring attachment in romantic relationships are quite consistent with such theorizing. The evidence to be summarized, however, does not address issues of fitness. But, as already noted, this analysis of a developmental, evolutionary psychology does not presuppose that the forces that selected the reproductive strategies under consideration are still operative, yielding the fitness consequences that it is theorized gave rise to them originally.

The first evidence to be considered pertaining to the mating of individuals with insecure-avoidant attachment is that of Brennan and Shaver (1991), indicating that such persons are more willing than others to engage in sex when strong feelings of love are lacking or in the absence of an enduring relationship. Not inconsistent with these data are findings from a four-year longitudinal study showing that avoidant individuals are most likely to have dated more than one person (Kirkpatrick and Hazan 1994). These results may themselves be a function of related evidence showing, at least among dating college students, that those with elevated avoidance scores are least committed to their relationships, least trusting of their partner, and most likely to have partners who, not unwisely it would seem, feel similarly (Simpson 1990). In view of such findings, it comes as no surprise that another group of investigators finds that college students who are avoidant in their orientation toward close relationships are most likely to experience a relationship break-up (Feeney and Noller 1992).

Previously cited work by Simpson et al. (1992) may contribute further to understanding the causes of the elevated instability of relationships in the case of avoidant individuals. In this work in which the female in a dating couple was experimentally made anxious, avoidant men were most likely to fail to support their anxious partners and avoidant women were least likely to seek partner support. Limitations in the functioning and stability of close relationships involving avoidant individuals are

probably also attributable to the fact that, in contrast to others, they engage in the more coercive and less affectionate behavior with their partners (Kunze and Shaver 1994). Quite conceivably, it is the beliefs of such individuals that romantic relationships are fictional and that true love is rare, which promotes their apparent callousness and detachment (Hazan and Shaver 1987; see also Feeney and Noller 1990). Whatever the case, it should be clear that the ways in which insecure-avoidant individuals think about and behave in close relationships, and the manner in which their mating relationships function, are clearly consistent with the proposition that such persons engage in opportunistic and self-serving, rather than mutually rewarding, relationships. One would expect, as we have seen, that such relationships would not prove to be long lived. Moreover, although they might be expected to foster early and frequent conceptions, at least in the EEA, it is unlikely that they would support high levels of parental investment.

Evidence consistent with this latter prediction comes from a variety of studies. Perhaps most noteworthy is the previously discussed meta-analysis of research linking adult attachment as measured by means of the Adult Attachment Interview and observed mothering behavior (van IJzendoorn, 1995). This work reveals that mothers classified as dismissing (i.e., avoidant) on the AAI provide less sensitively responsive care than do mothers classified as autonomous-secure. Two investigations conducted by Crowell and Feldman (1988, 1991) are especially informative. When observed in a variety of situations, dismissing mothers proved less emotionally supportive of and helpful toward their young children. Furthermore, they tended to be cold, remote, and controlling. For example, immediately before separating from their two- to four-year-olds, dismissing mothers showed the least anxiety and concern, which may well have accounted for their especially speedy departures. And when reunited with their children, these same mothers evinced the least responsiveness and affectionate behavior. It seems rather likely that because of similarly insensitive care in infancy (see Belsky and Cassidy 1994 for review) that van IJzendoorn's (1995) meta-analysis indicates that children whose mothers are classified as dismissing on the Adult Attachment Interview are more likely than would be expected on the basis of chance to themselves be classified as insecure-avoidant on the basis of their behavior in the Strange Situation.

Just as in the case of mating, available parenting data prove consistent with the reproductive strategy perspective under consideration. Not only is insecure-avoidant/dismissing attachment related to less stable, supportive, and harmonious heterosexual relations, it is associated with limited parental investment as well. Even though contemporary attachment theory offers a viable proximate explanation as to how this insecure

attachment patterns comes to be linked with such psychological and behavioral functioning in adulthood, it fails to explain why development should operate the way it is theorized—and found—to be in the first place. That is exactly what would seem to be achieved by an evolutionary interpretation of attachment patterns which underscores the *reproductive importance* of mating and parenting and conceptualizes insecure-avoidance as a central feature of an opportunistic and facultative reproductive strategy.

Insecure-Resistant Attachment

Now that I have detailed a reproductive-strategy perspective on secure and insecure-avoidant attachment patterns, and reviewed mating and parenting data consistent with it, consideration is given to the third pattern, that of insecure-resistance. In infancy and early childhood, a central feature of insecure-resistance is the tendency of the child to exaggerate the need for care and attention (Cassidy and Berlin 1995). Applying ideas drawn from Main's (1990) conditional-strategy analysis of insecure-avoidance, Cassidy and Berlin (1995) argue that the insecure-resistant child attempts to secure more and better quality care than that which has been inconsistently received (as opposed to consistently denied in the case of insecure-avoidant attachment) by whining, clinging, and seeking proximity to an excessive extent. Although the biological payoff of helpless dependency is self-evident in the case of the child, this is by no means the case *for the parent*. Like other students of attachment theory, Cassidy and Berlin (1995) contend that these parents foster the development of insecure-resistance attachment behavior. I suggest that consideration of the behavioral development of nonhuman species may provide insight into how parents benefit from fostering insecure-resistant attachment.

Many animals produce offspring that are physically or behaviorally sterile. Instead of departing home to bear and rear their own offspring, they remain and assist parents with the care of siblings. Emlen, Wrege, and Demong (1995) note that in some species of birds, direct reproduction is only delayed until a time when reproductive prospects have improved. Such seemingly nonreproductive behavior has even been observed among humans. By examining the fitness consequences of migration from Sweden in the 1800s, Clark (cited in Baker and Bellis 1995) found that even though women who stayed in the towns in which they grew up were more likely to remain childless than were those who departed, women who remained and bore children had, on average, more offspring than did the migrants. Such evidence raises the possibility that the childless women who failed to migrate became sterile

helpers to parents, siblings, and other relatives, a process of lineage reproduction that has been observed in other societies such as the Kipsigis (Borgerhoff Mulder 1992).

In the most speculative comments to be made in this evolutionary interpretation of patterns of attachment, I propose that the capacity for developing insecure-resistant attachments in response to inconsistently responsive parental care evolved as a means of fostering indirectly reproductive, "helper-at-the-nest" behavior. That is, by inducing helpless dependency in the child, the proclivity to provide inconsistently responsive parenting under particular ecological circumstances was selected because it promoted the parent's reproductive fitness by fostering a reproductive strategy designed to facilitate the direct reproductive success of kin (including, especially, parents) and, thereby, the indirect reproductive success of the insecure-resistant individual.

Even though research on insecure-resistant/preoccupied adults in close relationships is limited (owing to the relative rarity of this classification) and provides only limited support for the interpretation just advanced (for review, see Shaver and Hazan 1993), the results of one investigation are rather striking. Kuncze and Shaver (1994) found that women classified as anxious-ambivalent (i.e., resistant) on a brief assessment of attachment style in romantic relationships were most likely to endorse such items as "I can't seem to stop from 'mothering' my partner too much" on another questionnaire. Conceivably, such "compulsive caregiving" reflects the legacy of an evolved psychological orientation originally designed to ensure the care of younger sibs or other relatives. What had originally been fostered by parents in the EEA to ensure caregiving behavior by the developing child simply continues to operate in the contemporary world in relation to one's spouse.

The possibility that an insecure-resistant attachment style originally induced in infancy and early childhood could still operate in adulthood is raised by research linking the adult version of this style measured using the Adult Attachment Interview with actual maternal behavior. Findings from a number of studies indicate that insecure-preoccupied mothers "behave in ways that interfere with their child's autonomy or exploration" (Cassidy and Berlin 1995:981), thereby promoting dependency, perhaps in the service of inducing helper-at-the-nest behavior in their own offspring. Not inconsistent with this argument is evidence that mothers classified as insecure-preoccupied on the AAI are particularly sensitive to expressions of infant fear but are rather insensitive to infant initiative and exuberance during play (Haft and Slade 1989); that during the toddler years such mothers find it difficult to separate from their toddlers and behave in ways that can be expected to foster child anxiety while discouraging independence (Crowell and Feldman 1988,

1991); and that preoccupied mothers of adolescents about to leave home to attend college tend to express anxiety and doubt about the ability of their offspring to function autonomously (Kobak et al. 1994). Considered together, these findings would seem to suggest that mothers who foster insecure-resistance are endeavoring, though not necessarily consciously, to keep their children physically close while maximizing their ability to manipulate the child psychologically. Such an orientation might be just what is necessary to foster helper-at-the-nest behavior.

Were this indisputably speculative analysis correct, there would be reason to expect insecure-resistant attachment to occur more frequently in some ecological or rearing niches than in others. Firstborns and especially female firstborns might be more likely to develop such attachments, for example. But this may only occur in situations in which a mother's ability to care for her offspring is especially taxed, which could be the case were surrogate adult caregivers unavailable or mothers depressed, ill, or otherwise incapacitated. What these additional speculative comments indicate is that one should expect particular attachment patterns to emerge under specific contexts and that these conditions might vary over time within a family.

CONCLUSION

The evolutionary interpretation of patterns of attachment presented in this essay does not deny or dismiss most of the major tenets of classical attachment theory and the extensive research program it has spawned (for review, see Belsky and Cassidy 1994). Nevertheless, the central proposition of this paper—that patterns of attachment represent central features of facultatively induced reproductive strategies—extends Bowlby's original theorizing in new directions. Some developmental psychologists will surely find it hard to reconcile a modern evolutionary perspective that considers the various attachment patterns as equally adaptive in terms of promoting reproductive fitness in the ecological niches that gave rise to them with more conventional psychological views that regard security as the "optimal" pattern and insecurity as some kind of psychological maladaptation, if not pathology. It would seem, however, that the conditional-strategy perspective Main (1990) has advanced for interpreting patterns of attachment provides a foundation for the non-value-laden view by underscoring the functions that secure, insecure-avoidant, and insecure-resistant attachments may have been selected to serve. The same might be said as well of Lamb and associates (1984, 1985) and Hinde (1982; Hinde and Stevenson-Hinde 1990) given their evolutionary critiques of conventional attachment theo-

ry. By placing what has to date been principally a psychological analysis of individual differences in attachment into a modern evolutionary framework, the perspective offered in the current paper extends the thinking of Main (1990), Cassidy and Berlin (1995), and others by specifically addressing the biological challenges raised by Lamb and colleagues and by Hinde. This is achieved by focusing upon reproductive fitness, not just adaptation to the immediate caregiving environment. This leads, as I have shown, to an emphasis upon mating and parenting, core features of life history strategies that play a central role in an organism's effort to reproduce itself.

Not to be lost in this analysis is the fact that the arguments presented here have much in common with traditional attachment theory. Most significantly, rearing experience is considered by both to shape individual differences in attachment patterns. Both also subscribe to the notion that early experiences give rise to developmental trajectories that impact long-term relationship functioning as well as shorter-term psychological development.

Despite such points of convergence, real differences in orientation remain between the modern evolutionary perspective advanced in this essay and traditional attachment theory. Whereas the latter places issues of mental health and psychological well-being at center stage in its effort to understand individual differences in attachment security, the former replaces such a concern with a focus upon reproducing one's genes. It does not necessarily follow, however, that for the evolutionary interpretation of attachment to be confirmed, reproductive fitness must be associated with different patterns of attachment in the modern world. Although this could turn out to be the case, evolutionary psychologists alert us to the fact that what evolution selected were (among other things) psychological processes—and many of them—that served to foster reproductive fitness in the EEA. Because life today is so different from what it was in the EEA, the ancestral fitness consequences of evolved psychological mechanisms (like attachment) may no longer be realized. Nevertheless, the psychological processes that evolved in the service of them remain operative (Buss 1995; Cosmides and Tooby 1987). That is why consideration of genetic replication contributes to an understanding of not only why there is an attachment system—the original focus of Bowlby's evolutionary theorizing—but why the human organism may develop in such a way that juvenile patterns of attachment become systematically related to mating and parenting in adulthood.

It would probably be misguided to end a paper such as this dealing with patterns of attachment without commenting more extensively than I have upon the issues of temperament and heritability. When temperament is considered from an evolutionary perspective, especially in the

context of the analysis of parenting influences advanced in this paper, the possibility emerges that infants and children may vary, for heritable reasons, in their susceptibility to environmental influence (Belsky, 1997). It is therefore conceivable that some infants—for in-born, temperamental reasons—may be highly predisposed to develop one pattern of attachment rather than the others regardless of the care they receive, and thus enact reproductive strategies consistent with such constitutional individual differences. In contrast, other infants, perhaps even most, are instead much more responsive to rearing conditions and thus develop whatever pattern of attachment is consistent with their rearing, and then follow whatever reproductive strategy their attachment pattern (or countervailing contextual conditions) dictates.

Such variation in environmental reactivity, it would seem, might provide parents with means of “hedging their bets” in the game of life: Because nonmalleable progeny would likely fit the ecological niche in which they find themselves, at least sometime across generations, such fixed types would episodically flourish and thus remain in the gene pool. And because the more malleable types would be more able to fit more niches, reproductive success would be achieved by them sufficiently often to preserve this facultative developmental strategy in the gene pool as well. What such an analysis suggests, of course, is that arguments advanced throughout this paper which imply that all children are equally reactive to caregiving experience (in the service of reproductive goals) may be overstated. As a result, the developmental processes outlined having to do with caregiving influence may apply to some individuals more than to others.

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