PATTERNS OF NONVERBAL BEHAVIOR AND SENSITIVITY IN THE CONTEXT OF ATTACHMENT RELATIONSHIPS

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ABSTRACT: Nonverbal behavior and sensitivity to a relationship partner's nonverbal behavior importantly influence the quality of interpersonal interactions and relationships, including attachment relationships. The abilities to encode, or express, and to decode, or understand, nonverbal cues are crucial to effective communication of emotions and are associated with social adjustment and relationship satisfaction. One important social context for the development and use of nonverbal encoding and decoding abilities is what Bowlby (1969/1982, *Attachment and loss: Vol. 1. Attachment (2nd ed.).* New York: Basic Books) called attachment relationships—interpersonal relationships in which one person's emotional security depends on another person's sensitive, responsive caregiving and support. In this paper, we present theoretical ideas, review relevant research, and propose new avenues of research dealing with associations between attachment-related processes and patterns of nonverbal behavior and sensitivity in adulthood, two domains of research that have not previously been adequately connected.

KEY WORDS: attachment; caregiving; emotion; nonverbal communication; sensitivity.

Nonverbal behavior and sensitivity to a relationship partner's nonverbal messages have important effects on the quality of interpersonal interactions and relationships. The abilities to encode, or express, and to decode, or understand, nonverbal cues are crucial to the communication of emotions (e.g., Ekman, 1988; Siegman & Feldstein, 1987) and are associated with mental health, social adjustment, and relationship satisfaction (e.g., DePaulo, 1992; Noller, 1985). Encoding and decoding abilities are diverse and quite variable, being affected by social context and interac-

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tants' social roles (Snodgrass, 1985). They apply to a variety of content domains, including personal dispositions, behaviors, internal states, interpersonal intentions, self-presentational strategies, and social relations (Bernieri, 2001). Although their developmental origins have not been fully established, these abilities obviously arise in the context of close relationships and can be affected by the quality of these relationships across the life span.

One important social context for the development of nonverbal encoding and decoding abilities is what Bowlby (1969/1982) called attachment relationships—interpersonal relationships in which one person's emotional security depends on another person's sensitive, responsive support and caregiving. In this paper, we present theoretical ideas, review relevant research, and propose new avenues of research dealing with associations between attachment-related processes and patterns of nonverbal expression skills and nonverbal sensitivity in adulthood. We begin with a brief overview of attachment theory and its applications to the study of adult relationships.

Theory and Research on Attachment Processes in Adulthood

In his classic trilogy, Bowlby (1969/1982, 1973, 1980) argued that human infants are born with a repertoire of behaviors (*attachment behaviors*) designed to assure proximity to supportive others (*attachment figures*), which increases the probability that they will be protected from physical and psychological threats. Bowlby argued that these proximity-seeking behaviors are organized by an *attachment behavioral system*, which emerged over the course of evolution because it increased the likelihood of survival and reproduction on the part of primates born with immature capacities for defense. Although the attachment system is most critical during the early years of life, Bowlby (1988) claimed that it is active across the entire life span and is manifested in the seeking of support and thoughts of being loved and valued by relationship partners even during adulthood.

Bowlby (1973) also described important individual differences in attachment-system functioning that are learned during interactions with attachment figures. Interactions with attachment figures who are available and responsive in times of need promote a sense of security (expectations that key people will be available and supportive in times of need) and cause people to rely more confidently on support seeking as a distress-regulation strategy. When a person's attachment figures are not reliably

available and supportive, however, a sense of security is not attained and strategies of affect regulation other than confident proximity seeking get reinforced. These secondary strategies—called *hyperactivation* or *deactivation* of the attachment system (Cassidy & Kobak, 1988)—are the major forms of insecure attachment (Mikulincer & Shaver, 2003).

Beyond characterizing individual differences in attachment-system functioning during and following specific interactions with attachment figures, Bowlby (1973) proposed that such interactions can have enduring, long-term effects on personality development which are mediated by mental representations he called ''attachment working models.'' According to Bowlby (1982/1969), actual interactions with attachment figures are stored in memory in the form of mental representations of attachment figures' responses (*working models of others*) as well as representations of the self's efficacy and value (*working models of self*). These working models allow a person to predict future interactions with the partner and design new proximity-seeking attempts without rethinking each one from the beginning.

In studies of adolescents and adults, tests of these theoretical ideas have generally focused on a person's *attachment style*—the systematic pattern of relational expectations, emotions, and behaviors that results from a particular history of attachment experiences (Fraley & Shaver, 2000). Initially, research on adult attachment styles was based on Hazan and Shaver's (1987) three-category typology—secure, avoidant, and anxious—which was modeled on the major patterns of infant–mother attachment described by Ainsworth, Blehar, Waters, and Wall (1978). Subsequent studies revealed, however, that these styles are more appropriately conceptualized as regions in a two-dimensional space defined by attachment anxiety and attachment avoidance (e.g., Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). This two-dimensional space can be seen as forming four categories, described by Bartholomew (1990): secure (low anxiety and low avoidance), preoccupied (high anxiety and low avoidance), dismissive (low anxiety and high avoidance), and fearful (high anxiety and high avoidance). Today, adult attachment researchers (e.g., Brennan et al., 1998) are moving toward a consensus on two continuous dimensions, anxiety and avoidance, partly because they are consistently obtained in factor analyses of attachment measures and partly because Fraley and Waller (1998) showed convincingly that dimensional representations of adult attachment style are more accurate than categorical representations.

The first dimension, typically called attachment *avoidance*, reflects the extent to which a person distrusts relationship partners' goodwill and

strives to maintain self-reliance and emotional distance from partners. The second dimension, typically called attachment *anxiety*, reflects the degree to which a person worries that a partner will not be available in times of need. People who score relatively low on both dimensions are said to be secure or to have a strong sense of security. The two dimensions can be measured with reliable and valid self-report scales (e.g., Brennan et al., 1998) and are associated in theoretically predictable ways with relationship quality and adjustment (see Feeney, 1999; Shaver & Clark, 1994; Shaver & Hazan, 1993, for reviews). Throughout the remainder of this article we will refer to people with secure, anxious, or avoidant attachment styles, or people who are relatively secure, anxious, or avoidant. Although our categorical shorthand can misleadingly foster typological thinking, we will always be referring to fuzzy regions in a two-dimensional space in which people are continuously distributed.

Based on an extensive review of adult attachment research, we (Mikulincer & Shaver, 2003) proposed a three-component process model of the attachment system's operation in adulthood. The first component of the model concerns the monitoring and appraisal of threatening events and the consequent activation of the attachment system. The second component involves appraisal of the availability of attachment figures, is responsible for variations in the sense of attachment security, and therefore is important for distinguishing between securely and insecurely attached individuals. The third component concerns appraisal of the viability and therefore desirability of proximity seeking as a means of coping with attachment insecurity. It is responsible for variations in the use of hyperactivating or deactivating strategies of affect regulation, and is important for distinguishing between individuals who score high on attachment anxiety and those who score high on avoidant attachment.

Following Bowlby (1969/1982), we assume that the monitoring of events, whether they are generated internally (in imagination, in the body) or through interactions with the environment, results in activation of the attachment system when a potential or actual threat to one's sense of security is encountered. This activation is manifest in efforts to seek and/or maintain actual or symbolic proximity to external or internalized attachment figures. Once the attachment system is activated, an affirmative answer to the implicit or explicit question, ''Is an attachment figure available and likely to be responsive to my needs?'' heightens the accessibility of the sense of attachment security and promotes feelings that the world is generally a safe place, that attachment figures are generally helpful when called upon, and that it is possible to explore the environment curiously and to engage effectively with other people. When an attachment figure is

available and supportive, a person learns that acknowledgment and display of distress elicit supportive responses from others, that (given the proven availability of others to help when necessary) one's own actions are often able to reduce distress and remove obstacles, and that turning to others when threatened usually results in enhanced coping. These kinds of experiences increase both self-confidence and confidence in attachment figures' willingness and ability to provide effective support.

Perceived unavailability of an attachment figure results in attachment insecurity, which compounds the distress arising from an appraised threat. This state of insecurity forces a decision about the viability of proximity seeking as a protective strategy. When proximity seeking is appraised as viable or essential, people adopt hyperactivating attachment strategies, which include intense efforts to attain proximity to attachment figures and ensure their attention and support. This response comes about in relationships where the attachment figure is sometimes responsive but only unreliably so, placing the attached person on a partial reinforcement schedule that seems to reward persistence of energetic, strident, noisy proximity-seeking attempts, because they sometimes appear to succeed. In such cases, people compulsively seek proximity and protection, become hypersensitive to signs of possible rejection or abandonment, and are prone to ruminating on personal deficiencies and threats to relationships. These concomitants of attachment-system activation account for many of the psychological correlates of attachment anxiety (Mikulincer & Shaver, 2003).

Appraising proximity seeking as unlikely to alleviate distress results in the adoption of deactivating strategies, manifested in distancing oneself from stimuli and events that activate the attachment system. These strategies seem to develop in relationships with figures who disapprove of and punish closeness and expressions of need or vulnerability. In such relationships, an individual learns to expect better outcomes if signs of need and vulnerability are hidden or suppressed, proximity-seeking efforts are weakened or blocked, and the attachment system is deactivated despite a sense of security not being achieved. The primary goal of deactivating strategies is to keep the attachment system turned off or down-regulated to avoid frustration and distress caused by attachment-figure unavailability. This deactivation requires denying attachment needs, steering clear of closeness and interdependence in relationships, and distancing oneself from threats that can cause unwanted activation of the attachment system. These concomitants of deactivation account for the documented manifestations of avoidant attachment (Mikulincer & Shaver, 2003).

The Interface of Attachment Processes and Patterns of Nonverbal Behavior and Sensitivity

The issue of sensitive, accurate understanding of an infant's needs is at the heart of Bowlby and Ainsworth's attachment theory. These theorists used the sensitivity construct to explain how a parent's behavior shapes a child's attachment orientation, which in turn forms the basis of the child's subsequent thoughts, feelings, and behaviors in close relationships. In a meta-analysis of studies of the role of maternal sensitivity as a mediator of the association between parents' ''state of mind with respect to attachment'' (as indexed by the Adult Attachment Interview, or AAI; Hesse, 1999) and infants' attachment orientation as assessed in Ainsworth et al.'s (1978) Strange Situation procedure, van IJzendoorn (1995) found considerable evidence for the importance of parental sensitivity as a mediator. Because infants are largely preverbal, parental sensitivity must, at least in a child's early years, be conveyed nonverbally through gazing, smiling, gentle touch, soft voice, and behavioral synchrony. Even if the parents use words, which of course they do, the meanings of the words are not understood by the child, except through accompanying paralinguistic cues, facial expressions, patterns of touch, and so on. In fact, Rosenthal, Hall, DiMatteo, Rogers, and Archer (1979) reported that mothers of preverbal children scored higher on a test of nonverbal sensitivity (the Profile of Nonverbal Sensitivity, or PONS) than matched married women with no children.

Patterns of nonverbal encoding and expression of feelings, attitudes, and needs are also crucial for assessing infants' attachment styles in the Strange Situation (Ainsworth et al., 1978). In this well-known laboratory assessment procedure, attachment style is determined by systematically coding nonverbal behaviors, such as facial expressions, gestures, and movements toward or away from an attachment figure. Infants are classified as securely attached if they express nonverbal signals of comfort with their mothers, positive facial expressions, and moderate amounts of proximity seeking and physical contact. Infants are classified as avoidant if they express nonverbal signals of discomfort with their mothers and do not seek proximity or physical contact. Infants are classified as anxiously attached if they display nonverbal signs of ambivalence concerning proximity seeking—that is, crying to be picked up, clinging when picked up, but also struggling, kicking, or resisting while continuing to cry angrily and to display negative facial expressions.

In contrast to investigators of infant–parent attachment, adult attachment researchers have not paid much attention to patterns of nonverbal

behavior and sensitivity. Research using the AAI (summarized by Hesse, 1999) is based on typed interview transcripts rather than behavioral observations of adults, and research by personality-social psychologists using questionnaire measures of adult attachment has focused on other self-report measures, mental processes recorded in experimental settings, and relationship outcomes rather than nonverbal behavior (although there are important and interesting exceptions, reviewed later in the present article). Nevertheless, consideration of the primary aim of the attachment system (which Bowlby, 1969/1982, called its ''set-goal'')—proximity in the service of safety—and the strategies used to attain this goal causes us to believe that attachment-related processes in adulthood will be closely linked with nonverbal behavior.

According to Bowlby (1969/1982), proximity seeking is the natural, or primary strategy of the attachment system when a person is threatened and desires protection or support. This strategy encompasses a wide range of behaviors that accomplish the same general goal (attainment of proximity to a responsive attachment figure) and serve a similar adaptive function (protection from danger, stress, and threats). Both theory and published research suggest that this strategy also includes nonverbal behaviors that signal a person's need for support and protection, as well as heightened attention to attachment figures' nonverbal signals of availability and responsiveness. That is, it is likely that attachment behaviors also include the emission and detection of nonverbal signals. In fact, Bowlby (1969/1982) used the term ''signal'' throughout his writings on the prototypical relationship between an infant and its mother, and by using terms like ''sensitivity'' and ''sensitive responsiveness,'' he implied that accurate reception of an infant's nonverbal signals is a crucial part of competent caregiving.

The emission of distress signals in the presence of an actual or potential attachment figure should increase the likelihood that this person will serve as what Bowlby (1969/1982) called a ''safe haven'' (i.e., reliably providing protection, comfort, support, and relief in times of need) and ''secure base'' (i.e., allowing a child or adult relationship partner to pursue non-attachment goals in a safe environment) for the child. Although signal emission (e.g., gazing longingly, calling, crying, clinging) seems to be an innate output of the attachment system, it is shaped in certain ways by interactions with specific attachment figures (e.g., Cassidy, 1994; Tronick, 1989). In these interactions, a child learns how to express needs and feelings more effectively, thereby eliciting a particular partner's caregiving responses and avoiding punishing reactions from caregivers who do not like certain kinds of displays.

Bowlby (1969/1982) proposed that the attachment system operates in a ''goal-corrected'' manner. That is, a child evaluates the progress he or she is making toward achieving the set-goal of security and corrects behaviors when necessary to produce a more effective action sequence. This goal-corrected adjustment of attachment behavior requires monitoring, appraisal, and understanding of (a) the attachment figure's responses to proximity-seeking attempts and (b) the actual or potential effectiveness of the chosen behaviors in a given context. These cognitive operations require that the child attend carefully to the attachment figure's responses and be sensitive to verbal and nonverbal signals emitted by this person in response to one's proximity-seeking bids. Again, although these processes seem to be innate components of the attachment system, interactions with attachment figures offer opportunities to adapt generic forms to the idiosyncrasies of a child's care providers. Within attachment theory, this learning process is considered to be an important part of personality development (Waters, Posada, Crowell, & Lay, 1994).

Given this line of reasoning, we suspect that interactions with attachment figures are important contexts for the development of two different, though interrelated, nonverbal abilities—encoding and decoding of nonverbal cues. Whereas encoding of nonverbal cues involves an ability to emit accurate nonverbal messages about one's needs, feelings, and thoughts (e.g., Buck, 1984; DePaulo & Friedman, 1998; Notarius & Levenson, 1979), decoding of nonverbal cues, or nonverbal sensitivity, involves an ability to detect, accurately perceive, understand, and respond appropriately to another person's nonverbal expressions of needs, intentions, feelings, thoughts, and social roles (e.g., Bernieri, 2001; DePaulo & Friedman, 1998). Having focused in our research on individual differences in the functioning of the attachment system (Mikulincer & Shaver, 2003), we now hypothesize that those individual differences are manifested in the two main kinds of nonverbal skill. In particular, we propose that high-level functioning of the attachment system—i.e., being able to effectively mobilize support from an attachment figure—implies that a person (a) has learned interpretable, efficacious ways of expressing inner states and eliciting others' support, and (b) is sensitive to, and relatively accurate in, interpreting attachment figures' messages concerning availability and responsiveness.

Although these issues have not yet been extensively investigated by us or other adult-attachment researchers, there are some studies relevant to mapping connections between attachment-system functioning and the abilities to encode and decode nonverbal cues in adulthood. In the following sections we will focus on each of the three main components

of our model: (1) threat-monitoring and attachment-system activation, (2) monitoring of attachment-figure availability and security attainment, and (3) application of secondary strategies of hyperactivation and deactivation in coping with attachment insecurity. We will discuss implications and possible extensions of existing research and theory for understanding patterns of nonverbal behavior and sensitivity in hopes of stimulating future collaborative research on attachment and nonverbal communication.

Attachment-System Activation and Patterns of Nonverbal Behavior and Sensitivity

In adulthood, any experience or event perceived as threatening a person's sense of security can activate the attachment system. According to research based on our model (Mikulincer & Shaver, 2003), attachment-system activation is automatically manifested in heightened accessibility of mental representations of attachment figures; episodic memories of supportive interactions with these figures; and thoughts related to proximity and support (e.g., Mikulincer, Gillath, & Shaver, 2002). These automatically, preconsciously activated representations are a source of comfort and protection (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001), and they enable security restoration intrapsychically without necessarily causing an adult to seek physical proximity to an external attachment figure. Like Bowlby (1969/1982), however, we assume that no adult is completely free of dependence on other people. There are situations, such as physical and psychological traumas, illnesses, and losses, in which symbolic proximity to internalized figures is not sufficient to provide a sense of security, and in those situations, attachment-system activation motivates proximity-seeking behavior.

It seems likely, and is a possibility worth exploring empirically, that overt manifestations of attachment-system activation in conscious thoughts, behavioral intentions, and actual behaviors involve the emission and detection of nonverbal signals relevant to the process of proximity and support seeking. It is already generally accepted that nonverbal behavior is a major, if not the primary, vehicle for expressing emotions, conveying one's needs for support and proximity, and eliciting a partner's caregiving behavior (e.g., Andersen & Guerrero, 1998; Barbee, Rowatt, & Cunningham, 1998; Burgoon, Buller, & Woodall, 1996). Therefore, when a person's attachment system is activated by worries or threats, we should be able to observe scientifically (1) the emission of nonverbal signals

(e.g., interaction bids) indicating to a relationship partner that the threatened individual is interested in achieving, restoring, or maintaining proximity; (2) displays of negative emotion (e.g., sad or worried facial expressions) that encourage a relationship partner to provide support and comfort; (3) active approach behavior and direct physical contact, including efforts to obtain what Harlow (1959), studying nonhuman primates, called ''contact comfort''; and (4) direct or indirect requests for emotional or instrumental support (Barbee et al., 1998).

Research on nonverbal behavior has already demonstrated that nonverbal cues play an important part in causing a person to feel welcome and well supported by a relationship partner. People of all ages rely heavily on nonverbal cues when interpreting the emotional dispositions, preferences, and attitudes of a relationship partner during a support-seeking bid (e.g., Barbee et al., 1998; Jonas & Guerrero, 2001; Winstead, Derlega, Sanchez-Hucles, & Clarke, 1992). It seems likely, therefore, that people would be particularly attentive and sensitive to nonverbal signals emitted by a relationship partner during the process of seeking proximity and support from this partner.

Despite the relevance of nonverbal cues for expressing the desire for proximity and support, and for understanding a relationship partner's reactions and intentions, adult attachment researchers have not paid sufficient attention to the encoding and decoding of nonverbal signals during attachment-system activation. However, there are some relevant findings in the literature that provide hints about what could be discovered in future studies. With regard to need expression, for example, Fraley and Shaver (1998) observed nonverbal expressions of desire for proximity and support when romantic or marital partners were about to separate from each other at a metropolitan airport. Specifically, these researchers unobtrusively coded the nonverbal behavior of two kinds of couples: those who were about to separate when one got on an airplane and those who were about to board a plane together. Behaviors were coded in terms of constructs similar to those used by Ainsworth et al. (1978) to code parents' and infants' behaviors in the Strange Situation (e.g., mutual gaze, physical contact including hugging and clinging, sad facial expressions, crying). The data indicated that couple members who were about to separate exhibited much more contact-seeking and contact-maintaining behavior than couple members who were not separating.

In their theory of interactive coping, Barbee and Cunningham (1995) claimed that when people are seeking social support (which is often an indication of attachment-system activation) they tend to emit direct and indirect expressive signals aimed at activating a relationship partner's

supportive or caregiving behavior (*support activation signals*). These direct signals include expressions of distress and behaviors such as crying or pouting. Less direct signals of negative affect include sighing, sulking, or fidgeting. These expressive behaviors seem to affect a relationship partner's supportive or unsupportive responses (e.g., Barbee et al., 1998; Collins & Feeney, 2000; Yankeelov, Barbee, Cunningham, & Druen, 1995). The research conducted so far suggests that direct signals of desire for support are more effective in eliciting a partner's favorable response than indirect signals, which in some cases actually discourage a partner from providing support and cause him or her to ignore the support seeker's wishes.

Using Barbee and Cunningham's (1995) method of coding support-seeking behavior, Collins and Feeney (2000) documented an association between threat appraisal and emission of nonverbal signals of desire for support. Study participants were asked to talk with their long-term dating partner about a personal problem. The interaction was videotaped and coded by raters for the extent to which participants emitted direct and indirect nonverbal signals of support seeking. Participants were also asked to rate the degree to which they perceived the discussed problem as stressful and threatening. Collins and Feeney found that threat appraisal was a significant predictor of the expression of nonverbal signs of support seeking: The more stressful the problem, the more frequent were direct signals of the desire for support. Interestingly, threat appraisal was not significantly associated with indirect signals of support seeking. These preliminary findings may imply that activation of the attachment system following threat appraisal includes the emission of fairly effective direct signals of a desire for support. Interestingly, Collins and Feeney also found attachment-style differences in signaling the desire for support. We will review these findings in a later section of this article.

With regard to attachment-related processes and the decoding of nonverbal signals, we believe that heightened nonverbal sensitivity can be advantageous during interpersonal episodes in which a person is feeling vulnerable and his or her emotional security depends on another person's goodwill. In such situations, the ability to attend to, detect, and accurately interpret a relationship partner's nonverbal messages helps a person judge whether he or she can rely on the partner for protection, evaluate which proximity-seeking behaviors might elicit a partner's support, and defend against the partner's rejection. Some researchers (e.g., Henley, 1977; LaFrance & Henley, 1994) have suggested that people in a weak or vulnerable position tend to be more sensitive to the nonverbal signals of a more powerful relationship partner, which is reminiscent of

Bowlby's (1969/1982) description of the prototypical attachment figure as "stronger and wiser." However, Hall, Carter, and Horgan (2001) found only limited evidence for a status effect on sensitivity (defined as remembering the other's nonverbal cues), and they reached the conclusion that the effect they obtained was not motivationally driven. Furthermore, Hall, Halberstadt, and O'Brien (1997) conducted a meta-analysis of all the studies that have examined status effects on nonverbal sensitivity and found little support for the hypothesis that people in a weak, vulnerable position show higher sensitivity to nonverbal signals.

From an attachment perspective, this failure to find consistent support for what Hall and her colleagues call the "subordination" hypothesis is not surprising. The critical issues may be the extent to which a person's attachment system is active in a particular situation and the extent to which the "stronger, wiser" partner is viewed as a potentially responsive attachment figure. The stronger person's power per se is not likely to cause either attachment system activation or heightened scanning of the other person for signs related to care or support. In our view, it is the active search for support from a warm, strong attachment figure that causes weak, vulnerable persons to be more sensitive to such a person's nonverbal signals. Compatible with this hypothesis, DePaulo and Fisher (1981) reported that the ability to decode facial expressions of emotion accurately, as measured with the PONS test (Rosenthal et al., 1979), was associated with the extent to which participants actively sought support and assistance in a help-seeking context. Future research should examine the interface of support seeking and nonverbal sensitivity while systematically varying the levels of subordination and likely support provision. Such research could compare interactions with attachment figures and interactions with other relationship partners who are not attachment figures, and could include the individual difference measures found to be important in previous studies of attachment relationships. Furthermore, researchers should distinguish conceptually between state sensitivity—that is, sensitivity relevant to a particular partner or occasion versus dispositional or trait sensitivity—and construct reliable and valid measures to assess these two related constructs separately.

Attachment-Figure Availability and Patterns of Nonverbal Behavior and Sensitivity

A person's appraisal that an attachment figure is available and responsive is an important step in maintaining a sense of security. It seems likely that

a person's history of being sensitively cared for by attachment figures affects his or her abilities to emit and detect nonverbal signals, which might eventually become important aspects of the individual's personality and manifest themselves when the person occupies certain social roles such as support-provider or work-team member.

Viewed in terms of social learning theory (Bandura, 1969; Mischel, 1973), experiences with an available and sensitive attachment figure offer opportunities to learn about the advantages of nonverbal behavior and sensitivity. During positive interactions with an attachment figure, people have presumably learned that emotional signals are responded to sensitively by this person and that valuable support can be elicited by open and direct communication of distress (Cassidy, 1994). In fact, for individuals whose attachment figure is available and responsive, emotional displays reliably lead to distress-alleviating interventions by the caregiver. These people also learn that attention and sensitivity to an attachment figure's nonverbal signals and conforming their responses to these signals are effective ways to cope with threats and difficulties. Hence, attachment-figure availability promotes the belief that accurate nonverbal expression and sensitivity are rewarding, and predisposes people to be more expressive and sensitive in social situations and relationships.

Experiences of attachment-figure availability can also enhance accurate nonverbal expression and sensitivity by providing a model that the attached individual can imitate. According to Cassidy (1994), interactions with attachment figures who are emotionally accessible, responsive, and expressive not only foster attachment security but also provide a context in which a child comes to organize and express emotions openly and flexibly, and begins to understand implicitly the advantages of emotional displays. Kestenbaum, Farber, and Sroufe (1989) have shown that sensitive, empathic, responsive parents tend to have children who exhibit greater empathy as early as age 2 or 3. Some of this prosocial mirroring may be attributable to genetic similarities between parents and their children, but some is probably due to direct imitation and some to the beneficial effects of attachment security on the smooth operation of what Bowlby (1969/1982) called the caregiving behavioral system.

Consistent with this line of reasoning, Halberstadt (1986) suggested that affectionate and expressive caregivers provide opportunities for children to learn similar emotional behaviors. But she also wondered whether affectionate and expressive caregivers might reduce children's need to develop decoding skills because of the abundance of emotional information they make available. Thinking in terms of attachment theory and research, we suspect that well-supported children might feel less

need to anxiously monitor and scrutinize attachment figures' signals of rejection and disapproval (something that less well-treated children learn to watch for; Pollak & Tolley-Schell, 2002, 2003), but may have decoded many sensitive and empathic reactions which, over time, result in them feeling more comfortable, secure, and capable of responding empathically to others.

Well-developed nonverbal expression skills and sensitivity may also result from the positive impact of attachment-figure availability on ''self-reflective capacity'' (Fonagy, Steele, Steele, Moran, & Higgit, 1991)—the ability to think about and understand one's own and other people's mental states. According to Fonagy et al. (1991), positive interactions with attachment figures improve the capacity to understand one's own emotions and the emotions of relationship partners. They described the security-enhancing caregiver as able ''...to reflect on the infant's mental experience and re-present it to the infant translated into the language of actions the infant can understand. The baby is, thus, provided with the illusion that the process of reflection of psychological processes was performed within its own mental boundaries'' (p. 207). Perhaps as a result, a well-cared-for child can recognize various aspects of emotional displays, use them to better understand a relationship partner's inner states, and integrate nonverbal expression skills and sensitivity into his or her behavioral repertoire.

Although the hypothesized associations between attachment-figure availability and patterns of nonverbal behavior and sensitivity have not yet been systematically examined, there are some relevant findings worth considering. With regard to nonverbal expression skills, developmental studies have revealed that maternal sensitivity and responsiveness predict children's open expression of emotions (e.g., Eisenberg et al., 2001; Nicely, Tamis-LeMonda, & Grolnick, 1999). Moreover, Camras et al. (1988) showed that abused children (who had been repeatedly exposed to insensitive, unavailable, threatening attachment figures) emitted fewer recognizable facial expressions of positive and negative emotions to their mothers in a posed emotion-encoding paradigm than did non-abused children. A conceptually similar deficit in encoding abilities was reported by Hodgins and Belch (2000) in a sample of college students who had experienced family violence as children.

In a study of support seeking in adulthood, Geerts, Bouhuys, and Bloem (1997) experimentally manipulated the amount of responsiveness and attentiveness an interviewer provided to depressed patients during a clinical interview (the amount of affirmative nodding and verbal back-channel ''mm, hms'' and yeses emitted) and assessed the nonverbal

signals of proximity and support seeking emitted by patients during the interview. In line with what we would hypothesize, a highly available interviewer increased patients' emission of nonverbal signals of support seeking. Of special importance to us, this effect was observed among depressed patients, who tend to suffer from attachment insecurities (e.g., Roberts, Gotlib, & Kassel, 1996), showing that they are capable of more expressive behavior in the service of their needs if a potential attachment figure nonverbally indicates a willingness to provide responsive care.

With regard to nonverbal sensitivity, Camras et al. (1988) found that abused children were less able to decode their mother's facial expressions of positive and negative emotions than were non-abused children, and Hodgins and Belch (2000) found deficits in the decoding of nonverbal expressions of happiness among college students who had experienced family violence as children. However, Pollack and Tolley-Schell (2002) found that abused children were better than non-abused children at decoding anger. This finding is consistent with attachment theory, which suggests that children who experience repeated episodes of parental rejection or maltreatment become better at scrutinizing angry signals of rejection and disapproval (e.g., Cassidy, 1994). In a more direct study concerning the association between attachment-figure availability and interpersonal sensitivity in adulthood, Simpson, Ickes, and Blackstone (1995) asked dating couples to rate and discuss pictures of opposite-sex people with whom they might later interact. Each couple member was then asked to infer his or her partner's actual thoughts and feelings from a videotape of the rating and discussion task. The accuracy of participants' decoding of their partners' inner states was the main dependent variable. Simpson et al. found that participants who described their dating partners as more available and responsive were more accurate in decoding those partners' inner states.

In an experimental study of help-seeking behavior, DePaulo, Brittingham, and Kaiser (1983) found that a person's accuracy in decoding a partner's nonverbal behavior is a function of the extent to which the partner was previously available and supportive. Specifically, when participants needed to decode a partner's nonverbal cues in order to help the partner, they decoded the nonverbal cues more accurately if the partner had previously helped them in appropriate ways. If the partner had previously been unavailable and unsupportive, however, participants' nonverbal sensitivity was dramatically impaired. These results suggest that attachment-figure availability enhances a person's nonverbal sensitivity, perhaps because the person attempts to reciprocate the partner's sensitivity—a possibility that deserves further study.

Future research should include experimental manipulations of attachment-figure availability by exposing participants to actual encounters with available relationship partners or by heightening the accessibility of mental representations of security-providing figures (something we have done in several of our own studies), and then assessing the effects of these manipulations on nonverbal expression skills and sensitivity. In a series of recent studies, we showed that experimentally priming thoughts of security-providing attachment figures heightened people's empathic, compassionate reactions to a person in distress (Mikulincer et al., 2001; Mikulincer, Shaver, Gillath, & Nitzberg, in press). Unfortunately for the present article, we assessed interpersonal sensitivity through self-report measures and volunteering to take on the distressed person's burdens. We did not assess nonverbal reactions—something that could and should be done in future studies.

Secondary Attachment Strategies and Patterns of Nonverbal Behavior and Sensitivity

According to our model (Mikulincer & Shaver, 2003), secondary attachment strategies—hyperactivation or deactivation of the attachment system—result from failure to attain a sense of security in the primary way, by benefiting from the sensitive, responsive behavior of a concerned attachment figure. These secondary strategies are defensive ways of relating to others, being either anxiously self-focused or dismissively avoidant of intimacy and interdependence. These defensive strategies interfere with normal proximity seeking and so are likely to disrupt the normal emission and detection of nonverbal social signals. That is, they are likely to impair nonverbal expression skills and bias the decoding of nonverbal messages. This does not mean, however, that anxious and avoidant individuals, both groups of whom are conceptualized within attachment theory as insecure, will exhibit the same pattern of nonverbal behavior. Whereas the anxious person's hyperactivating strategies may intensify the expression of vulnerability, distress, and negative emotion and bias decoding toward overestimation of signals of rejection and disapproval, the avoidant person's deactivating strategies may inhibit both nonverbal expression of one's feelings and sensitivity toward a partner's needs and verbal and nonverbal signals.

Hyperactivating strategies lead anxiously attached individuals to focus on their own unsatisfied needs, weaknesses, and vulnerabilities (Mikulincer & Shaver, 2003). As a result, such people are particularly

likely to express these negative internal states rather than more positive states. In addition, their excessive self-focus can draw mental resources away from accurate perception of and responses to a partner's nonverbal signals. This inaccurate decoding can be further exacerbated by exaggerated worries about rejection and abandonment and a tendency to slant perceptions in the direction of noticing or imagining insufficient interest, availability, and responsiveness (Mikulincer & Shaver, 2003). These tendencies can bias decoding toward overestimation of signals indicating rejection and unavailability.

Deactivating strategies lead avoidant individuals to maintain cognitive, emotional, and physical distance from relationship partners and to minimize personal involvement in close relationships. These strategies also inhibit acknowledgment and display of every emotional state that is incongruent with the goal of attachment-system deactivation. These inhibitory efforts are directed mainly toward negative emotions, because negative emotions are associated with threat-related thoughts, and they can reactivate unwanted attachment needs. However, they may also be directed toward joy and happiness, because these emotions promote interpersonal closeness and might be interpreted as indicating an investment in close relationships (Cassidy, 1994). As a result, deactivating strategies naturally result in the impairment of nonverbal expression skills and a lack of attention, sensitivity, and responsiveness to a partner's verbal and nonverbal communications.

In the following sections, we review empirical evidence concerning the association between secondary attachment strategies and patterns of nonverbal behavior and interpersonal sensitivity. Beyond reviewing findings on nonverbal behavior and sensitivity, we will also review studies that have assessed self-reports of emotional expressiveness and sensitivity. In our view, the impact of secondary attachment strategies on encoding and decoding abilities are not limited to nonverbal signals, so studies based on self-report methods can offer useful hints about the ways in which these strategies defensively bias patterns of relating to others. These hints could be explored in similar future studies focused on more behavioral measures of nonverbal communication.

Open Expression of Emotions

Adult attachment research provides extensive evidence concerning biases imposed by secondary attachment strategies on self-reports of emotional displays. For example, weeklong diary studies, in which participants completed the Rochester Interaction Record every time they engaged in a

social interaction lasting 10 minutes or longer, have consistently revealed that anxious and avoidant participants experienced fewer positive emotions than secure participants (e.g., Kafetsios & Nezlek, 2002; Pietromonaco & Feldman Barrett, 1997; Tidwell, Reis, & Shaver, 1996). There is also extensive evidence that higher scores on the attachment avoidance dimension are related to lower scores on self-report measures of emotional expressiveness (Ducharme, Doyle, & Markiewicz, 2002; Searle & Meara, 1999; Tucker & Anders, 1999), to higher scores on scales tapping the tendency to bottle up emotions and to hide them from a relationship partner (Feeney, 1995, 1999), and to writing TAT stories that indicate exclusion of negative emotions from consciousness (Magai, Hunziker, Mesias, & Culver, 2000).

Attachment-style differences in the expression of emotions have also been found in studies examining proneness to disclose and share personal information and feelings with a partner. Studies consistently reveal that avoidant attachment is associated with low levels of self-disclosure (e.g., Keelan, Dion, & Dion, 1998; Mikulincer & Nachshon, 1991)—a direct reflection of avoidant individuals' reluctance to express their inner feelings. Mikulincer and Nachshon also documented some ways in which attachment anxiety affects self-disclosure. For anxiously attached individuals, self-disclosure can be a means of quickly establishing desired intimacy, enlisting an interaction partner's help or support, and reducing fear of rejection. As a result, although anxious people were found by Mikulincer and Nachshon (1991) to be highly disposed to self-disclose, they tended to disclose indiscriminately and inappropriately to people who were not yet prepared for intensely intimate interactions. They also tended to be unresponsive to their partner's disclosures; in fact, they rarely even responded to information disclosed by their partners. From a nonverbal behavior perspective, this pattern of communication may indicate problems in decoding a relationship partner's interest in one's disclosures and his or her willingness to disclose personal feelings. That is, anxiously attached people's unresponsive pattern of self-disclosure may be an overt manifestation of deficits in decoding rather than encoding abilities. Future studies should examine these possible links between self-disclosure and ability to encode and decode nonverbal signals.

Studies assessing nonverbal behavior have also revealed theoretically coherent attachment-style differences in expression of emotions and interpersonal communication. For example, Magai et al. (2000) videotaped participants during an emotion induction procedure and later coded their facial expressions. Whereas high scores on attachment avoidance were associated with fewer nonverbal expressions of joy, high scores on

attachment anxiety were associated with more pronounced facial expressions of negative emotions. These findings were replicated in a sample of dementia patients (Magai, Cohen, Culver, Gomberg, & Malatesta, 1997). In a conceptually similar study, Zimmermann, Wulf, and Grossmann (1997) found that participants classified as dismissingly avoidant in the Adult Attachment Interview displayed fewer facial expressions of interest and joy during the interview.

Spangler and Zimmermann (1999), again using the AAI as a measure of attachment style, examined differences in activity of the smile and frown muscles (using electromyography) while participants watched emotional film excerpts. They found that avoidant participants, as compared with their secure counterparts, exhibited a restricted mimic response and overall low facial expression of negative emotions, even when the scene being watched was highly distressing. In another study using electromyography, Sonnby-Borgstroem and Joensson (2003) found that attachment anxiety, measured with a self-report scale, was associated with facial muscle movements reflecting a negative affective state while looking at pictures of angry faces.

Attachment-style differences in nonverbal expression of emotions have also been found during interpersonal interactions. In their field study of airport separations, for example, Fraley and Shaver (1998) found that attachment anxiety, as measured by a self-report scale, was associated with more intense nonverbal displays of sadness and distress during the pre-separation period. Attachment avoidance was associated with less frequent contact-seeking and contact-maintaining nonverbal behaviors, and more frequent avoidant behaviors, such as turning away and looking elsewhere. The inhibitory effects of deactivating strategies on nonverbal expression of emotions were also observed in avoidant adolescents, as classified by the AAI, during a discussion with their mother about areas of disagreement (Becker-Stoll, Delius, & Scheitenberger, 2001). Interestingly, in this study the avoidant adolescents' inhibited expressions were noted in a second-by-second analysis of facial responses during the conversation.

People with different attachment styles have also been shown to differ in the quality of their nonverbal communication during conversations with a romantic partner. Guerrero (1996) videotaped dating couples while they were discussing important personal problems and found that avoidant attachment was associated with lower levels of gaze, facial pleasantness, vocal pleasantness, and interest in the conversation. Attachment anxiety was associated with more vocal and physical signs of distress during the conversation. In another study, Tucker and Anders (1998)

videotaped dating couples while they discussed positive aspects of their relationships and found that people who scored high on avoidance tended to laugh less, touch their partner less, gaze less, and smile less during the interaction than people who scored low on this attachment-style dimension. In a related study, this time focused on couple-level analyses, Le Poire, Shepard, and Duggan (1999) found that partners' avoidance, assessed with questionnaires, combined systematically to predict the extent to which nonverbal behavior was inhibited during social interactions. Avoidant individuals' inhibitory tendencies have also been noted in observational studies of support-seeking behavior in romantic couples (e.g., Collins & Feeney, 2000; Simpson, Rholes, & Nelligan, 1992; Simpson, Rholes, Orina, & Grich, 2002). Across the various studies, attachment avoidance was consistently associated with less verbal and nonverbal support seeking.

Interpersonal Sensitivity

One sign of insecurely attached individuals' lack of sensitivity is the way they appraise other people's traits, attitudes, and behaviors. For example, Mikulincer, Orbach, and Iavnieli (1998) found that whereas attachment anxiety was associated with a tendency to perceive others as similar to oneself and to show a false consensus bias in both trait and opinion descriptions, attachment avoidance was associated with a tendency to perceive others as dissimilar to oneself and to exhibit a false distinctiveness bias. From a nonverbal behavior perspective, this search for consensus and distinctiveness might create serious problems in accurately decoding a partner's nonverbal signals, mainly when they do not fit a person's motivational tendency. Future research should examine the interplay between biases in person perception (false consensus, false distinctiveness) and specific deficits in nonverbal sensitivity.

Insecure individuals' inaccurate perception of other people was also observed in Mikulincer and Horesh's (1999) study of psychological projection. Specifically, avoidant individuals' perceptions of others were colored by defensive projection of their own unwanted traits (which the authors called ''unwanted-self'' traits) onto others, which was then used as a reason for distancing themselves from those undesirable people. In contrast, anxiously attached individuals projected their own ''actual-self'' traits onto others and viewed the resulting similarities as a basis for perceived similarity (which may have made closeness and compatibility more likely). Mikulincer (1998) also documented insecurely attached people's inaccurate appraisal of signs of hostility in a relationship partner's

behavior. Whereas securely attached individuals attributed hostility to a partner only when there were clear contextual cues concerning a partner's hostile intent, insecurely attached persons, either anxious or avoidant, attributed hostility to their partner even when there were contextual cues indicating the partner's non-hostile intent.

Of course, these projective mechanisms as well as the tendency to exaggerate when perceiving others' hostility may be associated with specific deficits in nonverbal sensitivity. On the one hand, these biases in person perception may result from specific deficits in nonverbal sensitivity that developed out of chronic reliance on secondary attachment strategies. On the other hand, these biases may further impair a person's ability to decode nonverbal signals. Further research should examine the associations between these cognitive biases and deficits in nonverbal sensitivity, while attempting to document the likely spiral by which they exacerbate each other.

Adult attachment studies have also documented insecurely attached people's lack of sensitivity and responsiveness to a distressed relationship partner. Kunce and Shaver (1994) constructed a self-report questionnaire to assess caregiving behaviors in close relationships and found that whereas avoidant people's deactivating strategies led them to maintain distance from a needy partner (less accessibility, less physical contact), anxious people's hyperactivating strategies led them to report high levels of overinvolvement with partner's problems and a pattern of compulsive caregiving (e.g., expressing fears that their partner would leave if they didn't provide adequate care). These findings have been replicated using other self-report scales (e.g., Feeney, 1996; Feeney & Hohaus, 2001).

The link between attachment insecurity and lack of sensitive caregiving has been further documented in observational studies of nonverbal supportive behaviors. For example, Simpson et al. (1992) videotaped heterosexual dating couples while one partner waited to endure a stressful experience and found that participants scoring high on attachment avoidance, as compared to secure participants, offered less physical contact and comfort to their distressed dating partner. Interestingly, the more avoidant participants provided less support to their partners, regardless of how much support the partners actually sought. In Collins and Feeney's (2000) laboratory study, in which dating couples were videotaped while one member of the couple disclosed a personal problem to his or her partner, higher scores on attachment anxiety were associated with lower nonverbal responsiveness and more negative caregiving behavior toward the distressed partner.

Attachment-style differences in sensitivity to nonverbal signals of a relationship partner's needs have also been observed in studies examining mother–infant interactions. For example, Crandell, Fitzgerald, and Whipple (1997) found, during a videotaped play interaction, that mothers with an insecure "state of mind with respect to attachment" (assessed with the AAI) and their three- to four-year-old children engaged in less fluid, synchronous give-and-take interactions than secure mothers with their children. Similarly, Isabella, Belsky, and von Eye (1989) and Isabella and Belsky (1991) found that insecure attachment relationships between mother and child were characterized by asynchrony, maternal intrusiveness, unresponsiveness, and insufficient involvement. Interestingly, Belsky, Rovine, and Taylor (1984) found that whereas secure and avoidant mothers did not differ in their level of involvement with their infant under most circumstances, avoidant mothers responded much less supportively than secure mothers when their infants were distressed and nonverbally expressed a need for proximity and support. (See Edelstein et al., 2004, for similar findings in a study of parents' reactions to children who were upset about a preschool inoculation in a medical setting.)

In a study of attachment antecedents of maternal sensitivity, Haft and Slade (1989) administered the AAI to mothers of 9–23-month-old infants and videotaped interactions between mother and child, later coding the tapes for a mother's noticing of and attunement to her child's affects and needs. Secure mothers were more attuned to their babies than insecure mothers. Moreover, secure mothers attuned to both positive and negative affect and were consistent in reacting to their babies' experiences. Avoidant mothers did not attune to negative affect, seeming to ignore it, whereas anxious mothers attuned inconsistently to both positive and negative affect.

Adult attachment studies also provide important information about attachment-style differences in the ability to accurately decode a partner's facial expressions. For example, Noller and Feeney (1994) found that, during the first two years of marriage, one partner's higher scores on the attachment anxiety and avoidance dimensions predicted less accuracy in decoding a spouse's negative and positive facial expressions. Using a typical facial affect decoding task, Magai, Distel, and Liker (1995) and Magai et al. (2000) found that higher attachment anxiety and avoidance scores were associated with an exaggerated tendency to see expressions of disgust or anger on other peoples' faces.

In a recent study, Niedenthal, Brauer, Robin, and Innes-Ker (2002) asked participants to play computerized movies in which a face that initially displayed a particular emotional expression gradually changed to

another expression, and then to stop the display at the point where they perceived that the initial expression had disappeared from the face. Avoidant attachment was associated with a tendency to see the offset of happy and angry face expressions earlier, suggesting a tendency to minimize the encoding of emotion-relevant information and rapidly distance oneself from it. In contrast, attachment anxiety was associated with a tendency to notice the offset of these expressions later than secure persons, suggesting a tendency to maintain the encoding of emotional stimuli for longer periods of time. Interestingly, the addition of a distress-eliciting condition led avoidants to react more like anxious persons, implying that distress arousal may have interfered with their tendency to distance themselves from emotional stimuli. (For similar studies in which avoidant individuals under stress become more like anxious individuals, see Berant, Mikulincer, & Florian, 2001; Mikulincer, Dolev, & Shaver, 2004).

Summary and Future Directions

Attachment theory has, from the beginning, emphasized the importance of both verbal and nonverbal behavior and sensitivity. Given the theory's original purpose, which was to conceptualize and provide a framework for studying infant–parent interactions, it has always assumed the importance of nonverbal indications of one person's discomfort, endangerment, or distress and the other person's nonverbal indications of sensitivity to that distress and willingness to provide protection, comfort, and support. Although the vast majority of early attachment studies focused on these issues in the context of infant–parent relationships and interactions, in recent years, considerable attention has been directed to adult analogs of those processes. It has proven possible to measure analogous individual differences among adults, especially with reference to their experiences and behavior in romantic or marital relationships. It has also been possible to experimentally influence people's sense of attachment security, allowing a range of effects of security and insecurity to be documented in the short term and permitting more powerful causal conclusions to be drawn.

In this article, we have necessarily interpreted the notions of nonverbal behavior and sensitivity broadly. Indeed, given the range of effects we have described and their compatibility with predictions from attachment theory, we infer that both verbal and nonverbal forms of expressiveness and sensitivity stem from the same underlying processes. The lack of focus in the adult attachment literature on specific nonverbal processes,

however, leaves open many future questions for research. More research is needed, for example, on attachment-style differences in the perception and interpretation of a relationship partner's nonverbal expressions of positive and negative emotions. Future studies should also examine possible contextual, relational factors that increase a person's sense of attachment security in the short run and thereby momentarily heighten his or her ability or willingness to perceive accurately and respond adequately to a partner's emotions, wishes, needs, and behaviors. Research should also explore the effects of a partner's nonverbal expression skills and sensitivity on a person's own sense of attachment security, in the short run and over time, as the relationship develops. Research should determine whether innate deficits in nonverbal expression skills and sensitivity affect the functioning of the attachment system and the quality of interactions with attachment figures in times of need. Although we have focused throughout this article on possible effects of attachment-figure availability and responsiveness on the ability to encode and decode nonverbal signals, we do not mean to dismiss the possibility that innate deficits in these nonverbal abilities affect the responses of attachment figures to a child's or adult's bids for proximity.

Given that emotional expressiveness and sensitive responsiveness have been key constructs in attachment theory and in many studies of infant–parent attachment since the 1970s, it is surprising how few studies of attachment relationships in adulthood have focused on nonverbal expression skills and sensitivity. Turning attention to this issue will yield important dividends for both attachment theory and the study of nonverbal abilities.

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