

Adult Attachment Theory and Affective Reactivity and Regulation

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In D. K. Snyder, J. A. Simpson, & J. N. Hughes (Eds.), Emotion Regulation in Couples and Families: Pathways to Dysfunction and Health, 2006, pp. 57-74. Washington, D.C.: American Psychological Association.

## Adult Attachment Theory and Affective Reactivity and Regulation

Attachment theory (Bowlby, 1969, 1973, 1979, 1980) emphasizes the emotional nature of close bonds between two people. Bowlby's original theory, which focused on understanding the close enduring bonds between infants and their caregivers, highlighted two ways in which emotion is implicated in attachment. First, when infants experience emotional distress, they seek proximity to their caregiver. Second, caregivers who are sensitive and responsive are able to help infants regulate their feelings of distress, enabling them to experience an emotional sense of well-being or "felt security" (Sroufe & Waters, 1977). Research on attachment in adult close relationships (e.g., romantic relationships), which are the focus of this chapter, also has highlighted the connection between attachment and emotion (e.g., Hazan & Shaver, 1987; Pietromonaco & Feldman Barrett, 2000). Like children, when adults become distressed in the face of a threat, they may seek out an attachment figure in an attempt to regain an emotional sense of felt security (Simpson & Rholes, 1994).

Although researchers have examined the link between adult attachment and emotion, the precise role of emotion in attachment processes remains unclear. Most researchers have assumed that mental representations of the self in relation to others, or internal working models (Bowlby, 1973), trigger the experience and regulation of emotion. However, the object relations tradition from which Bowlby emerged reflects a conception of working models as part of a dynamic system that is organized by both the experience and regulation of emotion (Pietromonaco & Feldman Barrett, 2000; Reis & Patrick, 1996). Following this perspective, we (Pietromonaco & Feldman Barrett, 2000) have proposed that emotion and regulation strategies are formative in the development

and maintenance of working models, and that emotion is an organizing force in working models rather than an outcome of them. Accordingly, we assume that two affect-based processes underlie working models of attachment and the operation of the attachment system: (a) affective reactivity, defined as the frequency with which individuals experience a feeling of threat, thereby activating the need for felt security, and (b) affect regulation strategies, defined as the patterns of relationship behavior that individuals enact in an attempt to maintain or restore felt security. We use the terms affective reactivity and affect regulation rather than emotional reactivity and emotion regulation because we are referring to the experience and regulation of global feelings of distress (i.e., global negative affect) rather than to the experience and regulation of specific emotions (e.g., fear, anger).

The goal of this chapter is to assess the affective underpinnings of adult attachment. We evaluate the current evidence, elaborate our theoretical perspective, and present new evidence from our ongoing research program. In addition, we propose several directions for future research, evaluate the potential for interdisciplinary collaboration, and discuss the implications of understanding the affective bases of attachment for clinical interventions.

### Conceptual Foundations of Attachment Theory and Affect Regulation

#### Overview of Attachment Theory

Attachment theory, at heart, concerns the experience and regulation of emotion. Several fundamental assumptions underlie the theory (for a comprehensive discussion of the theory, see Mikulincer & Shaver, 2003). First, the attachment system, as conceived by Bowlby (e.g., 1969, 1973), fulfills the evolutionarily adaptive function of keeping

human infants close to their caregivers. Infants and children who remain physically close to their caregivers, or who seek proximity when a potentially dangerous situation arises, are more likely to survive and to reproduce in adulthood. Second, Bowlby proposed that the attachment-behavioral system is a hard-wired regulatory system that directs infants to seek out their caregivers in the face of threat. Thus, the attachment system is particularly likely to be activated when infants perceive either a physical or psychological threat.

When a threat is perceived, infants will seek contact with their primary caregiver. If the caregiver is not available or is insufficiently responsive, then the infant is likely to experience distress (fear, anxiety). If the caregiver is available and responsive, then contact should help to reduce distress and to restore a sense of emotional safety, or felt security. Third, children learn from their interactions with attachment figures, and this knowledge develops into mental representations, or internal working models, that include information about whether attachment figures will be available and responsive (view of others) and whether they are worthy of love in the eyes of their caregiver (view of self). These mental representations are assumed to guide thoughts, feelings, and behavior and to shape the nature of affect regulation attempts in subsequent situations. Thus, children learn what to expect from attachment figures, and given the particular characteristics of their partnership, they learn which strategies are most likely to enable them to cope with distress (Cassidy, 1994).

Although Bowlby focused on the operation of the attachment-behavioral system during infancy and childhood, he viewed the system as enduring over the life course (Bowlby, 1979). Hazan and Shaver (1987) elaborated on Bowlby's original theory by conceptualizing adult romantic relationships as attachment bonds governed by processes

similar to those that occur in infant-caregiver relationships. Thus, romantic partners may seek each other out in the face of distress, and they may help or hinder each other's efforts to regulate distress. Adults also hold working models of their romantic attachment relationships, and these models may include knowledge from earlier attachment relationships as well as additional knowledge acquired from interactions with attachment figures in adulthood (e.g., romantic partners).<sup>1</sup>

### Individual Differences in Adult Attachment Style

Adult attachment theory (e.g., Fraley & Shaver, 2000; Hazan & Shaver, 1987; Mikulincer & Shaver, 2003), like the original developmental theory (Ainsworth et al., 1978; Bowlby, 1973), assumes that individual differences exist in the degree to which people use attachment figures as sources of security and in the degree to which they are able to achieve felt security. These individual differences are thought to arise from actual differences in recurring interaction patterns with attachment figures, and they are reflected in the content of internal working models.

In their pioneering work, Hazan and Shaver (1987) proposed that individual differences in adult attachment styles paralleled the three behavioral patterns (i.e., secure, anxious-ambivalent, avoidant) that Ainsworth (Ainsworth et al., 1978) observed in infant-caregiver relationships. Ainsworth's investigations using the Strange Situation and home observations revealed that securely attached infants were easily comforted when they were reunited with their caregiver after a separation, and they appeared to

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<sup>1</sup> Although adult attachment theory (Hazan & Shaver, 1987) assumes that some continuity exists between working models developed during childhood and those later in life, the degree of continuity remains an open question (Pietromonaco & Feldman Barrett, 2000). Attachment processes (e.g., seeking proximity when distressed), however, appear to operate in similar ways in childhood and adulthood (Mikulincer & Shaver, 2003).

have caregivers who were available and responsive. Anxious-ambivalent infants became intensely distressed when separated from their caregiver, and they were not easily comforted when the caregiver returned. Their caregivers appeared to respond inconsistently, and this pattern of responding over time may have heightened the distress reactions of these infants. Avoidant infants did not show much distress when they were separated from the caregiver, and they tended to ignore the caregiver when the two were reunited. The caregivers of avoidant infants tended to be distant or unavailable. Each of these behavioral patterns is thought to reflect an affect regulation strategy that is functional in that particular kind of relationship (Cassidy, 1994; Mikulincer & Shaver, 2004). Infants with responsive caregivers (secure infants) are able to restore a sense of well-being or felt security by seeking proximity to the caregiver. Those with inconsistently available caregivers (anxious-ambivalent infants) appear to rely on hyperactivating strategies (intense distress, repeated protest, heightened vigilance), and those with distant or unavailable caregivers appear to use deactivating strategies (detachment, self-reliance). Attachment patterns in adult romantic relationships show similarities to those observed in infants (Hazan & Shaver, 1987). Secure adults evidence comfort with closeness and intimacy, anxious-ambivalent adults show an excessive concern with closeness and worry that partners will leave, and avoidant adults evidence discomfort with closeness and intimacy.

Although initial work on adult attachment focused on these three attachment styles, more recent work has conceptualized individual differences in adult attachment in terms of four prototypes (i.e., secure, preoccupied, fearful-avoidant, dismissing-avoidant; Bartholomew & Horowitz, 1991) or in terms of two dimensions underlying the categories

(Brennan, Clark, & Shaver, 1998; Fraley, Waller, & Brennan, 2000). These dimensions are often characterized as anxious-ambivalence and avoidance. People high in anxious-ambivalence desire closeness and intimacy, but they are unable to achieve a stable sense of closeness and security. People high in avoidance are reluctant to rely on others and prefer to maintain emotional distance.

The interaction between the two dimensions yields four attachment prototypes identified in previous research (Bartholomew & Horowitz, 1991). Thus, people who are low on both the anxious-ambivalence and avoidance dimensions, who fall within the secure prototype, are comfortable with closeness and able to rely on others when the need arises. People high in anxious-ambivalence but low in avoidance, who fall within the preoccupied (or anxious-ambivalent) prototype, desire a high degree of closeness, are preoccupied with relationships, and worry about being abandoned. People high in anxious-ambivalence and high in avoidance, who fall within the fearful-avoidant prototype, both desire and fear closeness, whereas those high in avoidance and low in anxious-ambivalence, who fall within the dismissing-avoidant prototype, are reluctant to rely on others, self-reliant, and prefer to maintain emotional distance. These patterns are assumed to represent an adaptive response to the demands of a particular attachment relationship, and they are thought to reflect underlying working models.

#### Affect-Based Processes

In our view, two affect-based processes, affective reactivity and regulation, underlie working models. We tie affective reactivity specifically to sensitivity to threat because threat is assumed to activate the attachment system (Bowlby, 1973; Mikulincer & Shaver, in press; Simpson & Rholes, 1994). People experience a feeling of threat

when they feel unable to cope, and this experience may be triggered externally by factors in the environment, or internally from negative affect (see Pietromonaco & Feldman Barrett, 2000). The implication is that people who are more emotionally reactive will more frequently perceive a threat, thereby leading them to experience more frequent activation of the attachment system, and as a consequence, a more frequent need to regulate their feelings of distress. In addition, the regulation element in our model focuses specifically on interpersonally-based affect regulation (i.e., approaching or avoiding others) rather than on a wider range of regulatory strategies.

The reactivity and regulation elements in our model should be connected to individual differences in attachment style in predictable ways. Figure 1 depicts the two dimensions of affective reactivity and affect regulation via reliance on others and their link to each of the adult attachment style prototypes. People who are high in anxious-ambivalence (i.e., preoccupied or fearful-avoidant) are predicted to more frequently experience a feeling of threat, and as a consequence, they will more frequently need to engage in behaviors that will help them to restore felt security. Affect regulation strategies for people high in anxious-ambivalence will differ depending on whether they are high or low in avoidance; those low in avoidance (i.e., preoccupied prototype) are likely to rely on others to restore felt security, whereas those high in avoidance (i.e., fearful-avoidant prototype) will be less willing to rely on others. People who are low in both anxious-ambivalence and low in avoidance (i.e., secure prototype) are expected to experience threat less often; when they do, however, they will be willing to rely on others to restore felt security. People high in avoidance and low in anxious-ambivalence (i.e., dismissing-avoidant prototype), who may use defensive strategies to suppress threat

(Fraley, Davis, & Shaver, 1998), are expected to be less likely to experience a feeling of threat, and when they do, they will be less likely to rely on others.

### Empirical Foundations

It follows from our model that people who more frequently perceive threats in the environment should be more likely to experience emotional distress. Most of the evidence relevant to this proposition comes from studies in which participants provide self-reports of their emotional experience. In general, this work has shown that people higher in anxious-ambivalence (preoccupation) experience greater emotional reactivity. For example, people with an anxious-ambivalent attachment style consistently report more intense emotions (e.g., Collins & Read, 1990; Pietromonaco & Feldman Barrett, 1997), greater fluctuations in their emotions (Hazan & Shaver, 1987), and greater emotional expressivity (Bartholomew & Horowitz, 1991). In contrast, people with a more avoidant style report little emotionality (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Hazan & Shaver, 1987; Pietromonaco & Carnelley, 1994; Pietromonaco & Feldman Barrett, 1997).

In addition, we would expect that people high in anxious-ambivalence would show greater emotional reactivity than others across more contexts because they perceive a wider range of contexts as threat-related. The few relevant studies (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002; Simpson, Rholes, & Phillips, 1996) are consistent with this idea. Findings from these studies suggest that, regardless of whether the context was defined experimentally as threatening, people higher in anxious-ambivalence show greater emotional reactivity; they report greater distress (Simpson et al., 1996), and they respond more rapidly to the names of

attachment figures (Mikulincer et al., 2002) and to proximity-related words (Mikulincer et al., 2000). Given that all of the experimental contexts in these studies concerned attachment, it may be that such contexts, in themselves, trigger a feeling of threat for those with an anxious-ambivalent style.

We also have proposed that the way in which adults regulate affect (e.g., through approaching or avoiding others) differs with attachment style. Overall, the evidence is consistent with our model. People higher in anxious-ambivalence are more likely to turn to others for help with regulating their negative feelings, whereas those who are more avoidant distance themselves from others (e.g., Collins & Feeney, 2000; Mikulincer, 1998; Mikulincer, Florian, & Weller, 1993; Mikulincer, Orbach, & Iavnieli, 1998; Ognibene & Collins, 1998; Pietromonaco & Feldman Barrett, in press; Simpson, Rholes, & Nelligan, 1992). Indeed, for people high in attachment anxiety, the experimental activation of attachment security (i.e., via subliminally priming the word “love”), which may evoke a representation of an attachment figure, appears to provide a comforting or soothing effect by reducing the accessibility of terror-related words (Mikulincer, Shaver, & Horesh, this volume).

Many questions about the link between attachment and affective reactivity and regulation remain unanswered. One key question concerns what is defined as an attachment-relevant threat by people of different attachment styles (Pietromonaco, Greenwood, & Feldman Barrett, 2004). Are some individuals more likely to perceive threat in what may be normatively non-threatening situations (Quigley & Feldman Barrett, 1999)? If so, how is this more frequent experience of threat connected to the ability to benefit from attempts to regulate negative affect?

A second key question concerns how efforts to regulate affect vary depending on characteristics of the partner (e.g., partner's affective reactivity and preferred regulation strategies). Some work (Carnelley, Pietromonaco, & Jaffe, 1996; Collins & Feeney, 2000; Feeney & Collins, 2001; Simpson et al., 1992; Simpson et al., 2002) suggests that one partner's attachment style may contribute to the other partner's ability to regulate emotional distress. For example, more avoidant men have been found to be less likely to provide support when their female partner displays greater emotional distress (Simpson, Rholes, & Nelligan, 1992), and thus their female partners may be slower to recover from such distress. Other work (Simpson, Rholes, Orina, & Grich, 2002) suggests that more securely attached women respond more flexibly to their partner's needs; secure women provide more support when their male partner desires support, but they provide less support when the male partner does not desire it. In addition, work examining behavior during conflict interactions (for a review, see Pietromonaco, Greenwood, & Feldman Barrett, 2004) suggests that couples are more adept at communicating during conflict when both partners are secure; for example, their interactions show greater synchrony in the timing of behaviors and less asymmetry in dominance (Bouthillier, Julien, Dube, Belanger, & Hamelin, 2002) and they report less withdrawal and verbal aggression during conflict (Senchak & Leonard, 1992). In addition, couples including at least one secure partner evidence more constructive behavior (e.g., express greater validation, greater affection, less contempt, Creasey, 2004) when negotiating conflict than do couples including two insecure partners (see Pietromonaco, Greenwood, & Feldman Barrett, 2004). Resolving conflict in a constructive manner may be facilitated by the ability of secure partners to behave in ways that reduce their partner's distress.

Furthermore, characteristics of the partner should be especially important for individuals who more frequently regulate their feelings by relying on others.

A third key question is whether people higher in anxious-ambivalence show greater affective reactivity when reactivity is assessed via non-self-report and/or more implicit measures. Evidence from studies that do not rely on global self-reports suggest that avoidance also may be associated with greater reactivity. For example, two diary studies (Pietromonaco & Feldman Barrett, 1997; Tidwell, Reis, & Shaver, 1996) have found that in immediate, online reports following social interactions avoidant individuals (not anxious-ambivalent individuals) evidenced more negative emotion than did secure individuals. This pattern was evident across social interactions in general (Pietromonaco & Feldman Barrett, 1997; Tidwell et al., 1996) as well as during high conflict interactions (Pietromonaco & Feldman Barrett, 1997) and interactions with different kinds of partners (e.g., same-sex, opposite-sex; Tidwell et al., 1996). Although researchers have rarely examined the link between adult attachment and any kind of physiological response, a few studies (e.g., Feeney & Kirkpatrick, 1996; Mikulincer, 1998) assessing cardiovascular measures suggest that individuals with an insecure romantic attachment style (i.e., anxious-ambivalent or avoidant) show greater physiological reactivity than do those with a secure romantic attachment style.

Findings from our recent research begin to address the last two key questions raised here. One study (Pietromonaco, Feldman Barrett, & Holmes, 2004) examined the degree to which individuals' own attachment style as well as the attachment style of the romantic partner predicted individuals' self-reported patterns of affective reactivity and regulatory strategies in response to attachment-related threats. Another study (Powers,

Pietromonaco, Gunlicks, & Sayer, 2004) examined the link between attachment and affective reactivity assessed via a physiological measure, and it also considers the contribution of the partner's attachment style.

#### Attachment and Self-reported Affective Reactivity and Regulation

In one study (Pietromonaco et al., 2004), we directly tested the idea that differences in affective reactivity and regulation are connected to adult attachment patterns in theoretically predicted ways (see Figure 1), and we examined whether the partner's attachment style contributed to individuals' patterns of affective reactivity and regulation. Although previous work has investigated self-reported patterns of affective reactivity and regulation strategies, this study extended previous work by examining a wide range of attachment relevant threatening situations, and by investigating whether the partner's attachment style, alone or in combination with the individuals' attachment style, predicted responses. If attachment figures help people to regulate their feelings, then the strategies that people use may be shaped, to some extent, by how emotionally responsive, available, and sensitive their partner is. For example, people paired with a more avoidant partner who may be less willing to discuss problems may feel less equipped to cope with a threatening event in the relationship.

In this study, both partners in dating couples (n=76 couples) separately read a variety of potentially threatening, attachment-relevant scenarios (e.g., Your romantic partner didn't comfort you when you were feeling down; Your romantic partner was just offered a great job in another part of the country and may be making plans to move.) and imagined themselves experiencing each situation. After reading each scenario, participants reported on how distressed they would feel in the situation, the degree to

which they felt able to cope with the situation (appraisal of their coping ability), and the extent to which they would use different coping strategies (e.g., trying to change the situation, talking to someone for support/reassurance, suppressing one's feelings).

Consistent with the predictions advanced in our model, individuals who scored higher in anxious-ambivalence reported that they would experience more emotional distress and that they felt less able to cope with the situations. Attachment avoidance was not associated with reported distress. In addition, individuals higher in anxious attachment were more likely to deal with the problem by relying on others. In contrast, individuals higher in avoidance were less likely to report that they would rely on others (e.g., they were less likely to talk to someone for reassurance). They also were more likely to distance themselves by trying to suppress their feelings. Overall, in line with our model and with other research, people higher in anxious attachment were more likely to use others in the interest of regulating their feelings, whereas those higher in avoidance were less likely to do so.

In addition, the degree to which individuals' own attachment avoidance predicted their perceived ability to cope and their use of particular coping strategies was moderated by their partner's attachment avoidance. People who were low in avoidance felt less able to cope when their partner was more avoidant. In contrast, people who were high in avoidance generally felt well able to cope, and their perceptions were not associated with their partner's degree of avoidance. Similarly, people low in avoidance who were paired with a highly avoidant partner were less likely to try to distract themselves by taking their mind off of the situation and more likely to try to get information from someone else to cope with the situation. In contrast, people high in avoidance who had a highly avoidant

partner were more likely to distract themselves and less likely to try to get information from someone. These findings suggest that how a person copes with emotional distress and whether that method is effective or not needs to be evaluated within the context of the relationship. People low in avoidance who are paired with avoidant partners may feel less able to cope because their partners are likely to be unwilling to confront the situation, and they may believe that they must take an active stance to achieve any kind of resolution. People high in avoidance who are with avoidant partners may benefit (at least some of the time) by using distancing strategies.

Overall, these findings suggest that affect regulation strategies need to be considered not only in terms of an individual's own attachment style, but also within the interpersonal context of the specific attachment relationship. Perceptions of the ability to cope and the preference for particular strategies appear to depend, to some extent, on the attachment styles of both partners involved in the relationship.

This study focused on people's conscious, self-reported feelings and regulatory strategies. Self-report measures provide information about these more conscious aspects of affective experience, but it is also important to examine the affective underpinnings of attachment by looking at less consciously controlled response systems.

#### Attachment and Physiological Reactivity and Regulation

In another study, we (Powers, Pietromonaco, Gunlicks, & Sayer, 2004) investigated whether individuals' own attachment style and their dating partner's attachment style predicted physiological responses to a stressful situation. This work focused on a physiological measure that taps into a major stress-response system, reactivity of the hypothalamic-pituitary-adrenal (HPA) axis (assessed through salivary

cortisol). The stressful situation consisted of a standard conflict discussion in which dating couples discussed and tried to resolve an issue that represented a significant source of disagreement in their relationship. Conflict interactions generally induce stress, and they are likely to activate attachment behavior because they often raise concerns about the partner's emotional availability and responsiveness (Simpson et al., 1996).

In this study, dating partners (124 couples) provided 7 saliva samples over the course of the session. These samples allowed us to assess participants' stress responses shortly before they entered the lab, through anticipation of the conflict discussion (i.e., after the experimenter provided a detailed description of the conflict task), during the discussion, and throughout a recovery period of 40 minutes after the discussion.<sup>2</sup>

In line with previous work examining adult attachment and cardiovascular reactivity, we found that people with a more insecure romantic attachment style showed greater cortisol reactivity. However, the type of insecure attachment (i.e., anxious-ambivalence or avoidance) associated with reactivity differed for women and men. Women high in avoidance entered the lab with higher cortisol levels, and their cortisol levels remained high throughout the conflict task. Men higher in anxious-ambivalence showed greater reactivity in anticipation of and during the conflict than did men lower in anxious-ambivalence. The nature of the conflict task may contribute to this gender difference in the link between attachment and cortisol reactivity. Women typically initiate and guide discussions about relationship problems, a task that may be particularly

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<sup>2</sup> Cortisol appears in the saliva approximately 15-20 min after it is secreted from the adrenal gland. Thus, each salivary sample indexed participants' cortisol reactions about 15-20 minutes prior to the time of collection. For example, the sample taken when participants entered the lab indicated their stress response about 5-10 min before their arrival at the lab.

stressful for avoidant women. Men high in anxious-ambivalence may show greater stress reactivity because their desire to express relationship concerns runs counter to gender role norms for such interactions.

We also examined the extent to which the romantic partner's attachment style predicted individuals' patterns of cortisol reactivity and recovery. If partners help each other with affect regulation, then the partner's attachment style is likely to contribute to the extent to which people show reactivity to threat. In particular, individuals with more emotionally responsive partners (i.e., secure partners) should show less HPA reactivity in the face of conflict, whereas those with less responsive partners (e.g., more avoidant partners) should show greater HPA reactivity. We found the predicted pattern for men, but not for women. Men with more secure partners (i.e., partners low in anxious-ambivalence and low in avoidance) evidenced the lowest levels of cortisol throughout the session. Furthermore, men with more insecure partners (i.e., high in avoidance and low in anxiety, high in anxiety and low in avoidance, or high in both anxiety and avoidance) showed greater reactivity; their cortisol levels remained higher through the session than for men with a more secure partner. Thus, men who had partners who were likely to be more emotionally responsive (e.g., secure partners) showed less HPA reactivity in the face of conflict, suggesting that their secure partners may help them to feel less distressed in a normatively stressful situation.

Overall, these findings differ somewhat from those obtained with self-report measure of affect. Although self-report studies have generally found similar patterns for men and women, this study suggests that the link between attachment style and less conscious measures of affective reactivity may differ for men and women. Even though

men and women interacted in an objectively similar situation, they may have differed in their perceptions of the situational context, which in turn, may have contributed to their patterns of physiological reactivity. This work highlights the importance of examining the link between attachment and affective reactivity and regulation using a wider range of measures that tap into different response systems.

### Implications and Future Directions for Research

#### Research on the Affective Bases of Attachment

Our recent work (Pietromonaco et al., 2004; Powers et al., 2004) suggests that individuals' own attachment style as well as their partner's attachment style contributes to their ability to regulate negative affect. Future work that investigates affect regulation within the context of the partnership and that examines this process over time will better capture the reciprocal nature of affect regulation efforts in adults' attachment relationships (e.g., see Diamond, 2001). In particular, it will be important to examine how the characteristics of both partners facilitate or impair attempts to regulate emotional distress, and whether these effects vary across different kinds of interpersonal stressors (e.g., relationship conflict vs. challenging tasks that are not directly connected to relationship issues).

In addition, although attachment differences are evident in the willingness to use others to cope with emotional distress, we know little about the conditions under which turning to an attachment figure serves to reduce negative affect or increase feelings of emotional security. For example, under what conditions do people high in anxious-ambivalence benefit from seeking help from an attachment figure, and under what conditions do such efforts exacerbate their distress? Furthermore, what makes it possible

for a partner to serve as an effective source of comfort, and does the nature of this ability vary depending on the recipient's general attachment security?

It also will be important to examine more directly whether people higher in anxious-ambivalence or avoidance (or both) are more sensitive to threat. If so, we will need to investigate whether this sensitivity is specific to attachment-relevant contexts, or whether it extends to non-relational but threatening contexts. Another important question concerns the extent to which people of different attachment styles differ in their bases rates for perceiving threat (i.e., Are some people more likely to perceive threat in situations that most others see as benign?). In addition, investigations will need to identify the mechanisms (e.g., the ability to effortfully control attention or to inhibit an inappropriate response) that are implicated in threat sensitivity.

To some extent, these questions concern whether differences in temperament, which has been defined in terms of emotional reactivity and self-regulation (e.g., Eisenberg & Fabes, 1992; Rothbart, Ahadi, & Evans, 2000), underlie attachment styles. Although considerable controversy exists about the degree of overlap between temperament and attachment, temperament is apt to serve as part of the context in which attachment relationships develop (Rothbart et al., 2000). For example, infants who are more prone to distress may differ in their experiences in attachment-related situations, and their greater reactivity also may make it harder for caregivers to respond sensitively. Likewise, adults who are more prone to emotional distress are apt to construe attachment-related situations differently from those who are less distress-prone, and it may be more difficult for them to direct their attention to use more deliberate strategies to regulate their feelings (Quigley & Feldman Barrett, 1999) and for their partners to help them regain a

sense of emotional well-being. In addition, researchers will need to look at a wider range of responses to threat by using methods that capture more automatic, implicit responses and more physiologically-based responses.

#### Implications for Interdisciplinary Collaboration and Clinical Intervention

Our work is grounded within social/personality psychology, but the study of the affective bases of attachment cuts across multiple areas. In particular, we see a pressing need for interdisciplinary collaborations with developmental and clinical psychologists and cognitive neuroscientists. First, attachment theory is rooted in developmental psychology, and any comprehensive view of attachment processes in adulthood must be tied to those in childhood. Collaborative work with developmental psychologists (particularly those with ties to behavioral genetics) will be critical for understanding the trajectory of emotional reactivity and regulation in attachment relationships from childhood to adulthood and the role of temperament. Second, attachment theory evolved, in part, from observations of clinical phenomena. Most of the work in social and personality psychology has examined attachment processes in young adults who fall within the normal range of psychological adjustment, but our work would be informed by examining these processes in individuals where affective processes have broken down (e.g., in those with anxiety or depressive disorders). Furthermore, much of the work has focused on young, dating couples who vary in the length of their relationships and in their degree of commitment, and it would be advantageous to extend this work to married couples, and in particular, to those experiencing distress (e.g., those in couples therapy). This extension would allow researchers to specify how affective reactivity and regulation operate within the context of clinically significant disorders in relationship functioning.

Similarly, couples who are facing normative stressors (e.g., the birth of a child) or atypical stressors (e.g., impaired physical health) provide an excellent context for investigating affective reactivity and regulation under clinically significant conditions. Third, knowledge in this area will be advanced by investigating the neuropsychological mechanisms that support emotional reactivity and regulatory processes in the context of attachment relationships.

Several barriers need to be overcome to facilitate such collaborations. For example, a lack of consensus exists between some developmental and social psychologists in the conceptualization of attachment phenomena and in how those phenomena should be studied. Also, collaborations between social psychologists and neuroscientists are not as frequent as they might be, in part, because researchers in each of these subareas must become familiar with a vastly different knowledge base. Social psychologists often need to seek additional training to learn about neurobiology and neuroscience, whereas neuroscientists need to become familiar with research and methods used in social-cognitive and behavioral research. Although social/personality and clinical researchers in this research area share much in common, pragmatic issues such as access to organizations and patient populations often impede such collaborations. In recent years, some bridges have been built through mini-conferences bringing together researchers across disciplines and through interdisciplinary edited volumes such as this one, providing a groundwork for forging research collaborations.

If individuals with heightened sensitivity to threat perceive threat in situations that are normatively non-threatening, then intervention efforts will need to address how to alter such patterns. Changing emotional reactivity to relationship threats is likely to be

difficult (see Quigley & Feldman Barrett, 1999) because emotional associations are not completely unlearned through extinction or counterconditioning. Instead, change might be most likely to occur through the development of more deliberate strategies to regulate emotion and through training to recognize biases that lead to the inappropriate identification of threat cues (Quigley & Feldman Barrett, 1999). For example, cognitive interventions that encourage couple members to generate alternative interpretations of threatening events (e.g., Baucom & Epstein, 2002) may serve to disrupt affective reactivity as well as instill more deliberate affect regulation strategies. Another type of intervention that may alter perceptions and responses to threat is emotionally focused therapy (Greenberg & Johnson, 1988). Emotionally focused therapy, which is grounded in attachment theory, explicitly aims to alter the affect underlying attachment representations by providing significant affective experiences within the context of marital therapy. In particular, this therapy seeks to promote the expression of each partner's needs for closeness and security and to facilitate interactions that increase security and that bolster the ability of each partner to be available and responsive to the other's needs (i.e., to serve as a secure base). As partners develop a more secure relationship, they may not perceive threat as frequently, and when they do, they are likely to be better able to regulate their emotional distress by relying on a partner who has learned to be more responsive and emotionally available.

Research that tests the efficacy of these interventions will provide important information about the mechanisms underlying the regulation of emotional distress. In turn, a more precise understanding of the mechanisms (e.g., difficulty with attentional focus, an inability to inhibit an inappropriate response) that lead some individuals to

experience difficulty with distress regulation in attachment relationships will allow for the development of more refined interventions.

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### Figure Caption

Figure 1. Connection between affective reactivity and regulation through reliance on others and adult attachment prototypes.

