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A Behavioral Systems Approach to Romantic Love Relationships:

Attachment, Caregiving, and Sex

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In the previous edition of this book (*The Psychology of Love*; Sternberg & Barnes, 1988), Shaver, Hazan, and Bradshaw proposed that romantic love can be conceptualized in terms of three behavioral systems discussed by Bowlby (1969/1982) in his ethological theory of attachment. Bowlby viewed attachment, caregiving, and sex (along with affiliation, exploration, and a few others) as innate motivational systems that had evolved over thousands of years because they increased the likelihood that infants would survive to reproductive age and be motivated to engage in sexual intercourse, thereby producing the next generation of attachment-oriented, care-providing, and sexually motivated human beings. In 1988, when *The Psychology of Love* was published, Bowlby's theory was unfamiliar to most personality and social psychologists. It was so focused on infant-parent relationships, in which the infant's attachment system and the parent's caregiving system serve complementary functions, that most psychologists who studied adolescents and adults did not view it as relevant to their work, even though Bowlby (1979, p. 129) claimed that the attachment system is active "from the cradle to the grave." If he had said more about the caregiving and sexual systems, he undoubtedly would have portrayed them as active across the lifespan as well.

The few personality-social psychologists who studied love in the 1980s tended to view it either as an attitude (e.g., Hendrick & Hendrick, 1989; Rubin, 1973) or in terms of Schachter's two-factor theory of emotion (e.g., Berscheid & Walster, 1974), because attitude research and cognitive approaches to emotion were popular at the time. It was also taken as axiomatic by social psychologists that romantic love was a cultural invention of Western civilization (e.g., Averill, 1985; de Rougement, 1940), which made reliance on biological or evolutionary concepts seem misguided.

Times have changed. Today, "evolutionary psychology" (e.g., Buss, 1999; Simpson, 1999) is a well-accepted approach to the study of cognition, emotion, and social behavior. And attachment theory, which is an evolutionary psychological theory, is central to both developmental and social psychology. As attachment theory has become more familiar to social psychologists, cultural anthropologists have also changed their tune with respect to the cross-

cultural universality of romantic love (e.g., Chisholm, 1999; Jankowiak, 1995). It has been observed in the literature, poetry, and everyday thoughts of every culture that has been well studied.

At the time when Shaver et al. (1988) were preparing their chapter for the Sternberg and Barnes book, Hazan and Shaver (1987) also published an article in the *Journal of Personality and Social Psychology* (*JPSP*) that contained the rudiments of a behavioral systems approach to romantic love as well as a simple measure of attachment styles in romantic relationships. That article became one of the 10 most cited papers in *JPSP*'s 35-year history. Thus, our task in the present chapter is not to defend or argue for attachment theory, or for behavioral systems theory more generally, as an approach to love, but to summarize what has been learned about the theory's potential and limitations since 1988. We also want to explain what remains to be done to conceptualize love in terms of innate behavioral systems and the individual differences in parameters of these systems that seem to emerge in the course of development. Because there is now abundant empirical information about the three behavioral systems, it is possible to say something about their interrelations. We continue to recommend the Shaver et al. (1988) chapter to readers interested in the application of attachment theory to romantic love, because it contains detailed comparisons of the emotional and behavioral similarities between infant-caregiver attachment and romantic attachment. In the present chapter, however, those details have been replaced by a review of literature on romantic attachment that has grown out of the previous chapter and Hazan and Shaver's (1987) early studies.

We begin with a brief explanation of Bowlby's theory and its key motivational construct, the behavioral system. We then describe the normative and individual-difference components of the attachment, caregiving, and sexual behavioral systems, while introducing a model of behavioral-system activation and suppression and showing how systematic individual differences in parameters of behavioral systems help to explain the dynamics of romantic love. We then summarize what has been learned about how these individual differences affect the quality of romantic relationships as well as the dynamic interplay among the attachment, caregiving, and

sexual systems within the context of these relationships. Toward the end of the chapter we discuss the desirability of theoretical integration, especially with the triangular theory of love (Sternberg, 1987) and interdependence theory (e.g., Holmes & Cameron, 2005; Thibault & Kelley, 1959).

Operating Parameters of the Attachment, Caregiving, and Sexual Behavioral Systems

In this section we explain Bowlby's (1969/1982) key motivational construct, the behavioral system, and delineate the operating parameters of the three major behavioral systems thought to be involved in romantic relationships – attachment, caregiving, and sex. In Table 1, we present a schematic summary of the normative and individual-difference parameters of these three systems.

In explaining the motivational basis of proximity-seeking, caregiving, and sexual behaviors, Bowlby (1969/1982) borrowed from ethology the concept of *behavioral system* – a species-universal neural program that governs the choice, activation, and termination of behavioral sequences so as to produce a functional change in the person-environment relationship that has adaptive advantages for survival and reproduction. Each behavioral system involves a specific set-goal (e.g., attaining a sense of safety and security, relieving others' distress and promoting their welfare, passing one's genes to the next generation by becoming pregnant or impregnating a partner) and a set of interchangeable, functionally equivalent behaviors that constitute the *primary strategy* of the system for attaining its particular goal state (e.g., attaining safety and security through proximity-seeking, protecting or comforting another person, sexually seducing another person). These behaviors are automatically "activated" by certain stimuli or kinds of situations that make a particular set-goal salient (e.g., loud noises that signal danger, an encounter with a distressed or needy person, the appearance in one's life of an attractive potential sex partner), and "deactivated" or "terminated" by other stimuli or situations that signal attainment of the desired goal state (Bowlby, 1969/1982). Since each behavioral system was evolutionarily 'designed' to increase the likelihood of adaptation to environmental demands, its optimal functioning has important implications for mental health and adjustment.

Bowlby (1969/1982) also assumed that behavioral systems include "ontogenetically learned" adjustments reflecting a person's history of transactions with the environment in which a behavioral system was activated and either succeeded or failed at attaining the desired goal state. Since the ability of a behavioral system to achieve its set-goal depends on a person's actual transactions with the world, each system includes cognitive-behavioral mechanisms, such as monitoring and appraising the effectiveness of behaviors emitted in a particular context, that allow flexible, goal-corrected adjustment of the system's 'programming' when necessary to put the individual back on the track of goal attainment. Over time, after operating repeatedly in certain environments, a person's behavioral systems become molded by social encounters, 'programming' the neural/behavioral capacities so that they fit the behavior of important relationship partners (e.g., parents) and yield effective action in that relational environment. Through this process, a person learns to conform his or her behavioral systems to contextual demands and forms reliable expectations about possible access routes and barriers to goal attainment. These expectations (which Bowlby, 1973, called "*internal working models of self and others*") become part of a behavioral system's programming and are the bases of both individual differences and within-person continuity of the system.

Changes in a behavioral system's programming can also include disengagement from the primary strategy following recurrent failure to attain the system's set-goal. These failures are a major source of frustration, pain, and distress; they create negative working models of self and others (e.g., "I don't have the resources necessary to help my partner," "I cannot trust my partner in times of need") and signal that the primary strategy should be replaced by alternative ("secondary") strategies. Attachment theorists (e.g., Cassidy & Kobak, 1988; Mikulincer & Shaver, 2003) have emphasized two such secondary strategies: hyperactivation and deactivation of the system. Hyperactivating strategies are "fight" (or "persist" or "protest") responses that intensify the primary strategy of a system in order to coerce a relationship partner to behave in accordance with the system's goals (e.g., to provide greater support, accept more of one's help, have sex or have it more often or in a more satisfying way); they keep a behavioral system

chronically activated until its set-goal is achieved. These responses are learned in social environments that place (or placed, in the person's developmental history) a person on a partial reinforcement schedule for persistence or insistence (through sporadic experiences of goal attainment). They are based on what a person interprets to be rewards for energetic, even strident, applications of the primary strategy, because these applications seem, at least sometimes, to succeed (or to have succeeded in the past). Unfortunately, while sometimes successful with at least some interaction partners, these responses depend on a heightening of distress and a persistence of worries about one's own efficacy and social value, and they can easily encourage intrusive, controlling, and aggressive responses that lead to relationship dysfunction, partner dissatisfaction, and eventual rejection or abandonment – ironically and tragically, the outcomes most dreaded by the hyperactivating person.

In contrast, deactivating strategies are "flight" (or avoidance) responses that require turning off or (to use Bowlby's term) terminating a behavioral system in an effort to avoid the frustration, pain, and distress caused by rebuffed efforts to attain the system's goal. These responses are thought to develop during interactions with relationship partners who disapprove of and even punish expressions of a system's primary strategy (e.g., proximity-seeking, caring or helping, or showing sexual interest). In such social encounters, an individual learns to expect better outcomes if signs of the primary strategy are hidden or suppressed, and the behavioral system in question is deactivated despite not having attained its goal. The problem with these strategies is that they require a narrowing of interpersonal activities (e.g., being intimate, providing care, or engaging in enjoyable sexual intercourse), result in frequent failure to achieve important goals, and deter a person from realizing that not all new relationship partners make the same dysfunctional demands as previous partners did on a particular behavioral system. In short, some of life's most rewarding experiences are foregone in an attempt to avoid certain kinds of frustration, disappointment, and punishment.

The Attachment Behavioral System

The presumed biological function of the attachment system is to protect a person (especially during infancy and early childhood) from danger by assuring that he or she maintains proximity to caring and supportive others (*attachment figures*). The goal of the system is objective protection or support and the concomitant subjective sense of safety or security (which Sroufe & Waters, 1977, called "felt security"). The negative emotions experienced by a person in relation to this behavioral system are especially intense when he or she encounters actual or symbolic threats and notices that an attachment figure is not sufficiently near, interested, or responsive (Bowlby, 1969/1982). In such cases, the attachment system is activated and the individual is driven to seek and reestablish actual or symbolic proximity to an external or internalized attachment figure (the system's primary strategy) until the set-goal of felt security is attained. Bowlby (1969/1982, 1988) assumed that, although the effects of attachment-system activation are most easily observed during infancy, the system continues to function throughout life, as indicated by adults' needs for proximity, support, and security (Hazan & Zeifman, 1999).

Smooth functioning of the attachment system requires that an attachment figure be available in times of need, sensitive and responsive to the individual's bids for proximity, and effective in alleviating the individual's distress. Such positive interactions promote an inner sense of attachment security (based on expectations that key people will be available and supportive in times of need) and lead to the consolidation of security-based strategies of affect regulation (Mikulincer & Shaver, 2003). These strategies are aimed at alleviating distress; forming comfortable, supportive intimate relationships; and increasing personal adjustment without generating negative side effects (strategies that Epstein & Meier, 1989, called "constructive ways of coping"). Security-based strategies consist of optimistic beliefs about distress management; faith in others' goodwill; a sense of being loved, esteemed, understood, and accepted by relationship partners; and a sense of self-efficacy with respect to gaining proximity to a loving partner when support is needed. These strategies also involve acknowledging and expressing feelings of distress or vulnerability and seeking emotional

support in order to down-regulate distress in the service of problem-focused coping (Mikulincer & Shaver, 2003).

When a person's attachment figures are not reliably available and supportive, a sense of attachment security is not attained and the primary strategy is replaced by either hyperactivating or deactivating strategies. Hyperactivation of the attachment system is manifested in energetic, insistent attempts to get a relationship partner, viewed as insufficiently available or responsive, to pay attention and provide care and support. The strategies include clinging and controlling responses, cognitive and behavioral efforts to establish not only physical contact but also perceived self-other similarity and 'oneness', and overdependence on relationship partners as a source of protection (Shaver & Mikulincer, 2002). Hyperactivation keeps the attachment system chronically activated, constantly on the alert for threats, separations, and betrayals, thereby exacerbating relational distress and conflicts (Mikulincer & Shaver, 2003). Deactivation of the attachment system involves denial of attachment needs; avoidance of closeness, intimacy, and dependence in close relationships; maximization of cognitive, emotional, and physical distance from others; and striving for self-reliance and independence (Shaver & Mikulincer, 2002). It also involves active inattention to threatening events and personal vulnerabilities as well as inhibition and suppression of thoughts and memories that evoke distress and feelings of vulnerability, because such thoughts can cause unwanted activation of the attachment system which the person believes will not result in desirable outcomes (Fraley, Davis, & Shaver, 1998).

The Caregiving Behavioral System

According to Bowlby (1969/1982), the caregiving system was crafted by evolution to provide protection and support to others who are either chronically dependent or temporarily in need. Its goal is truly altruistic, and it responds to signals of need emitted by another person's attachment system. The set-goal of the caregiving system is the reduction of another person's suffering (which Bowlby, 1969/1982, called providing a "safe haven") or fostering another person's growth and development (which Bowlby, 1969/1982, called providing a "secure base for exploration"). The primary strategy for achieving these goals is to adopt what Batson (1991)

called an empathic attitude – for example, taking the perspective of a relationship partner in order to sensitively and effectively help the partner reduce distress or encourage positive growth and development. The caregiving system is focused on another person's welfare and therefore directs attention to the other's needs, wishes, emotions, and intentions rather than one's own emotional state. In the realm of romantic relationships, one partner's caregiving system is automatically activated by the other partner's attachment behaviors or signals of need, and the goal is to alter the needy partner's condition until signs of increased safety, well-being, and security are evident.

Smooth functioning of the caregiving system depends on an individual's ability and willingness to empathically and effectively help a needy partner, and also on the partner's responsiveness to the individual's caregiving bids. These positive interactions promote an inner sense of what Erikson (1950) called "generativity" – a sense that one is more than an encapsulated self and is able to contribute importantly to others' welfare. It is a truly altruistic, compassionate form of love (which Lee, 1977, called "agape") aimed at alleviating distress and benefiting others. The sense of generativity includes good feelings about oneself as having good qualities and being able to perform good deeds; strong feelings of self-efficacy for being helpful when needed; confidence in one's interpersonal skills; and heightened feelings of love, communion, and connectedness with respect to a relationship partner. In other words, as with the other behavioral systems, smooth functioning of the caregiving system leads to positive feelings towards the self, even though its primary goal is to benefit others.

As in the case of the attachment system, dysfunctions of the caregiving system can trigger either hyperactivating or deactivating strategies. Hyperactivated caregiving strategies are intrusive, poorly timed, and effortful; they are intended to make oneself indispensable to a partner and to feel competent as a caregiver. These goals can be achieved by exaggerating appraisals of others' needs, adopting a hypervigilant attitude toward others' distress, performing actions aimed at coercing others to accept one's caregiving bids, and focusing on others' needs to the neglect of one's own. On the other hand, deactivating strategies result in inhibition of

empathy and effective caregiving combined with increased interpersonal distance precisely when a partner seeks proximity. Consequently, a deactivated caregiving system entails less sensitivity and responsiveness to others' needs, dismissal or downplaying of others' distress, suppression of thoughts related to others' needs and vulnerability, and inhibition of sympathy and compassion.

The Sexual Behavioral System

From an evolutionary perspective, the major function of the sexual system is to pass genes from one generation to the next (Buss & Kenrick, 1998). The set-goal of the system is to have sexual intercourse with an opposite-sex partner and either become pregnant oneself (in the case of women) or impregnate a partner (in the case of men). The goal often becomes particularly salient when a person encounters an attractive, sexually interested or aroused, or fertile opposite-sex partner. The primary strategy for achieving the set-goal is to approach such a partner, persuade him or her to have sex, and engage in genital intercourse. That is, the primary strategy of the sexual system consists of bringing fertile partners together to have sex by heightening sensitivity to signals of fertility and interest in opposite-sex partners, increasing one's attractiveness as a potential sexual partner, and using effective persuasive techniques to seduce a potential partner. From this perspective, sexual attraction is a motivating force that drives individuals to look for either short-term or long-term mating opportunities with potential sex partners (e.g., Buss, 1999). (The less common case of homosexual attraction is beyond the scope of the present chapter, but it has been insightfully discussed in relation to attachment theory by Diamond, in press.)

Smooth functioning of the sexual system requires coordination of two partner's motives and responses. It depends on one's ability to attract a partner and convince him or her to have sex, and on the partner's availability, sensitivity, and responsiveness to one's sexual bids. These mutually coordinated interactions can lead to sexual encounters in which both partners gratify their sexual needs and have enjoyable, orgasmic experiences. Moreover, they produce feelings of vitality and energy (which Ryan & Frederick, 1997, called "subjective vitality"); perception of oneself as attractive and potent; a strong sense of self-efficacy for attracting relationship partners

and having sex when desired; feelings of being loved and esteemed; and enhanced feelings of love, gratitude, intimacy, and communion toward a particular relationship partner.

Dysfunctions of the sexual behavioral system, like dysfunctions of the other systems, can be conceptualized in terms of hyperactivating and deactivating strategies. Hyperactivating strategies involve effortful, mentally preoccupying, sometimes intrusive, and even coercive attempts to persuade a partner to have sex. In the process, a person can overemphasize the importance of sexual activities within a relationship, exaggerate appraisals of a partner's sexual needs, and adopt a hypervigilant stance toward a partner's signals of sexual arousal, attraction, or rejection. In contrast, deactivating strategies are characterized either by inhibition of sexual desire and an erotophobic, avoidant attitude toward sex or a superficial approach to sex that divorces it from other considerations, such as kindness and intimacy. Deactivating sexual strategies include dismissal of sexual needs, distancing from or disparaging a partner when he or she expresses interest in sex, suppression of sex-related thoughts and fantasies, repression of sex-related memories, and inhibition of sexual arousal and orgasmic joy. They can also, paradoxically, promote sexual promiscuity driven by narcissism or self-enhancement without an intense sexual drive or even much enjoyment of sex per se (Schachner & Shaver, 2004).

Measurement Issues

Because Shaver et al.'s (1988) chapter in the first edition of *The Psychology of Love* focused mainly on the conceptualization and measurement of individual differences in the attachment system, an enormous body of research has grown up around these individual differences without anyone paying much attention to variations in the other behavioral systems involved in romantic love, namely caregiving and sex. As a result, we have highly reliable and construct-valid instruments for assessing hyperactivation and deactivation of the attachment system, but less programmatic and less theoretically sound assessment tools for studying individual differences in the caregiving and sexual systems.

In the attachment realm, Hazan and Shaver (1987) initially created a simple three-category (secure, anxious, avoidant) measure of what came to be called "attachment style" – the

habitual pattern of relational expectations, emotions, and behaviors that results from a particular history of attachment experiences. Subsequent studies (e.g., Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998) indicated, however, that attachment styles are more appropriately conceptualized as regions in a continuous two-dimensional space. The first dimension, attachment *avoidance*, reflects the extent to which a person distrusts relationship partners' goodwill, deactivates the attachment system, and strives to maintain behavioral independence and emotional distance from partners. The second dimension, attachment *anxiety*, reflects the degree to which a person worries that a partner will not be available in times of need and engages in hyperactivating strategies. People who score low on both dimensions are said to be secure or securely attached. The two dimensions can be measured with reliable and valid self-report scales, such as the Experience in Close Relationships scale (ECR; Brennan et al., 1998), and they are associated in theoretically predictable ways with affect regulation, self-esteem, psychological well-being, and interpersonal functioning (see Mikulincer & Shaver, 2003; Shaver & Clark, 1994; Shaver & Hazan, 1993, for reviews).

In the caregiving domain, no assessment device has been constructed to assess hyperactivating and deactivating strategies. However, an item analysis of the existing self-report measures of caregiving responses reveals that they do tap aspects of these dysfunctions. For example, Davis's (1983) Interpersonal Reactivity Index includes an Empathic Concern subscale that taps variations (mostly on the low end) of the deactivating dimension (e.g., "I often have tender, concerned feelings for people less fortunate than me") and a Personal Distress subscale that taps the self-focused aspects of the hyperactivating dimension (e.g., "Being in a tense emotional situation scares me"). Kunce and Shaver's (1994) measure of caregiving within romantic relationships includes items gauging distance from a suffering partner and lack of sensitivity to signals of need (e.g., "I sometimes push my partner away even though s/he seems to need me," "I sometimes miss the subtle signs that show how my partner is feeling") as well as items tapping anxious, compulsive caregiving (e.g., "I tend to get overinvolved in my partner's problems and difficulties"). However, relationship researchers still lack a reliable and valid

measure that, like the ECR scale in the attachment domain, is explicitly designed to assess variations in hyperactivating and deactivating caregiving strategies.

As in the caregiving domain, no research instrument has been designed to assess hyperactivation and deactivation of the sexual behavioral system. Still, we can gain important insights from scales designed to assess sexual attitudes and behaviors. For example, the erotophilia-erotophobia scale (Fisher, Byrne, White, & Kelley, 1988) assesses the tendency to respond to sexual stimuli in approach or avoidance terms, and this comes close to our understanding of the deactivation dimension (e.g., "I feel no pleasure during sexual fantasies"). The Revised Mosher Guilt Inventory (Mosher, 1988), the Sex Anxiety Inventory (Janda & O'Grady, 1980), and the Experience of Heterosexual Intercourse scale (Birnbaum & Laser-Brandt, 2002) assess some of the worry-related aspects of sexual-system hyperactivation (e.g., "Bothersome thoughts disturb my concentration during sexual intercourse").

Attachment, Caregiving, and Sex Within Romantic Relationships

In this section, we present ideas and research concerning how individual variations in the parameters of the attachment, caregiving, and sexual systems affect the quality of romantic love. In our view, individual differences in these three systems are important for understanding romantic love, because their smooth functioning brings relationship partners together, increases physical and emotional closeness, heighten feelings of love and gratitude toward the partner as well as feelings of being loved and esteemed by the partner. The smooth operation of these three systems is crucial for forming and maintaining intimate, satisfying, and long-lasting romantic relationships.

With respect to Sternberg's (1986) triangular theory of love, optimal functioning of the attachment, caregiving, and sexual systems enlarges the area of the 'love triangle' by increasing the intensity of its three components – intimacy, commitment, and passion. As explained earlier, smooth functioning of the three behavioral systems tends to create feelings of communion, connectedness, and togetherness with a relationship partner, thereby sustaining the "intimacy" component of romantic love. The attachment and caregiving systems strengthen the

"commitment" component of romantic love as conceptualized by Sternberg. Positive interactions with a partner who is available and responsive in times of need generate not only a sense of security but also feelings of gratitude and love toward this sensitive and responsive person, which in turn motivates the secure person to stay in the relationship and commit himself or herself to maintain it and promote the partner's welfare. Moreover, positive interactions in which a person is effective in promoting a partner's welfare strengthen the caregiver's emotional involvement in the relationship as well as his or her feelings of responsibility for the partner's condition, thereby sustaining the "commitment" component of romantic love. Finally, the "passion" component of romantic love is closely related to the activation and functioning of the sexual behavioral system, which creates feelings of attraction, arousal, vitality, and excitement within the relationship.

Attachment researchers have been successful in generating a large body of theory-consistent findings showing that secure attachment is associated with higher levels of relationship stability and satisfaction in both dating and married couples (see Mikulincer, Florian, Cowan, & Cowan, 2002; Shaver & Mikulincer, in press, for extensive reviews). Studies have also linked secure attachment with higher scores on measures of relationship intimacy and commitment (e.g., Collins & Read, 1990; Mikulincer & Erev, 1991; Shaver & Brennan, 1992; Simpson, 1990) as well as relationship-enhancing patterns of emotional reactions to partner behaviors and adaptive strategies of conflict resolution (e.g., Rholes, Simpson, & Orina, 1999; Scharfe & Bartholomew, 1995). There is also extensive evidence showing that secure attachment is associated with both positive expectations about a partner's behavior (e.g., Baldwin et al., 1993; Mikulincer & Arad, 1999) and relationship-enhancing explanations of a partner's negative behaviors (e.g., Collins, 1996; Mikulincer, 1998). In the domain of caregiving, evidence is rapidly accumulating that relational episodes in which an individual sensitively attends to and empathically responds to a romantic partner's attachment behaviors and signals of need lead to heightened feelings of intimacy and love (Reis & Patrick, 1996) and enhanced relationship satisfaction in both the caregiver and his or her partner (e.g., Collins & B. Feeney, 2000; B.

Feeney, 2004; B. Feeney & Collins, 2003). There is also growing evidence that sexual interactions in which both partners gratify their sexual needs contribute to relationship satisfaction and stability (see Sprecher & Cate, 2004, for an extensive review) and heighten feelings of love and commitment (e.g., Pinney, Gerrard, & Denney, 1987; Sprecher & Regan, 1998; Waite & Joyner, 2001).

We believe that dysfunctions of the attachment, caregiving, and sexual systems, viewed in terms of the hyperactivation and deactivation dimensions, are crucial for understanding pathologies of romantic love, relational tensions and conflicts, and erosion of affectional bonds. In the domain of attachment, hyperactivating strategies lead anxiously attached people to feel chronically frustrated due to their unfulfilled need for demonstrations of love and support, to catastrophically appraise interpersonal conflicts, to exaggerate relational worries and doubts about a partner's goodwill, and to intensify emotional and behavioral reactions to even minimal signs of a partner's unavailability or disinterest (e.g., Collins, 1996; Shaver & Brennan, 1992; Simpson et al., 1999). As a result, these strategies may cause a partner to feel poorly served by the anxiously attached person's frequent suspicions and demands for security; engulfed by his or her desire for merger; and controlled by his or her clinging behavior and hypervigilance. These negative feelings may cause partners to distance themselves from an anxiously attached person, which in turn is likely to intensify his or her insecurity. In this way, a self-amplifying dyadic cycle of dissatisfaction can be created which eventually destroys a romantic relationship.

Deactivation of the attachment system also has negative effects on relationship quality and stability. It reduces a person's emotional involvement, commitment, and intimacy (e.g., Collins & Read, 1990; Feeney & Noller, 1990; Shaver & Brennan, 1992) and can cause partners to feel frustrated because their bids for intimacy and affection are rebuffed and their signals of need and distress are dismissed or ignored. Moreover, avoidant individuals' tendency to evade discussions of relational problems (e.g., Gaines et al., 1997; Scharfe & Bartholomew, 1995) may leave conflicts unresolved and increase a partner's irritation and anger. As a result, relationship satisfaction erodes and the likelihood of dissolution increases.

Dysfunctions of the caregiving system – failure to respond empathically to a partner's needs and refusal to help the partner alleviate distress – are also an important source of relational tensions and conflicts, which can reduce intimacy and commitment and evoke a host of relationship-damaging worries, attitudes, and behaviors (e.g., Collins & B. Feeney, 2000; B. Feeney, 2004; B. Feeney & Collins, 2003). Hyperactivating strategies are accompanied by heightened personal distress and doubts about caregiving efficacy when a partner needs help, which in turn impairs the effectiveness of caregiving responses and leaves the partner frustrated and overwhelmed by unresolved distress and frustration about one's helplessness to deal with it. These strategies foster intrusive and controlling behaviors aimed at coercing others to accept one's caregiving bids, which in turn result in rejection by the partner, increased relational distress, and acceleration of dysfunctional 'caregiving' responses (Kunce & Shaver, 1994). Deactivating strategies involve distancing from a partner every time he or she expresses signs of vulnerability or distress, which in turn increases the needy partner's attachment insecurities and strengthens negative representations of the avoidant person as unavailable, cold, and rejecting (Collins & B. Feeney, 2000). These insecurities and negative beliefs can erode a needy partner's feelings of romantic love and decrease the likelihood of staying in a frustrating relationship.

Hyperactivation of the sexual system within a romantic relationship can also have negative effects on romantic love and relationship satisfaction and stability. Chronic sexual-system activation is accompanied by heightened anxieties and worries about one's sexual attractiveness, the extent to which one is able to gratify one's partner, and the partner's responses to one's sexual appeals (Birnbaum & Laser-Brandt, 2002). These anxieties and worries may encourage intrusive or aggressive responses aimed at coercing the partner to have sex, which in turn can heighten the frequency of sex-related conflicts, thereby leading to relationship dissatisfaction (Long, Cate, Fehsenfeld, & Williams, 1996). Adoption of a distancing attitude every time a partner expresses sexual interest combined with inhibition of sexual arousal and orgasmic joy – all being common features of deactivating sexual strategies – can leave a partner sexually frustrated, heighten doubts about being attractive and loved, and encourage interest in

alternative partners (e.g., Hurlbert, Apt, Hurlbert, & Pierce, 2000). Recurrent sexual frustration can erode the passion and intimacy that sustain a romantic relationship.

Interplay Between the Attachment, Caregiving, and Sexual Systems

In the first edition of *The Psychology of Love*, Shaver et al. (1988) formulated explicit hypotheses about how individual variations in the functioning of the attachment system might bias the functioning of the caregiving and sexual systems. Since the attachment system appears first in development (during the first year of life), its pattern of functioning and specific forms of dysfunction, either hyperactivation or deactivation, can affect the other two systems, which appear later in development. (Empathic reactions to a suffering or needy person appear as early as 2 or 3 years of age [e.g., Kestenbaum, Farber, & Sroufe, 1989], and overt genital sexuality appears at puberty.) Although Shaver et al.'s (1988) rationale was based on Bowlby's theoretical writings about the interplay of behavioral systems, there was no empirical evidence for their hypotheses about the ways in which attachment anxiety and avoidance might affect caregiving and sex. With the progress of research on adult attachment processes, however, this empirical gap is beginning to be filled (e.g., Collins & B. Feeney, 2000; Kunce & Shaver, 1994; Schachner & Shaver, 2004). In this section, we present a brief review of the accumulating evidence.

Attachment and Caregiving

According to Bowlby (1969/1982), activation of the attachment system interferes with non-attachment activities, which are conceptualized as products of other behavioral systems. This process was demonstrated in Ainsworth et al.'s (1978) research on the inhibition of children's exploration in a laboratory Strange Situation when an attachment figure was asked to leave the room. The same kind of inhibition often occurs in romantic relationships (Kunce & Shaver, 1994) when a person who is asked to act as a caregiver for his or her needy partner also feels insecure, distressed, or in need of support and comfort. Under such conditions, the person generally turns to others for support rather than thinking first about providing support for a partner. Only when the person restores his or her sense of attachment security and repairs his or

her negative mood, he or she can easily direct attention and energy to caregiving activities and perceive a partner as someone who needs and deserves comfort and support.

Reasoning along these lines, Shaver et al. (1988) hypothesized that securely attached people would be more likely than insecure people to provide effective care to a needy partner, because experiencing a sense of security is related to holding optimistic beliefs about distress management and maintaining a sense of self-efficacy when coping with distress. Furthermore, Shaver et al. (1988) hypothesized that attachment anxiety and avoidance would lead to different problems in caregiving. Specifically, avoidant people, who distance themselves from emotional partners and dismiss signals of need, should be less willing to feel compassionate toward a needy partner and less willing to provide care. In contrast, anxiously attached people, who seek closeness to romantic partners and are often preoccupied with their own needs, should react to others' suffering with personal distress rather than empathy, which is likely to produce insensitive, intrusive, ineffective care.

There is now considerable evidence that attachment security is associated with responsive and sensitive caring for romantic partners. For example, several studies have used self-report measures of caregiving responses and found that secure individuals describe themselves as more likely than insecure ones to provide emotional support to their distressed partners (e.g., Carnelley, Pietromonaco, & Jaffe, 1996; J. Feeney, 1996; J. Feeney & Hohaus, 2001; Kunce & Shaver, 1994). In addition, whereas avoidant people maintain distance from a needy partner, anxious ones get overly involved with their partner's problems and exhibit compulsive, intrusive caregiving. These findings have been consistent across both self-reports and partner reports.

Self-report findings on the link between attachment security and sensitive caregiving have been bolstered by observational studies in which dating couples were videotaped while one partner waited to undergo a stressful experience (e.g., B. Feeney & Collins, 2001; Simpson, Rholes, & Nelligan, 1992; Simpson, Rholes, Orina, & Grich, 2002). Overall, secure participants in these studies spontaneously offered more support to their distressed partners. Moreover, participants who were relatively secure and whose dating partners sought more support

responded appropriately and provided more support, whereas secure participants whose partners sought less support actually provided less. In contrast, more avoidant people provided less support, regardless of how much support their partner sought. Similar findings were reported by Collins and B. Feeney (2000), who videotaped dating couples while one member disclosed a personal problem to a partner.

Attachment and Sex

Following Bowlby's (1969/1982) ideas about the interference between behavioral systems, especially the attachment system's apparent dominant influence in many cases of inter-system conflict, Shaver et al. (1988) hypothesized that anxiously attached people, who mainly seek their own protection and security, would have trouble attending accurately to their partner's sexual needs and preferences. Anxious people were expected to have difficulty maintaining the relatively relaxed and secure state of mind that fosters mutual sexual satisfaction (Shaver et al., 1988). Avoidant attachment was also expected to interfere with or distort the sexual system (Shaver et al., 1988), but in this case the interference would derive from lack of care or emotional closeness. Avoidant attachment encourages emotional distance, whereas lovers' mutual exploration of sexual needs and pleasures often requires or encourages psychological intimacy and a degree of openness, hence of vulnerability. This heightened closeness can cause avoidant people to feel uncomfortable during sexual intercourse.

Evidence is accumulating that attachment processes shape sexual motives, experiences, and behaviors. As compared with insecure people, secure ones (i.e., those who are low on anxiety and avoidance) are more motivated to show love for their partner during sex, more open to sexual exploration, more likely to have a positive sexual self-schema, and less likely to experience negative emotions during sexual encounters (e.g., Brennan, Wu, & Loev, 1998; Cyranowski & Andersen, 1998; Davis, Shaver, & Vernon, 2004; Hazan & Zeifman, 1994; Tracy, Shaver, Albino, & Cooper, 2003). There is also evidence that people scoring high on avoidance are less likely to have and enjoy mutually intimate sex, and are more likely to engage in sex to manipulate or control their partner, protect themselves from the partners' negative feelings, or

achieve other non-romantic goals, such as reducing stress or increasing their prestige among their peers (Davis et al., 2004; Tracy et al., 2003; Schachner & Shaver, 2004). Anxiously attached people tend to use sex as a means of achieving personal reassurance and avoiding abandonment, even when particular sex acts are otherwise unwanted (Davis et al., 2004; Tracy et al., 2003; Schachner & Shaver, 2004).

A Behavioral-System Perspective on Relational Interdependence

Our analysis of romantic love in terms of attachment, caregiving, and sex has much in common with interdependence theories of close relationships (e.g., Holmes & Cameron, 2005; Thibault & Kelley, 1959), which focus on interpersonal interactions as the units of analysis and emphasize the influence of one person's responses on another person's cognitions, emotions, and behaviors. As mentioned earlier, behavioral systems produce relational behavior (proximity-seeking, caregiving, or sexual bids) and are sensitive to the relational context in general and to the relationship partner's particular responses on a specific occasion. In fact, the optimal functioning of the attachment, caregiving, and sexual systems depends on a partner's availability, sensitivity, and acceptance (see Table 1). Moreover, the quality of this functioning has important effects on a partner's relational feelings and behaviors as well as one's own behavioral-system activation and functioning. In other words, the operation of each partner's behavioral systems is affected by his or her own working models, his or her partner's working models, and the specific pattern of interaction that emerges between the two partners within a particular relational context.

Unlike interdependence theory, however, our perspective on romantic love is not exclusively relational. Every person enters a particular relationship with a history of behavioral-system functioning and with internal working models that shape relational feelings and behaviors and that bias appraisals and interpretations of a partner's emotions and behaviors. As a result, the power of a specific partner's responses to modify one's habitual pattern of behavioral-system functioning is dramatically tempered by subjective appraisal biases induced by one's own working models. In the domain of attachment, for example, anxious people's hyperactivating

strategies intensify the vigilant monitoring of attachment-figure behaviors and slant perceptions in the direction of noticing or imagining insufficient interest, availability, and responsiveness. Avoidant individuals' deactivating strategies interfere with the monitoring of cues concerning either the availability or unavailability of an attachment figure, increasing the likelihood that genuine signals of attachment-figure availability will be missed (Mikulincer & Shaver, 2003). As a result, partner responses are interpreted in ways that they fit with and reinforce internal working models and habitual patterns of behavioral-system functioning, thereby minimizing the power of these responses to change the operation of the behavioral system in question.

Our analysis of behavioral-system functioning is sensitive to both context and personality (as explained and demonstrated in our several reviews of the literature concerning the attachment-theory approach to love; e.g., Mikulincer & Shaver, 2003). On one hand, behavioral-system activation and functioning can be affected by specific partner responses, which initiate a bottom-up process in the hierarchy of a person's working models, activating congruent mental representations, and producing immediate changes in behavioral-system functioning. On the other hand, this functioning is affected by chronically accessible working models, which bias the appraisals of a partner's intentions and responses. These biases are part of a top-down process by which a behavioral system functions in accordance with chronic working models. Overall, we acknowledge the importance of both the relational context in which a behavioral system is activated and person-specific variations resulting from relationship experiences and chronically accessible working models.

The differences between interdependence theory and our behavioral-system perspective on romantic love are specific cases of the general tension between "person" and "situation" emphases in personality and social psychology (e.g., Mischel & Shoda, 1995). No one doubts that securely attached people, for example, can be more or less secure depending on relational context, but across such contexts (especially ones a particular person has chosen to enter) they are, on average, more secure than insecure. Thus, if a researcher wants to know how people will react in various relational contexts, it makes sense to characterize the contexts in terms of their

shaping influence on behavioral-system functioning and understand the effects they have on up- or down-regulating proximity, intimacy, caring, sexuality, and love. If one wishes to know, instead, how typical secure people's brains or behavioral reactions differ on average from the brains and behavioral reactions of insecurely attached people (e.g., Gillath, Bunge, Shaver, Wendelken, & Mikulincer, under review; Mikulincer, Gillath, & Shaver, 2002), a fairly generic lab situation may be adequate to reveal the differences. We have repeatedly found theoretically predictable effects of attachment style across a wide range of situations.

This raises important questions about the specificity versus generality of individual differences in behavioral-system functioning which researchers might wish to conceptualize and measure. In the personality field, going back to the time of Allport (1955) and early Eysenck (1947), there has been considerable discussion of the hierarchy of "habits" or "traits" one encounters when studying personality. Eysenck (1947) talked about a personality hierarchy that includes, from the bottom up, particular situation-specific behaviors, habitual kinds of behavior, aggregates of types of behavior, traits, and mega-traits. The current Big Five personality scales (e.g., Costa & McCrae, 1982) include "facets," which are lower-level traits, and each facet scale contains items that refer to even more specific kinds of proclivities and behaviors. Similarly, on the situational side, one can talk about my relationship with "Margaret," my relationships with women, my relationships with peers of both genders, my relationships with people of all ages and genders, and even my relationships with "all sentient beings" (commonly mentioned in the literature of Buddhism). No doubt, in both the trait hierarchy and the hierarchy of relational situations there are many different levels of specificity or abstraction. When we look at things abstractly we miss many particulars and when we look at specific behaviors in specific situations we miss many of a person's general tendencies or traits. We think particular research questions should determine which phenomena, and at which levels, we decide to focus on. When studying the "secure" vs. "insecure" mind, for example, we doubt that much will be gained by measuring specific working models concerning a specific relational context. However, when examining interpersonal interactions in a specific romantic relationship or a specific relational context, we

will reap benefits by measuring both generic and relationship-specific cognitions and emotions concerning attachment, caregiving, and sex.

Concluding Remarks

Almost 20 years ago, Shaver et al. (1988) proposed that romantic love could be fruitfully conceptualized in terms of three behavioral systems identified by Bowlby (1969/1982): attachment, caregiving, and sex. This approach to romantic love was unique at the time in placing romantic love within an evolutionary and developmental framework, viewing it as a human universal rather than a culturally constructed artifact, and measuring some of its aspects in terms of individual differences noted by Ainsworth and her colleagues (1978) in studies of infant-caregiver attachment. Over the years, this once-speculative approach to love has generated a large body of empirical evidence and has made contact with the expanding literature on evolutionary psychology.

There is still a great deal of work to be done. We need parallel measures of behavioral system hyperactivation and deactivation for all of the behavioral systems discussed by Bowlby: attachment, caregiving, sex, exploration, affiliation, and anger/aggression. We need to learn more about how and why these systems develop either optimally or non-optimally. We need to explore ways to intervene clinically or educationally to correct non-optimal development. We need more studies, using more methods, at the interfaces of the attachment, caregiving, and sexual systems, including studies of physiological and neurological underpinnings. We need to do more to integrate our approach to love, caregiving, and sex with other insightful and well validated approaches. In the present chapter we have provided a small example of integration by addressing points of tension and possible overlap between the attachment, triangular, and interdependence approaches to love. Hopefully, as we continue to explore love's complexities, we will generate more useful ideas for a broader, more humane, and more applicable psychology of relationships, one that pays adequate attention to both persons and situations.

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Table 1: Schematic Summary of the Normative and Individual-Difference Parameters of the Attachment, Caregiving, and Sexual Behavioral Systems

Parameter	Attachment System	Caregiving System	Sexual System
Biological function	Protection from danger by maintaining proximity to supportive others	Provision of protection and support of others in times of need	Passing one's genes to the next generation
Set-goal	Safety from danger and threats; alleviation of one's own distress	Reduction of others' suffering; fostering their growth and development	Having sex (and, usually indirectly, achieving pregnancy)
Contextual triggers	Actual or symbolic threats; unavailability of supportive figures	Others' attachment behaviors or signals of need	Encounters with an attractive, sexually aroused or fertile partner
Primary strategy	Seeking actual or symbolic proximity to external or internal supportive figures	Empathic responsiveness; perspective taking; and sensitive and effective helping	Sexual approach, sexual attraction, and sexual persuasion
Relational constrains on optimal functioning	Availability of sensitive and supportive others in times of need	Willingness and ability to help; others' acceptance of caregiving bids	Ability to sexually attract others; others' acceptance of sexual bids
Adaptive benefits of optimal functioning	Sense of security and being loved; effective affect-regulation	Sense of generativity, love, and communion; compassionate love	Joy, vitality, potency, and feelings of love and intimacy
Hyperactivating strategies	Intense demands for partner's attention and care; hypervigilance regarding threats and signs of rejection	Exaggeration of others' needs; hypervigilance toward others' distress; intrusive and coercive styles of caregiving	Intrusive and coercive sexual attempts; hypervigilance toward partner's signals of sexual attraction or rejection
Deactivating strategies	Denial of attachment needs; avoidance of closeness and intimacy; compulsive self-reliance	Inhibition of empathic help; dismissal of others' distress; distancing from needy others	Dismissal of sexual needs; distancing from a sexually aroused partner; sexual promiscuity as a form of self-aggrandizement